



Conservation Reserves
for Western Australia
as recommended by the
Environmental Protection Authority – 1983

THE DARLING SYSTEM – SYSTEM 6

Part II: Recommendations for Specific Localities

Report 13
October, 1983



Department of Conservation and Environment
Western Australia

Conservation Reserves
for Western Australia
as recommended by the
Environmental Protection Authority – 1983

THE DARLING SYSTEM – SYSTEM 6

Part II: Recommendations for Specific Localities



DEPARTMENT OF CONSERVATION AND ENVIRONMENT
SUPPORT STAFF

Dr M. J. Mulcahy, BSc (For) Phd F.A.I.A.S.
Mr I. M. Briggs, BA (Hons)
Mrs L. T. Berson, BA
Mr S. R. Vellacott, BSc
Mr M. S. Betham, BA
Mrs C. D. McDavitt
Mr M. T. Aplin, B.Bus (from 22.4.81 to 28.5.82)

DESIGN/LAYOUT

Brian Stewart

ARTWORK

Tony Berman

Part II — ISBN 0 7244 6794 7
Part I & II — Whole — ISBN 0 7244 6802

CONTENTS PART II

		Page
Chapter 7	Introduction to Part II	38
Chapter 8	Recommendations for Country Localities	42
Chapter 9	Recommendations for Metropolitan Localities	150
Tables	1 Strategies applied to Country Localities	46
	2 Strategies applied to Metropolitan Localities	154
Figures	2 Potential for Regional Parks in System 6 (also appears as Figure 1 in Chapter 4)	40
	3 Country Localities Map	44
	4 Legend for Boundaries and Symbols shown on Locality Figures	49
	5-72 Detailed Maps of each Country Locality	52
	73 Metropolitan Localities Map	152
	74 Legend for Boundaries and Symbols shown on Locality Figures	157
	75-165 Detailed Maps of each Metropolitan Locality	159
Appendix C	Summaries of Public Comments on Specific Localities in the System 6 Study Report (Green Book) April, 1981.	

Chapter 7

INTRODUCTION TO PART II

The general recommendations of Part I (listed below), and information from submissions have been applied in developing the detailed recommendations for the 209 specific localities presented in Part II. Of the 209 specific localities, 101 are in country areas (Chapter 8) and 108 in the Perth Metropolitan Region (Chapter 9).

For the convenience of the reader, Figure 1 from Chapter 4, indicating the areas identified as potential Regional Parks, has been included in this chapter as Figure 2 following the list of general recommendations below.

STATE FOREST

1. There should be established in the State Forest, an adequate and representative system of Management Priority Areas for conservation of flora, fauna and landscape, based on those identified for the purpose in the Forests Department's Working Plan No. 87 of 1982.
2. The necessary legislation should be enacted so that the provisions of a working plan as it relates to conservation MPAs shall be deemed to be and take effect as if it were a regulation, and so be unalterable except in the manner required in the Interpretation Act for the amendment of regulations made under an Act of Parliament.
3. The powers proposed in Recommendation 2 above should be progressively applied to secure the purpose of the identified conservation MPAs following review by the Government of their conservation value in relation to their potential for other uses, and the EPA should be involved in the said reviews.
4. Priority in review and implementation should be given to conservation MPAs where conflicting uses are proposed for the near future.
5. Management plans for conservation MPAs should be prepared and made public as soon as practicable.
6. It should be a clearly recognised and stated objective of management of State Forest as a whole to protect the conservation value of MPAs defined for that purpose in approved Working Plans.

LAND ACT RESERVES

7. The Government should recognise the high conservation value of the remaining natural areas outside State Forest, particularly those proposed for Land Act reservation as parks and nature reserves, and further that they should not be regarded as a readily available source of cheap land for development purposes.
8. The proposed new areas for reservation as parks and nature reserves should be given security of tenure and purpose commensurate with their conservation value after assessment of the potential alternative competing uses.
9. In the meantime, the proposed new parks and nature reserves identified as having potential for conflicting uses should be designated as Class C, for conservation of flora and fauna and recreation in some appropriate combination, and for water supply, where appropriate.
10. The new parks and nature reserves proposed under Recommendation 9 should be vested in the W.A. Wildlife Authority, the National Parks Authority or other appropriate managing agency for a limited term, under conditions which would permit mineral exploration and evaluation under stringent conditions.
11. During the period of a limited term vesting, active steps should be taken to determine the potential of the land for uses conflicting with conservation, giving priority to those areas where such uses are under consideration provided that the determination does not itself destroy or permanently damage the conservation value.
12. Management plans for the newly dedicated parks and nature reserves should be prepared and published as soon as practicable.

LAND USE PLANNING

13. The Government should establish an investigation into statutory means by which land beyond the Perth Metropolitan Region could be set aside as open space at the regional level, with a view to early implementation in the area of System 6.

14. The Government should establish an investigation into legislative means of achieving, through public planning procedures, the protection of the conservation and public amenity values of designated privately owned areas, without necessitating public acquisition of the land affected.

MANAGEMENT OF PARKS, RESERVES AND OPEN SPACE

15. Areas identified through planning procedures as open space of regional significance should, where appropriate, be designated as Regional Parks.
16. The National Parks Authority should be given the responsibility for coordinating the planning and management of areas identified as Regional Parks, and for the following functions:
 - i) the provision of technical and other advice to managing agencies and owners;
 - ii) an examination of the present funding and coordination of development programmes.
17. The Government should give urgent consideration to providing adequate staffing and funding for the National Parks Authority and other agencies concerned with management of parks and reserves.

INVENTORY

18. A coordinating committee responsible for the land resource inventory required for planning purposes should be established.
19. A Recreation Areas Strategy Plan should be undertaken by the Department for Youth Sport and Recreation, giving priority to Systems 1, 2 and 6. It should include:
 - i) a survey of the recreational resources available
 - ii) an assessment of current and likely future demands.



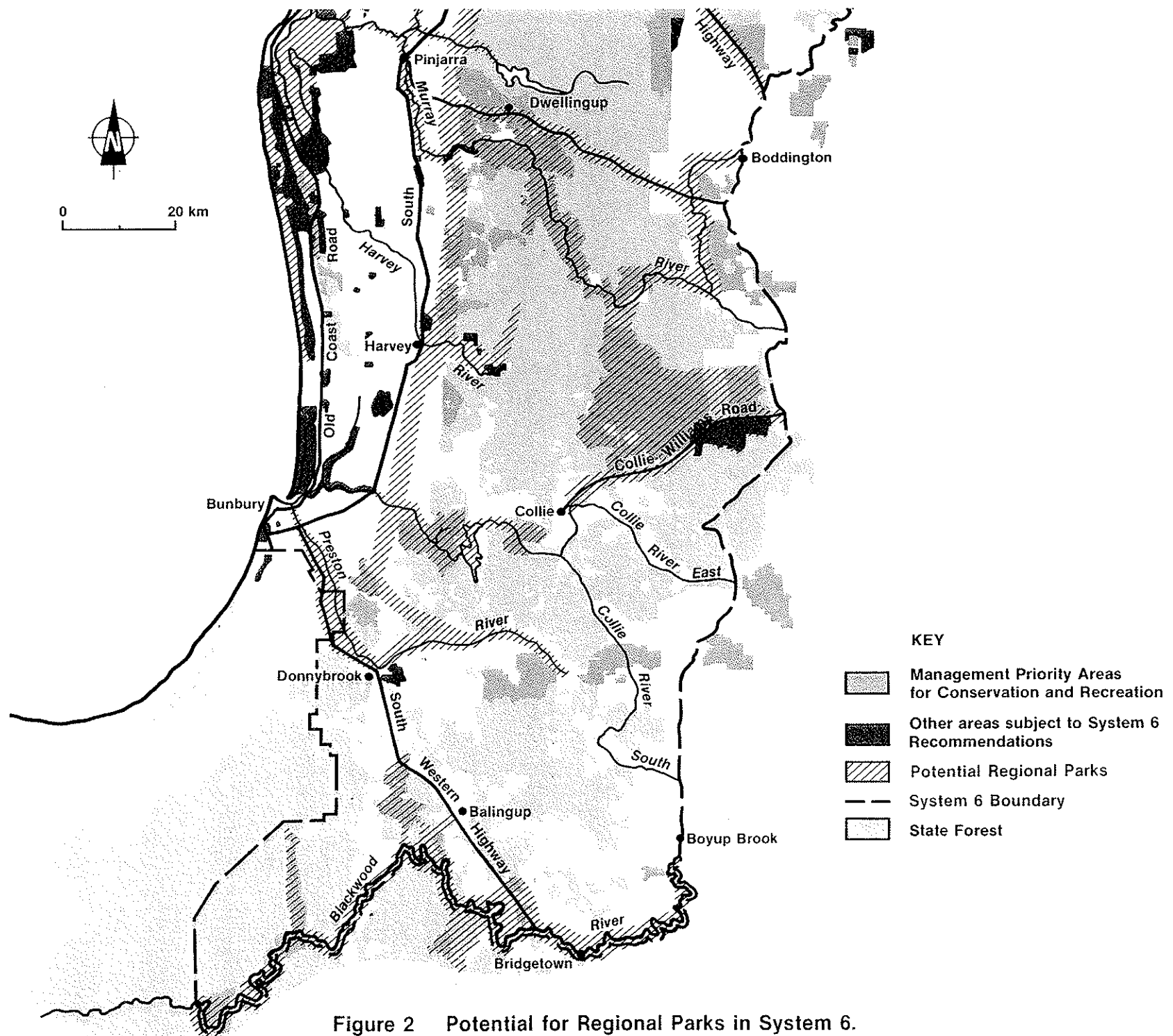


Figure 2 Potential for Regional Parks in System 6.
(Also appears as Figure 1 in Chapter 4).

Chapter 8

RECOMMENDATIONS FOR COUNTRY LOCALITIES

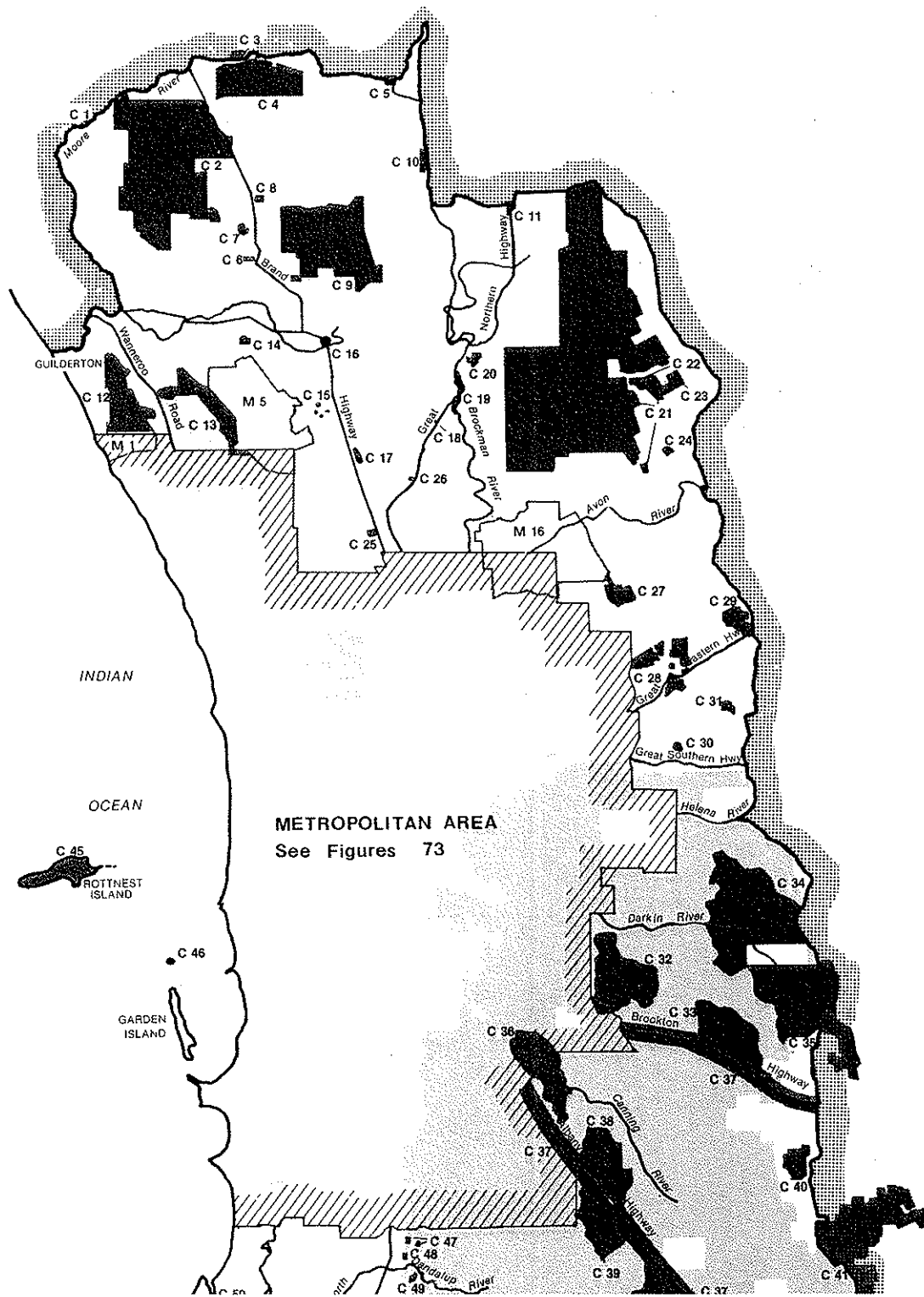
8.1 GENERAL

As indicated in Chapter 7, detailed recommendations have been developed for 101 country localities. Each locality is listed below. Figure 3 shows the distribution of the localities and Table 1 indicates how each country locality is affected by the general principles and recommendations developed in Part I. Section 8.2 which follows contains specific information and recommendations, including a detailed map, for each locality.

Locality Number	Figure
C1 Reserve C21164, Cowalla Bridge	5
C2 Moore River National Park	5
C3 Reserves C15816 and C25591, Moore River	6
C4 Quins Hill	6
C5 Reserve A3345, Moore River	7
C6 Reserve C9676, Yurine Swamp	8
C7 Beermullah Lake	8
C8 Reserve C1224, Bartletts Well	8
C9 Gingin and Boonanarring Brooks	9
C10 Lake Wannamal	10
C11 Reserves C965 and C27028, Udumung Brook	10
C12 Caraban Management Priority Area (MPA 15.4*)	11
C13 Wabbling Management Priority Area (MPA 15.3)	12
C14 Reserves C20366 and C25431, Lake Muckenburra	13
C15 Reserves C24257 and C26756, Gingin	14
C16 Geological Sites, Gingin	15
C17 Lake Chandala, Muchea	16
C18 Reserve C42, Burroloo Well	17
C19 Needonga and Chittering Lakes	17
C20 Reserve C32807, Mt. Byroomanning	17
C21 Julimar Management Priority Area (MPA 2.1)	18
C22 Reserve C3156, Bindoon Spring	18
C23 Reserve C22096, Culham	18
C24 Reserve C19904, West Toodyay	18
C25 Mound Springs, Muchea	19
C26 Reserve C4070, North of Bullsbrook	20
C27 Beelaring and Goonaring Springs	21
C28 Reserves near Wundowie	22
C29 Reserves north-west of Clackline	23
C30 Reserve C30363, Inkpen Road	24
C31 Reserves C25860 and C30393, Berry Brow Road	24
C32 Dale Management Priority Area (MPA 2.6)	25
C33 Russell Management Priority Area (MPA 2.5)	26
C34 Gunapin Management Priority Area (MPA 2.3)	27
C35 Sullivan Management Priority Area (MPA 2.4)	27
C36 Eagle Hill Management Priority Area (MPA 8.1)	28
C37 Brookton and Albany Highways	29
C38 Cooke Management Priority Area (MPA 8.2)	30
C39 Windsor Management Priority Area (MPA 8.6)	30
C40 Boyagarring Management Priority Area (MPA 8.5)	31
C41 Lupton Management Priority Area (MPA 8.8)	31
C42 Duncan Management Priority Area (MPA 3.5)	32
C43 Gyngoorda Management Priority Area (MPA 3.4)	32
C44 Wandering Management Priority Area (MPA 3.10)	33
C45 Rottnest Island	34
C46 Carnac Island	35
C47 Reserve C14629, North Dandalup	36
C48 Reserve C19413, North Dandalup	36
C49 Reserve C21038, North Dandalup	36

C50	Peel Inlet	37
C51	Harvey Estuary	38
C52	Lakes McLarty and Mealup	38
C53	Coolup Reserves	39
C54	Yalgorup National Park	40A & B
C55	Clifton Management Priority Area (MPA 10.1)	40A
C56	McLarty Management Priority Area (MPA 10.11)	40B
C57	Myalup Management Priority Area (MPA 10.2)	40B
C58	Reserve A23172, Harvey River	41
C59	Reserve C22199, Wagerup	41
C60	Reserves C12049 and C12632, Harvey	42
C61	Reserve C24472, Lake Preston	43
C62	Reserve C2547, Harvey	43
C63	Myalup Swamp and Mialla Lagoon	44
C64	Reserve C2517, Harvey	44
C65	Benger Swamp	45
C66	Leschenault Inlet	46
C67	Brunswick, Collie and Wellesley Rivers	46
C68	Anglesea Island	47
C69	Big Swamp, South Bunbury	48
C70	South Bunbury coastal land	49
C71	Reserves near Dalyellup	50
C72	Teesdale Management Priority Area (MPA 3.7)	51
C73	Murray Valley Management Priority Area (MPA 3.3)	52
C74	Plavins Management Priority Area (MPA 3.6)	53
C75	Samson Management Priority Area (MPA 10.5)	54
C76	Federal Management Priority Area (MPA 10.4)	54
C77	Bell Management Priority Area (MPA 10.3)	55
C78	Reserve C22977, Harvey	56
C79	Reserve C15515, Harvey	56
C80	Reserves east of Harvey	57
C81	Reserve C25727, Harvey	57
C82	Surface Management Priority Area (MPA 10.6)	58
C83	Nalyerin Management Priority Area (MPA 10.7)	58
C84	Trees Management Priority Area (MPA 4.1)	58
C85	Stene Management Priority Area (MPA 10.8)	58
C86	Dardanup Management Priority Area (MPA 4.4)	59
C87	Lennard Management Priority Area (MPA 4.2)	60
C88	Westralia Management Priority Area (MPA 4.3)	61
C89	Donnybrook Reserves	62
C90	Preston Management Priority Area (MPA 5.1)	63
C91	Noggerup Management Priority Area (MPA 5.2)	64
C92	Goonac Management Priority Area (MPA 4.5)	65
C93	Muja Management Priority Area (MPA 4.6)	66
C94	Bennelaking Management Priority Area (MPA 4.7)	66
C95	Mullalyup Management Priority Area (MPA 5.4)	67
C96	Reserve C29121, Wilga	68
C97	St. John Brook Management Priority Area (MPA 12.2)	69
C98	Reserves A25446 and A3412, Blackwood River	70A
C99	Greenbushes Management Priority Area (MPA 5.5)	70A & B
C100	Dalgarup Management Priority Area (MPA 12.1)	71
C101	Nollajup Management Priority Area (MPA 5.6)	72

* Forests Department Reference Number



- C1 Reserve C 21164, Cowalla Bridge
- C2 Moore River National Park
- C3 Reserves C15816 and C25591, Moore River
- C4 Quins Hill
- C5 Reserve A3345, Moore River
- C6 Reserve C9676, Yurine Swamp
- C7 Beermullah Lake
- C8 Reserve C1224, Bartlett's Well
- C9 Gingin and Boonanarring Brooks
- C10 Lake Wannamai
- C11 Reserves C965 and C27028, Udumung Brook
- C12 Caraban Management Priority Area (MPA 15.4)
- C13 Wabbling Management Priority Area (MPA 15.3)
- C14 Reserves C20366 and C25431, Lake Muckenburra
- C15 Reserves C24257 and C26756, Gingin
- C16 Geological Sites, Gingin
- C17 Lake Chandala, Muchea
- C18 Reserve C42, Burrooloo Well
- C19 Needonga and Chittering Lakes
- C20 Reserve C32807, Mt. Byroomanning
- C21 Julimar Management Priority Area (MPA 2.1)
- C22 Reserve C3156, Bindoon Spring
- C23 Reserve C22096, Culham
- C24 Reserve C19904, West Toodyay
- C25 Mound Springs, Muchea
- C26 Reserve C4070, North of Bullisbrook
- C27 Beelaring and Goonaring Springs
- C28 Reserves near Wundowie
- C29 Reserves north-west of Clackline
- C30 Reserve C30363, Inkpen Road
- C31 Reserves C25860 and C30393, Berry Brow Road
- C32 Dale Management Priority Area (MPA 2.6)
- C33 Russell Management Priority Area (MPA 2.5)
- C34 Gunapin Management Priority Area (MPA 2.3)
- C35 Sullivan Management Priority Area (MPA 2.4)
- C36 Eagle Hill Management Priority Area (MPA 8.1)
- C37 Brookton and Albany Highways
- C38 Cooke Management Priority Area (MPA 8.2)
- C39 Windsor Management Priority Area (MPA 8.6)
- C40 Boyagarring Management Priority Area (MPA 8.5)
- C41 Lupton Management Priority Area (MPA 8.8)
- C42 Duncan Management Priority Area (MPA 3.5)
- C43 Gyngoorda Management Priority Area (MPA 3.4)
- C44 Wandering Management Priority Area (MPA 3.10)
- C45 Rottnest Island
- C46 Carnac Island
- C47 Reserve C14829, North Dandalup
- C48 Reserve C19413, North Dandalup
- C49 Reserve C21038, North Dandalup
- C50 Peel Inlet
- C51 Harvey Estuary

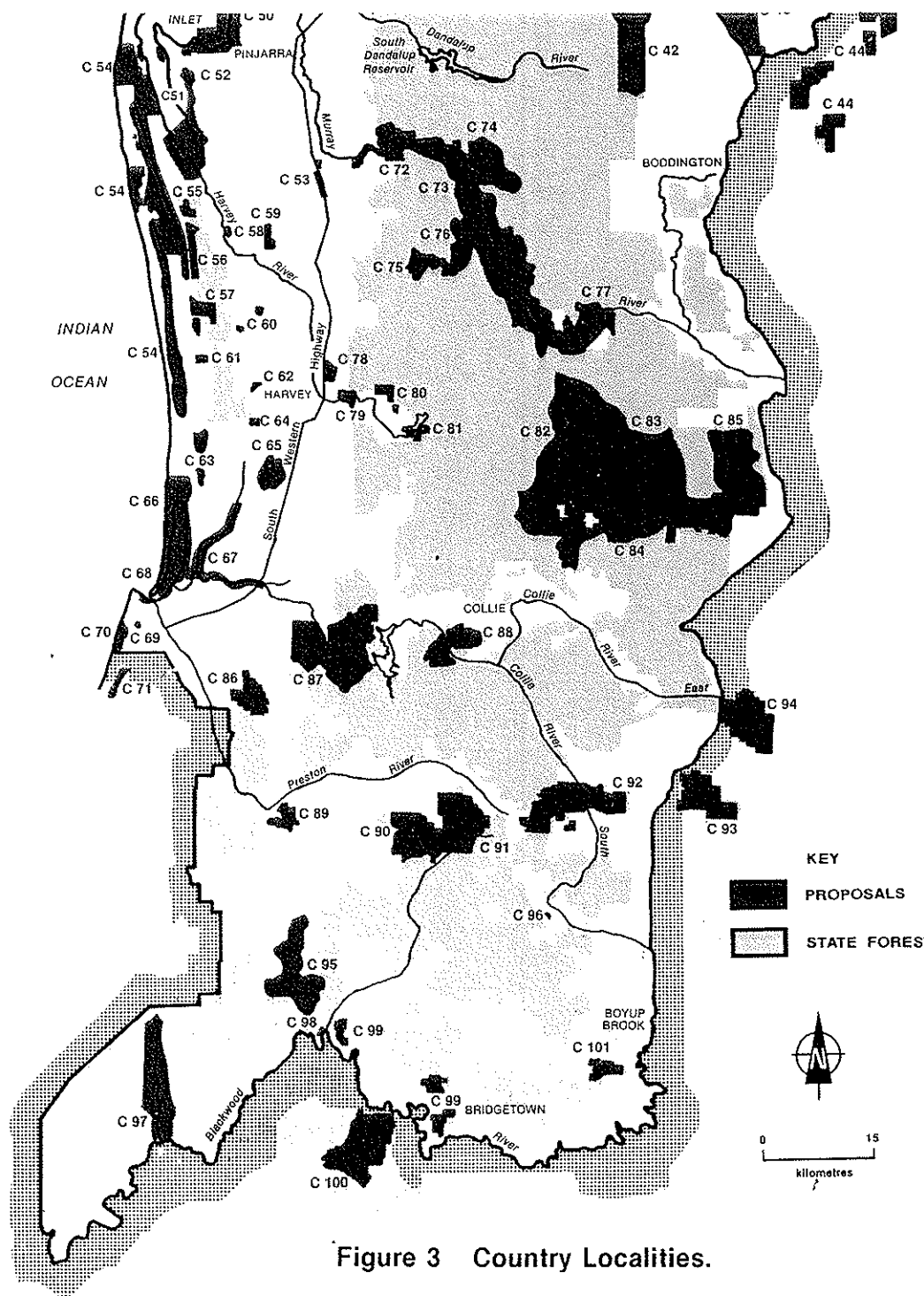


Figure 3 Country Localities.

- C54 Yalgorup National Park
- C55 Clifton Management Priority Area (MPA 10.1)
- C56 McLarty Management Priority Area (MPA 10.11)
- C57 Myalup Management Priority Area (MPA 10.2)
- C58 Reserve A23172, Harvey River
- C59 Reserve C22199, Wagerup
- C60 Reserves C12049 and C12632, Harvey
- C61 Reserve C24472, Lake Preston
- C62 Reserve C2547, Harvey
- C63 Myalup Swamp and Mialla Lagoon
- C64 Reserve C2517, Harvey
- C65 Benger Swamp
- C66 Leschenault Inlet
- C67 Brunswick, Collie and Wellesley Rivers
- C68 Anglesea Island
- C69 Big Swamp, South Bunbury
- C70 South Bunbury coastal land
- C71 Reserves near Dalyellup
- C72 Teesdale Management Priority Area (MPA 3.7)
- C73 Murray Valley Management Priority Area (MPA 3.3)
- C74 Plavins Management Priority Area (MPA 3.6)
- C75 Samson Management Priority Area (MPA 10.5)
- C76 Federal Management Priority Area (MPA 10.4)
- C77 Bell Management Priority Area (MPA 10.3)
- C78 Reserve C22977, Harvey
- C79 Reserve C15515, Harvey
- C80 Reserves east of Harvey
- C81 Reserve C25727, Harvey
- C82 Surface Management Priority Area (MPA 10.6)
- C83 Nalyerin Management Priority Area (MPA 10.7)
- C84 Trees Management Priority Area (MPA 4.1)
- C85 Stene Management Priority Area (MPA 10.8)
- C86 Dardarup Management Priority Area (MPA 4.4)
- C87 Lennard Management Priority Area (MPA 4.2)
- C88 Westralia Management Priority Area (MPA 4.3)
- C89 Donnybrook Reserves
- C90 Preston Management Priority Area (MPA 5.1)
- C91 Noggerup Management Priority Area (MPA 5.2)
- C92 Goonac Management Priority Area (MPA 4.5)
- C93 Muja Management Priority Area (MPA 4.6)
- C94 Bennelaking Management Priority Area (MPA 4.7)
- C95 Mullalyup Management Priority Area (MPA 5.4)
- C96 Reserve C29121, Wilga
- C97 St. John Brook Management Priority Area (MPA 12.2)
- C98 Reserves A25446 and A3412, Blackwood River
- C99 Greenbushes Management Priority Area (MPA 5.5)
- C100 Dalgarup Management Priority Area (MPA 12.1)
- C101 Nollajup Management Priority Area (MPA 5.6)

TABLE 1: STRATEGIES APPLIED TO COUNTRY LOCALITIES

This table indicates which of the country localities are affected by the general principles and recommendations outlined in Part I.

Locality	Land Tenure	Locality consists wholly or in part of an MPA	Recommended to form Regional Park, or part thereof (Rec. 15 and 16)	Includes Reserve(s) proposed for limited-term vesting	Includes Reserve(s) proposed for changes in purpose, vesting or class	Includes proposed new Reserve(s) — Land Act (L), Marine (M) or Aquatic (A)	Includes Reserve(s) proposed for inclusion of "water" in purpose	Preparation of Management Plans recommended	Land Act Reserve(s) cancelled and added to State Forest	Application of planning controls (Rec. 14) proposed
C1	LAR		*		*					
C2	LAR: vCI		*	*	*		*	*		
C3	LAR		*							
C4	Fr-pr		*							*
C5	LAR		*							
C6	LAR				*					
C7	LAR; Fr-pr				*			*		*
C8	LAR				*		*			
C9	LAR; Fr-pr; vCI				*	L	*	*		*
C10	LAR; Fr-pr				*					*
C11	LAR				*					
C12	SF; Fr-Crown	*						*		
C13	LAR; SF; vCI	*							*	
C14	LAR				*		*			
C15	LAR				*					*
C16	Fr-pr				*			*		
C17	LAR; Fr-pr				*					*
C18	LAR				*					
C19	LAR		*		*					
C20	LAR		*		*					
C21	LAR; SF; Fr-pr and C/With	*	*		*		*			
C22	LAR		*		*			*		
C23	LAR		*		*					
C24	LAR		*		*			*		
C25	LAR; Fr-pr; C/With Lease; vCI				*					*
C26	LAR				*					*
C27	LAR: Fr-pr				*			*		*
C28	LAR; vCI			*	*	L		*		*
C29	LAR; Fr-pr; vCI			*	*			*		*
C30	LAR				*					
C31	LAR				*					
C32	SF; Fr-CF	*						*		
C33	SF	*	*					*		
C34	SF	*						*		
C35	LAR; SF; vCI	*			*	L		*		
C36	SF	*						*		
C37	SF		*							
C38	LAR: SF	*	*					*	*	
C39	SF	*	*							
C40	vCI	*							*	
C41	LAR; vCI	*							*	

TABLE 1 (continued)

C42	LAR; Fr-MWA and PWD; vCI; SF	*							*
C43	SF	*						*	
C44	LAR; TR	*							*
C45	LAR		*			M		*	
C46	LAR					M		*	
C47	LAR		*		*				
C48	LAR		*		*				
C49	LAR		*	*	*		*	*	
C50	LAR; Fr-pr		*		*	A			
C51	LAR; Fr-pr		*		*	L,A			
C52	LAR; Fr-pr; vCI		*		*	L			
C53	LAR				*			*	
C54	LAR (incl NP)		*		*				
C55	SF	*	*						
C56	LAR; SF	*	*						*
C57	SF	*							
C58	LAR							*	
C59	LAR				*				
C60	LAR				*		*		
C61	LAR								
C62	LAR				*				
C63	Fr-pr								*
C64	LAR				*				
C65	LAR; Fr-DFW; Fr-pr				*				
C66	LAR; Fr-pr; vCI		*		*	L		*	
C67	Fr-pr		*						
C68	LAR; vCI				*				
C69	LAR; Fr-pr								
C70	LAR; Fr-City of Bunbury								
C71	LAR				*			*	
C72	LAR; Fr-pr; SF	*	*		*				*
C73	LAR; SF; Fr-pr	*	*						
C74	SF	*	*						
C75	SF	*	*						
C76	SF	*	*						
C77	SF	*	*						
C78	LAR		*		*				
C79	LAR		*				*		
C80	LAR		*		*				
C81	LAR		*				*		
C82	SF; Fr-pr	*	*						
C83	SF	*	*						

KEY TO LAND TENURE

LAR — LAND ACT RESERVE (S)
 SF — STATE FOREST
 TR — TIMBER RESERVE(S)
 vCI — VACANT CROWN LAND

Fr — FREEHOLD LAND OWNERSHIP:
 pr — private
 MRPA — Metropolitan Region Planning Authority
 CF — Conservator of Forests
 C/With — Commonwealth of Australia
 Crown — Crown (State)
 MWA — Metropolitan Water Authority
 PWD — Public Works Department
 SEC — State Energy Commission
 DFW — Department of Fisheries and Wildlife

Locality	Land Tenure	Locality consists wholly or in part of an MPA	Recommended to form Regional Park, or part thereof (Rec. 15 and 16)	Includes Reserve(s) proposed for limited-term vesting	Includes Reserve(s) proposed for changes in purpose, vesting or class	Includes proposed new Reserve(s) — Land Act (L), Marine (M) or Aquatic (A)	Includes Reserve(s) proposed for inclusion of "water" in purpose	Preparation of Management Plans recommended	Land Act Reserve(s) cancelled and added to State Forest	Application of planning controls (Rec. 14) proposed
C84	LAR; SF; Fr-PWD	*	*						*	
C85	SF	*	*						*	
C86	LAR; SF	*	*						*	
C87	LAR; SF	*	*						*	
C88	LAR; SF; Fr-pr	*	*						*	
C89	LAR; TR; Fr-pr; vCI	*	*	*	*	L		*	*	*
C90	SF	*	*						*	
C91	LAR; SF	*	*						*	
C92	LAR; SF; Lease	*	*						*	
C93	LAR; TR; Lease	*	*						*	
C94	LAR; SF	*	*						*	
C95	SF; Fr-CF and pr	*	*						*	
C96	LAR	*	*		*				*	
C97	LAR; SF; Fr-pr	*	*		*				*	
C98	LAR; Fr-CF	*	*		*			*	*	
C99	SF; TR; Fr-CF	*	*		*				*	
C100	SF	*	*						*	
C101	TR	*	*						*	

KEY TO LAND TENURE

LAR — LAND ACT RESERVE (S)
 SF — STATE FOREST
 TR — TIMBER RESERVE(S)
 vCI — VACANT CROWN LAND

Fr — FREEHOLD LAND OWNERSHIP:
 pr — private
 MRPA — Metropolitan Region Planning Authority
 CF — Conservator of Forests
 CWith — Commonwealth of Australia
 Crown — Crown (State)
 MWA — Metropolitan Water Authority
 PWD — Public Works Department
 SEC — State Energy Commission
 DFW — Department of Fisheries and Wildlife

LEGEND





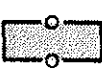
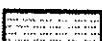
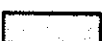












	AREA BOUNDARY
	SYSTEM 6 BOUNDARY
	METROPOLITAN REGION BOUNDARY
	LOCAL AUTHORITY BOUNDARY
	METROPOLITAN REGION SCHEME (M.R.S.) PARKS AND RECREATION RESERVE BOUNDARY
	NATIONAL PARK
	MANAGEMENT PRIORITY AREA (M.P.A.)
	SURVEYED BOUNDARY
	UNSURVEYED BOUNDARY
	GROUPED LOTS OR LOCATION BOUNDARY
	TOWNSITE BOUNDARY (under Land Act)
	TOWNSITE BOUNDARY (under Land Govt. Act)
	AGRICULTURAL AREA OR ESTATE BOUNDARY
	LAND DISTRICT BOUNDARY
	STATE FOREST BOUNDARY
	SUBDIVIDED CROWN LOT OR LOCATION BOUNDARY
	CATCHMENT AREA BOUNDARY
3517	LOCATIONS, TOWN OR SUBURBAN LOTS
2624	SUBDIVIDED LOCATIONS, TOWN OR SUBURBAN LOTS
128	AGRICULTURAL AREA, ESTATE AND SUBDIVISIONAL LOTS
	RESERVE SYMBOL
	TRIG. STATION or STANDARD SURVEY MARK

Figure 4 Legend for Boundaries and Symbols shown on Locality Figures.

8.2 SPECIFIC INFORMATION AND RECOMMENDATIONS

The following consists of a description of each locality in terms of land tenure, existing and proposed planning and management aspects, a description of the physical and biological environment and the locality's regional importance and relevant management considerations.

C1 RESERVE C21164, COWALLA BRIDGE

The recommended area is situated on the Moore River at Cowalla Bridge, about 20km from the coast, and comprises Reserve C21164, for Stock route, vested in the Shire of Gingin.

The fence line on the western side of the Reserve is in poor condition and there are signs of moderately heavy grazing, indicating that cattle are wandering onto the Reserve. The area is zoned Rural under the Gingin Town Planning Scheme.

Reserve C21164 straddles the Moore River. The northern portion is largely cleared and is apparently being farmed but some flooded gum and swamp paperbark remain. South of the river there is low open-forest of acorn banksia associated with spearwood. Other species present are pricklybark, flooded gum, slender banksia, Menzies' banksia, holly-leaf banksia, blackboy and Christmas tree.

Despite its small size the Reserve is valuable. It differs from other reserves between Gingin and the Moore river in that its vegetation is largely single storey, consisting of a dense layer 2 to 6m tall, with little or no ground cover.

The area's value for conservation and recreation and its location makes it a part of the larger area of open space of regional significance extending along the Moore river (see Figure 1, Chapter 4). Important management considerations for the recommended area include (i) refencing of the Reserve so as to exclude sheep and cattle, and (ii) the proximity of the Special Rural Zone to the west of the Reserve.

Recommendations:

- C1.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C1.2 That the purpose of Reserve C21164 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

C2 MOORE RIVER NATIONAL PARK

The recommended area is situated just south of the Moore River about 90km north of Perth, and comprises Reserves C28462, for National Park, vested in the National Parks Authority; C15928, for Water, vested in the Shire of Gingin; C18352, for Government Requirements, and C33032, for Stopping Place for Travellers and Stock, both not vested; and vacant Crown land (Figure 5).

The area is within the Gingin Groundwater Area; any future groundwater extraction could affect vegetation. SEC lines run along the north-east boundary of the Park and adjacent lines are proposed. The Dampier to Perth gas pipeline will also pass through the area. The Brand Highway may need to be widened by 50m. The vacant Crown land, which has potential for diatomite and heavy mineral sands, is not affected by mineral claims but is subject to petroleum claims. Part of Reserve C33032 is used as a road metal dump and camp site for the MRD. The Gingin Shire Council has permission to remove sand and gravel from Reserve C33032. The proposed Eneabba — Gingin railway will pass through the area. There is a registered apiary in the wandoo woodland.

The National Park carries a wide range of vegetation. The most common, on pale grey sands, consists of a low woodland of banksia; pricklybark and Christmas tree, with a rich understorey which includes *Scholtzia involucrata*. In the central northern section there is a high, undulating area of dry dunes where the vegetation is a low open-woodland of banksia with an understorey of species including blueboy. Running north-south there are two low-lying strips called Nine-Mile Swamp and Six-Mile Swamp which carry low woodland and low open-woodland of banksia, in seasonally flooded areas, swamp banksia and Moonah paperbark. To the south of Nine-Mile Swamp there are a few areas of marri with some flooded gum, with an understorey containing rose banksia, morrison and blackboy. Rose banksia is practically restricted to this National Park.

The wet sands and peat of the more permanent swamps grow paperbark and flooded gum, with heath and scrub and, in wetter areas, sedges. On the extreme eastern side of the Park there are pale grey sands with a low open-woodland of banksia. Wildflowers of popular appeal, such as golden kangaroo paw and winter bell, are plentiful in the Park.

The vacant Crown land to the south contains seven small semi-permanent lakes, which are of better quality than the swamp lakes in the Park. The land is characterised by a pattern of low

dunes of yellow sand with intervening lakes which are well defined, rounded and permanent. The vegetation of the drier areas consists of low woodland of banksia, pricklybark and Christmas tree. The lakes contain open water. Their fringes are vegetated with closed-sedgeland of jointed twig rush, surrounding which are some patches of low closed-forest of swamp paperbark and low woodlands of paperbark and banksia, principally, swamp banksia and holly-leaf banksia. Where holly-leaf banksia dominates, the understorey contains rose banksia, white myrtle and hovea. Near some of the lakes there are also woodlands of marri. The frogs *Ranidella glauerti*, *R. insignifera* and *Pseudophryne guentheri* are found in the lakes.

The vacant Crown land would be a valuable addition to the Park since it would preserve the Caladenia complex, which is not represented in other Crown land, and would provide the Park with greater diversity of vegetation. Not only are the yellow and pale yellow sands of this land and their associated flora different from those of the Park but also the wetlands are different from the ill-defined, swampy areas that occur in the Park. Moreover, semi-permanent lakes, such as those contained in the vacant Crown land, are important as summer refuges for water-birds.

Although Reserve C33032, to the east of the Gingin Scarp, is adjacent to the Park, much of it is of a distinct character and its addition would increase the biological diversity of the Park. Furthermore it occupies higher ground and provides fine views over the Coastal Plain. Towards the southern end of the Reserve there is a woodland of wandoo, growing in gravelly soil. Nearby is an area of yellow sand, which supports scattered trees of pricklybark, marri and slender banksia, with some couch honeypot and blackboy in the understorey. White sands in the Reserve are associated with closed-heath and scattered, emergent Christmas trees and with low woodland of banksia and pricklybark with a varied understorey.

Reserves C15928 and C18352 situated at the south-eastern corner of the National Park contain interesting vegetation. Reserve C15928 has low woodland of holly-leaf banksia and pricklybark with a shrub layer which includes woollybush, blueboy and buttercup. Reserve C18352 includes a low, swampy area of sand, with a tall shrubland of Christmas tree, banksia, silky bloodflower, snakebush, paperbark and blackboy. An occurrence of swamp cypress is especially noteworthy. The western grey kangaroo is plentiful.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation value. It is complemented by the adjoining regional open space extending along the Moore River. Management of the area will need to be coordinated.

Recommendations:

- C2.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5)
- C2.2 That Reserve C33032 be cancelled and its area added to Reserve C28462.
- C2.3 That Reserve C28462 be classified as Class A.
- C2.4 That the vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna, and Water, and vested for a limited term of 10 years in the W.A. Wildlife Authority (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.
- C2.5 That access to the new Reserve (recommended in C2.4) for the purposes of exploration and evaluation of mineral potential be permitted where necessary under conditions specified in the vesting order which should be such as to protect the area's conservation value.
- C2.6 That the purpose of Reserve C15928 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority.
- C2.7 That Reserve C18352 be cancelled and its area added to Reserve C15928.

The recommended area comprises a part of the larger area of open space of regional significance extending along the Moore River (see Figure 1, Chapter 4), an area which is of particular importance as the only major river valley between the Swan and Murchison Rivers.

Recommendations:

- C3.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C3.2 That the Department of Fisheries and Wildlife investigate the conservation and the Public Works Department the water supply potential of Reserves C15816 and C25591, and report their findings to the Environmental Protection Authority.

C4 QUINS HILL

The recommended area is situated near the Moore River, about 90km north of Perth, and comprises Swan Locations 5431, 5432, 5433 and lots 101 to 104 of Location 5429, privately owned freehold land (Figure 6).

The area has minor potential for groundwater extraction.

Soil composition within the area varies greatly, from laterite on hill tops to deep sand in valleys. The vegetation is dominated by closed- and open-heaths which are remarkably rich in plant species and are the closest to Perth of the northern heathlands. There are many species of banksia, including three which are unnamed. Dryandra is common, especially on the lateritic soils, and the great variety of heath species, several of which are rare, includes smokebush, myrtle, pea plant, wattle, kangaroo paw, sundew, boronia, snakebush, banjine, leschenaultia and trigger plant. In every season there are wildflowers in bloom, and the area is consequently popular with tourists.

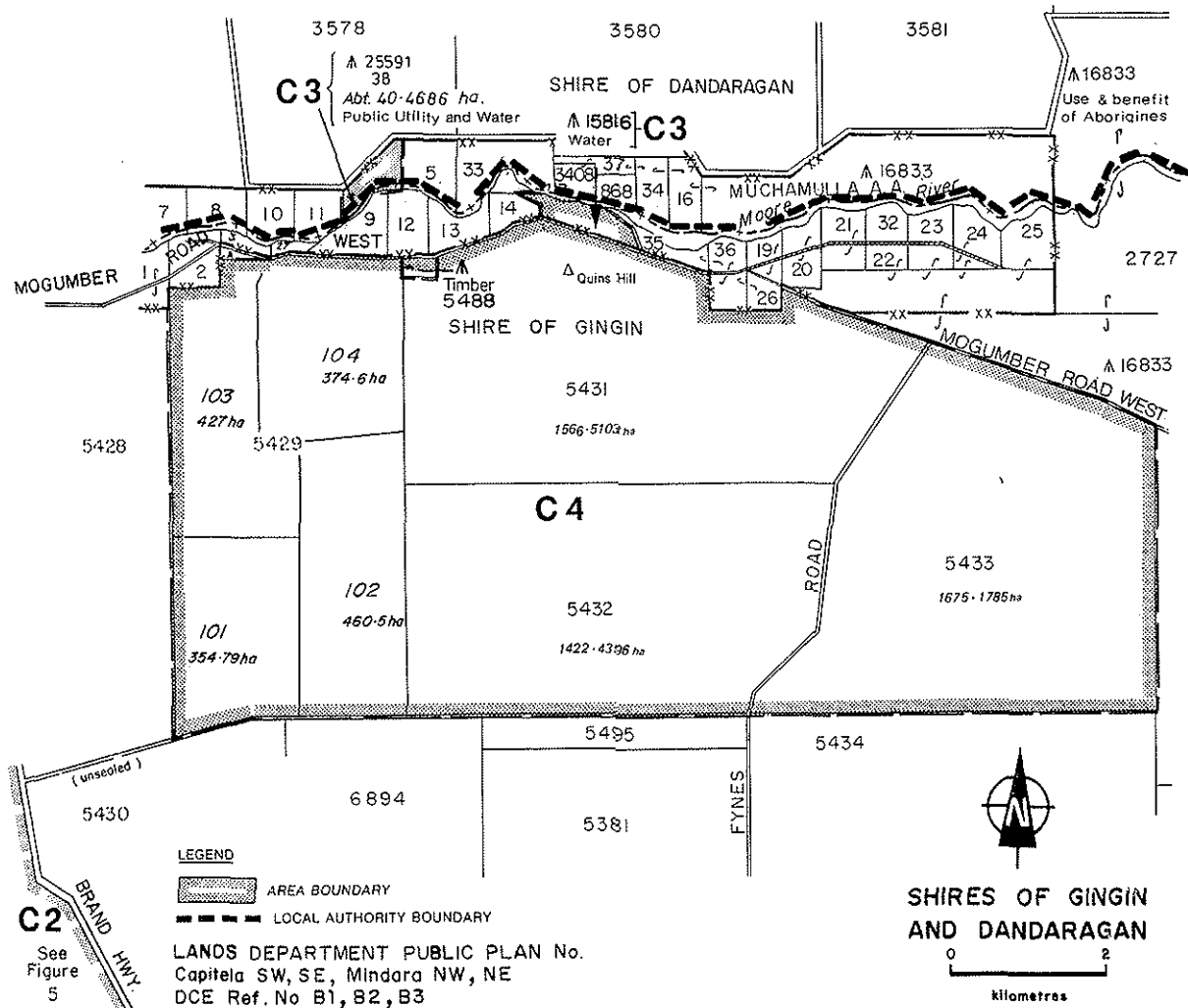


Figure 6

In the sandy valleys there is low open-woodland of pricklybark with some taller marri in places. Banksia is usually associated with this formation. Quins Hill itself is a lateritic hill with both low open-woodland of wandoo and tall shrubland in which Morrison's cypress and broombush honeymyrtle are prominent. The uncommon *Stirlingia simplex* occurs here. The area has a very high conservation value and is important both scientifically and aesthetically. Swan Location 5433 is substantially uncleared, while the other Locations are partially cleared.

The recommended area comprises a part of the larger area of open space of regional significance extending along the Moore River (see Figure 1, Chapter 4), an area which is of particular importance as the only major river valley between the Swan and Murchison Rivers.

Recommendations:

- C4.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C4.2 That ways and means of protecting the conservation value of the area be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C5 RESERVE A3345, MOORE RIVER

The recommended area is situated in the north-east corner of System 6, about 4km north-west of Mogumber at the junction of the east branch and main stream of the Moore River. It comprises Reserve A3345, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 7).

The area has limited potential for water supply, but the PWD wishes to retain right of access to the water courses.

The river runs in a valley some 15 to 20m deep, the sides of which support woodland of wandoo, marri and flooded gum. The remainder of the Reserve consists of low sand dunes covered mainly by low open-forest of banksia and pricklybark, with some Christmas tree. There is also some open-woodland of marri, with a well-defined understorey of pricklybark and banksia. On the deeper sand the understorey includes blueboy, silky bloodflower and scrub sheoak.

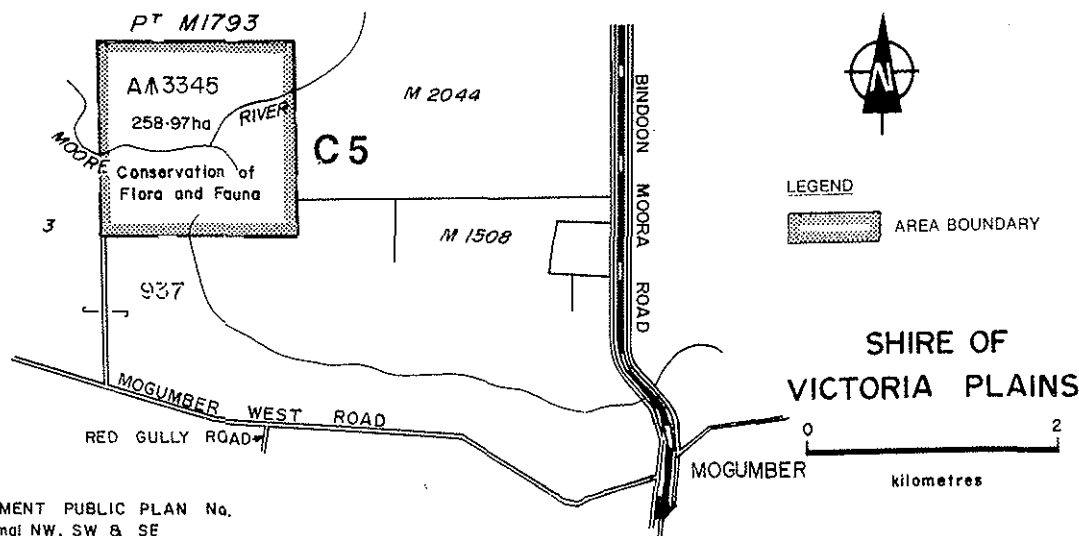
The Reserve offers a good variety of habitats for wildlife, especially passerine birds. It is important as a type which elsewhere has been mostly developed for agriculture.

Reserve A3345 is one of the few reserves in System 6 that contain representative areas of the Cullala Soil-landform Unit and is easily the largest of all such areas. The Reserve also contains the largest area of the Moore Unit.

The recommended area comprises a part of the larger area of open space of regional significance extending along the Moore River (see Figure 1, Chapter 4), an area which is of particular importance as the only major river valley between the Swan and Murchison Rivers.

Recommendations:

- C5.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C5.2 That the purpose and vesting of Reserve A3345 is endorsed.



LANDS DEPARTMENT PUBLIC PLAN No.
 I:25 000 Wannamal NW, SW & SE
 DCE Ref. No. B4

Figure 7

C6 RESERVE C9676, YURINE SWAMP

The recommended area is situated about 16km north-west of Gingin and comprises Reserve C9676, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 8).

The Reserve is within the Gingin Brook Catchment and the Gingin Groundwater Area. Possible future groundwater extraction by the MWA could affect vegetation. Rubbish is being dumped to the west of Yurine Swamp. Stock appears to have entered the Reserve and bared the ground to the north of the swamp.

A bitumen road divides the Reserve into an eastern portion, which contains Yurine Swamp, and a larger western portion. The swamp is surrounded by a tall stand of swamp paperbark, and the eastern portion also carries flooded gum, swamp banksia and woollybush. The western portion carries mixed stands of marri, pricklybark and banksia. The understorey species include blackboy, blueboy, one-sided bottlebrush, stinkwood, common hovea and prickly moses.

Yurine Swamp has been popular with duck shooters, and the Reserve is classified as a shooting and hunting area during an open season.

Important management considerations for the area include the area's water supply potential, and the prevention of rubbish dumping.

Recommendation:

C6.1 That Reserve C9676 be classified as Class A.

C7 BEERMULLAH LAKE

The recommended area is situated about 20km north-west of Gingin, and comprises Reserve C22223, for Recreation, vested in the Shire of Gingin; and Location 829 and part of Locations 830 and 2591, privately owned freehold land (Figure 8).

The Reserve is within the Gingin Brook Catchment and the Gingin Groundwater Area. Groundwater extraction in the future could affect vegetation.

Beermullah Lake is permanent and thus important as a summer drought refuge for water-fowl. It is used all year by a wide variety of birds. Its fish include hardyhead, Swan River goby and the introduced mosquito fish. During summer, algal growth in the lake is a problem. It is believed to be caused by nutrients which enter the lake from a stream and also from surrounding agricultural land.

The lake's foreshore has been devegetated, with resulting erosion and build-up of dunes on the western side. The lake, which is used for water skiing, should be protected both as a recreation area and as a habitat for water-fowl.

Important management considerations for the area include: the area's potential for water supply; revegetating the lake's shores; preventing algal growth; zoning of water skiing in the lake; and fencing to prevent stock access.

Recommendations:

C7.1 That the purpose of Reserve C22223 be amended to Conservation of Flora and Fauna, and Recreation.

C7.2 That the Shire of Gingin prepare a management plan for the area in consultation with the Department of Fisheries and Wildlife.

C7.3 That ways and means of providing a protective buffer zone around Reserve C22223 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C8 RESERVE C1224, BARTLETTS WELL

The recommended area is situated about 25km north-west of Gingin and comprises Reserve C1224, for Camping, vested in the Shire of Gingin (Figure 8).

The Reserve is within the Gingin Brook Catchment and the Gingin Groundwater Area. Groundwater extraction in the future could affect vegetation.

For its size the Reserve has a very varied vegetation. The south-western section has a woodland of marri with a diverse understorey including honeybush, tree smokebush, stinkwood and scrub sheoak. On the western side the ground slopes uphill to the north and the soil of orange to red sand supports a low woodland of pricklybark and banksia with a few sheoak. Blackboy and zamia occur in the understorey. The higher ground of the northern section contains gravelly soils and supports a woodland of wandoo and jarrah.

The area may have considerable agricultural potential but it has yet to be evaluated, and information from submissions to the System 6 Study Report indicates that it may have some mineral potential. Reserve C539 and the southern portion of the vacant Crown land is within the Gingin Brook Catchment, a possible future source of water supply, and the Gingin Groundwater Area. MWA groundwater extraction may affect water levels and public access may be restricted to some extent by Catchment Zone regulations. The area may be affected by a pipehead dam which could be built on Gingin Brook near its confluence with the Moore River. There are existing SEC lines; the area may be affected by future SEC lines, a gas pipeline and requirements for road materials. The MRD is extracting gravel from Reserve C36629.

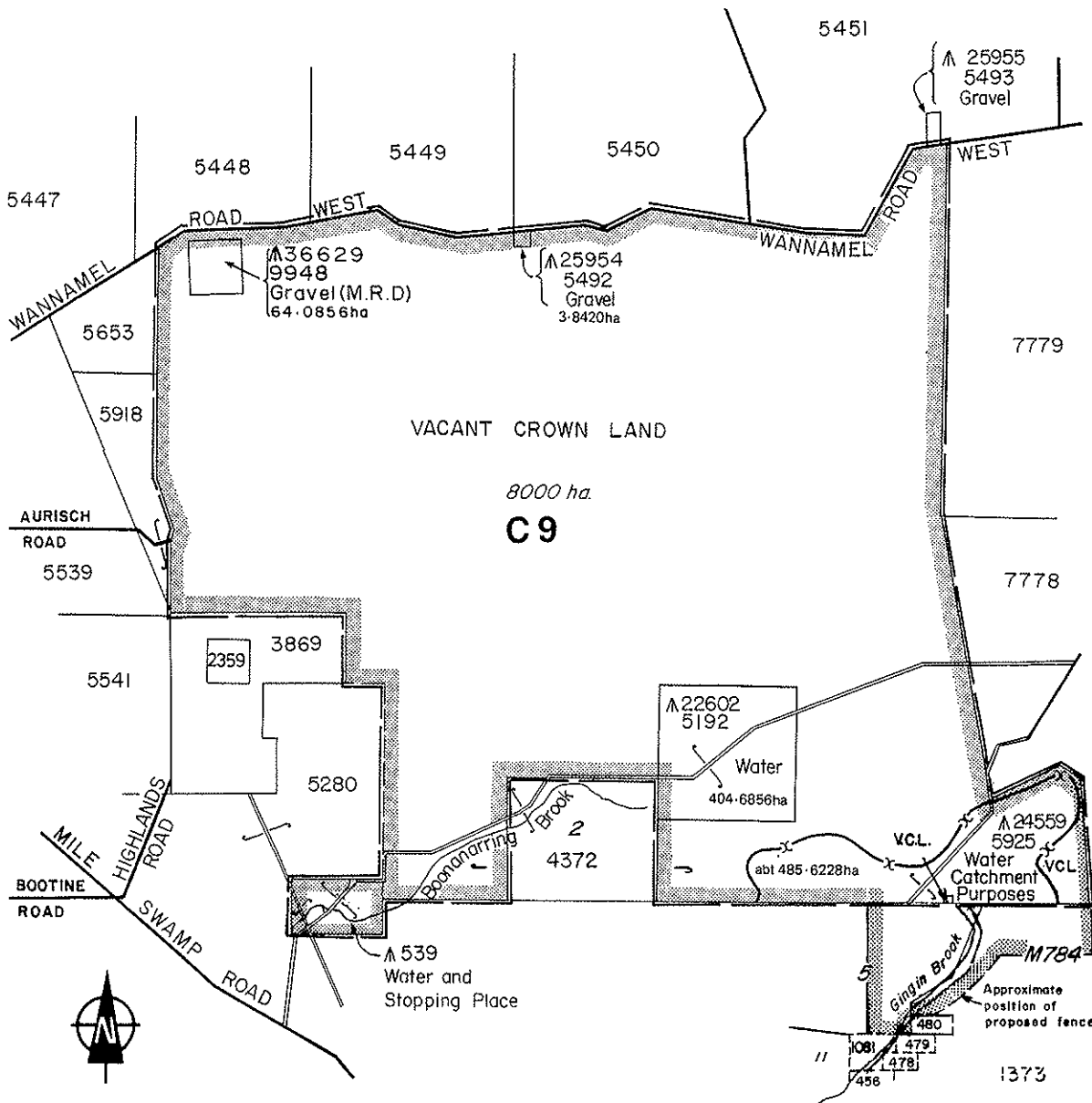
The vacant Crown land is undulating, with a few deeper valleys. Open-forest of jarrah and marri with an understorey of bull banksia occurs on the lateritic uplands. Small areas of wandoo also occur. On sandier soils there is low woodland and low open-woodland of slender banksia and Menzies' banksia with some jarrah, marri, pricklybark and Christmas tree. There are several small pockets of flooded gum where the water table is close to the surface. An uncommon species is *Lysinema elegans*, a heath otherwise known only in the Jandakot area.

Gingin Brook is a perennial fresh stream. Every day it gains several million litres of water from springs in peat banks, a unique occurrence in Western Australia and one which has a very marked effect upon the vegetation. The low woodland on the sandy slopes changes within a few metres to dense swamp thicket. The trees are typical swamp species such as flooded gum and paperbark but the tall shrub storey includes tea-tree, which is otherwise known only on the south coast, and boronia, which is also usually a southern species. The uncommon twining bladderwort occurs in the wetter areas together with a helmet orchid and a tropical fern, which are otherwise only found in the extreme south-west and the north of the State respectively. Aquatic species including water starwort, water button and water ribbon occur in the brook. The woodland on the surrounding hills is dominated by marri and banksia. A small legume which occurs here is unknown in any other locality. The Gingin Brook area as a whole has five rare species, and is unusual both botanically and geologically. Its preservation will provide protection for both Gingin Brook and its catchment. Reserve C539, which has high conservation value, has three distinct soil-landform types. In the north-eastern portion there is a sandplain which carries a closed-heath with a large number of species, including scrub sheoak, one-sided bottlebrush, couch honeypot, buttercup, sundew and blackboy. Christmas tree is the only tree, apart from some banksia woodland round the margins. The creek valley supports fairly dense patches of Moonah paperbark and marri, flooded gum and Menzies' banksia. Near the edge of the stream there is some bull banksia. On the orange sand in the southern portion there is a woodland of slender banksia and pricklybark, with an understorey of smokebush, scrub sheoak, blackboy and honeybush. In the north-west there is a large gravel pit which contains a woodland of marri, with an understorey of hakea, blackboy and black gin.

Important management considerations include: preventing stock from grazing on the banks of Gingin Brook; and rehabilitating the eastern bank of the Brook.

Recommendations:

- C9.1 That the purpose of Reserve C22602 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority.
- C9.2 That Reserves C24559 and C539 be cancelled and their respective areas added to Reserve C22602.
- C9.3 That the vacant Crown land be declared a Class C Reserve for the Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority.
- C9.4 That the Main Roads Department prepare a management plan for Reserve C36629 in consultation with the Department of Fisheries and Wildlife.
- C9.5 That the Gingin Shire Council prepare a management plan for Reserve C25954 in consultation with the W.A. Wildlife Authority.
- C9.6 That ways and means of protecting the conservation value of the above-mentioned area of freehold land be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.



LEGEND

 AREA BOUNDARY

LANDS DEPARTMENT PUBLIC PLAN No.
 Gingin NW & NE (1:25 000)
 Mindarra SE & SW
 DCE Ref. No B7, B8 & B9

SHIRE OF GINGIN



Figure 9

C10 LAKE WANNAMAL

The recommended area is situated about 90km north of Perth and comprises Reserve A9838, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority, and part of Location 2150, privately owned freehold land (Figure 10).

The Reserve is within the Brockman River Catchment. A storage dam is planned for a site downstream and consequently public access may be restricted to some extent by Catchment Zone regulations.

The northern portion of the Reserve supports low open-forest and low closed-forest of york gum, marri, swamp sheoak and swamp paperbark, with a dense understorey which includes jam, prickly moses, harsh hakea, couch honeypot, dryandra and stinkwood. In the southern portion the vegetation includes flooded gum and paperbark but is generally sparse.

The lake is semi-permanent and provides a summer refuge for water-birds. Forty-four species have been recorded, including grey teal, mountain duck, black swan and freckled duck, the last named being one of Australia's rarest water-fowl. The dense vegetation in the northern end of the lake and extending northwards along a string of swamps in private land, provides a refuge for water-fowl.

The lake, classified under the Wildlife Conservation Act as a shooting and hunting area, is popular with duck shooters.

Recommendation:

C10.1 That ways and means of protecting the conservation value of the above-mentioned area of freehold land be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C11 RESERVES C965 AND C27028, UDUMUNG BROOK

The recommended area is situated about 90km north of Perth, and comprises Reserves C965, for Recreation, vested in the Shire of Chittering, and C27028, for Gravel, vested in the Commissioner for Main Roads (Figure 10).

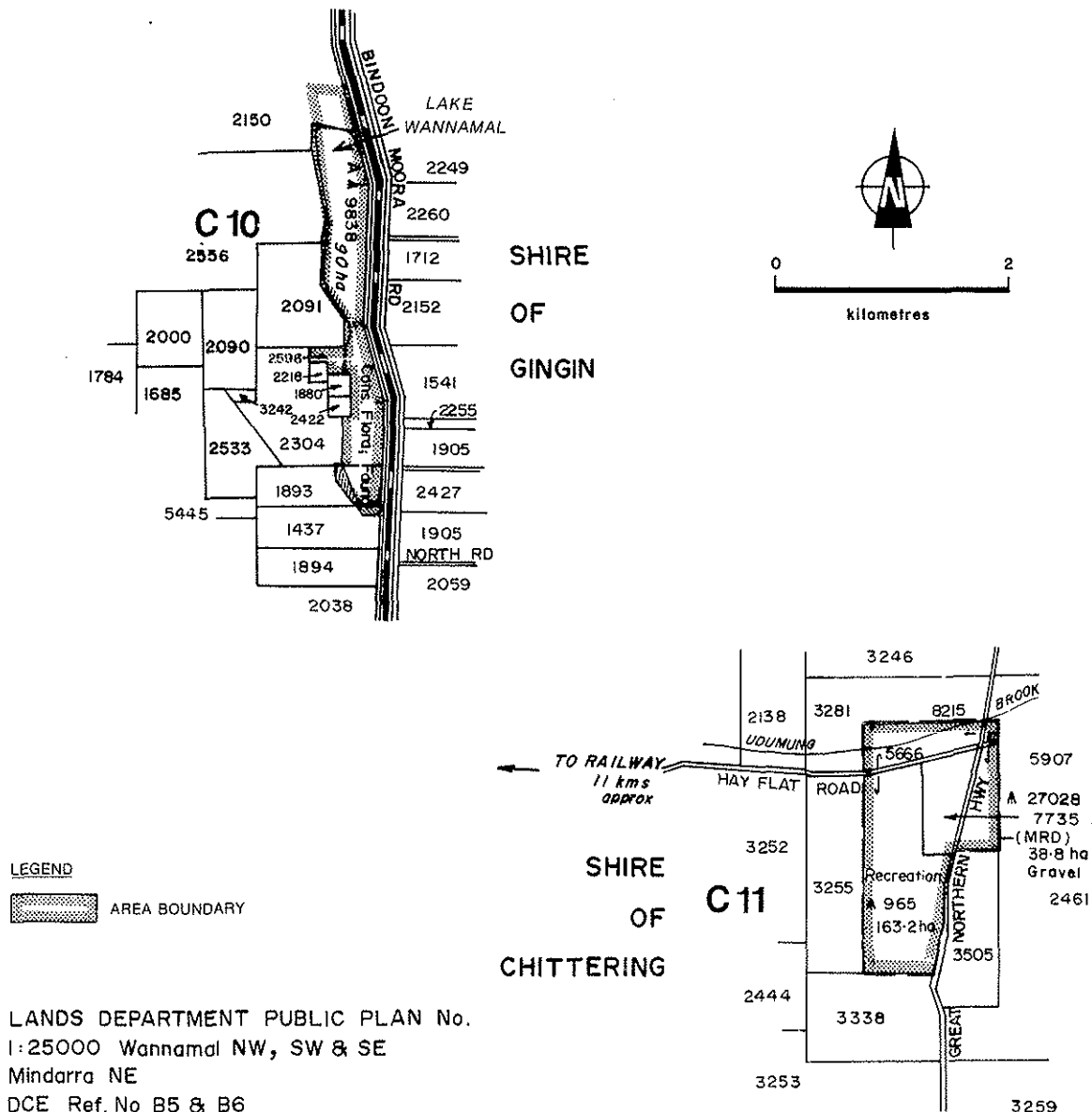


Figure 10

The Reserves are within the Brockman River Catchment, which the MWA may utilise after the year 2000. Public access may be restricted to some extent by Catchment Zone regulations and the area may be affected by future widening of the Great Northern Highway.

Udumung Brook passes through the northern portion of the area. The soil there is red loam, but this changes to gravelly loam and then laterite as the land rises gently to the south.

The vegetation is woodland, of wandoo in the northern portion and of marri and powderbark in the southern portion. A highlight of the understorey is the representation of *Dryandra* species, including two which are undescribed. There is a good stand of hooded smokebush, a relatively uncommon species. The black kangaroo paw, common in heaths north of the Moore River but rare on the Darling Plateau, also occurs here. The tiled trigger plant, otherwise known only from the south coast, is also to be found.

The Reserves are generally in good condition. Some gravel has been extracted from both, but there has been little weed infestation and with management the disturbed areas will probably regenerate. Because of the important species present, the Reserves have high conservation value.

Recommendations:

- C11.1 That the purpose of Reserve C965 be amended to Conservation of Flora and Fauna, and that the Reserve be vested in the W.A. Wildlife Authority.
- C11.2 That Reserve C27028 be cancelled and its area added to Reserve C965.

C12 CARABAN MANAGEMENT PRIORITY AREA

The recommended area is situated about 60km north of Perth and most of it comprises State Forest, being Caraban MPA. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. The recommended area also includes Swan Location 9757, Crown land under the control of the Department of Lands and Surveys. The Department of Lands and Surveys has advised that Swan Location 9757 was acquired for the Wilbinga Steel Mill: the land is dedicated under the Industrial Development (Resumption of Land) Act and is required for future industry. It is currently held by a "Caretaker" under an irregular tenancy agreement as an interim measure (Figure 11).

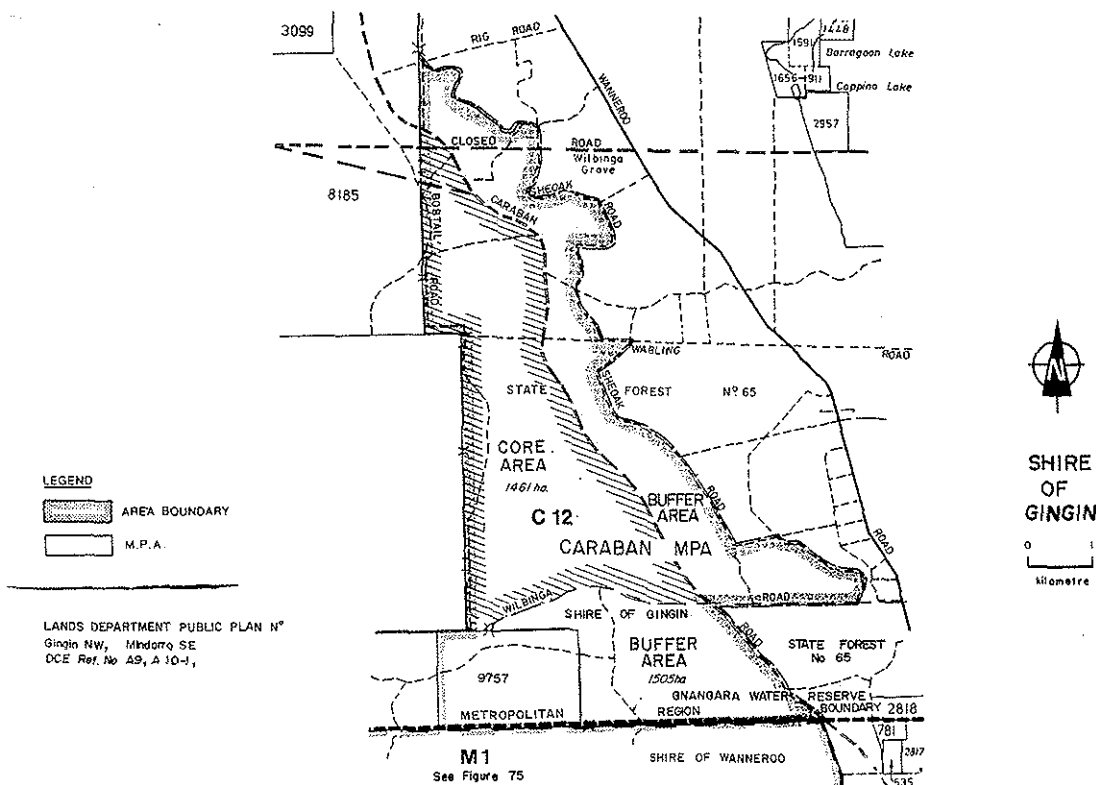


Figure 11

The MPA is within the Gnangara Water Reserve and the Gingin Brook Catchment and both are potential water supply sources. The MWA advises that vegetation already appears to have been affected by natural hydrologic changes and that future MWA extraction could cause additional changes. There are existing SEC lines, the area may be affected by future gas and SEC lines, as well as by rail and road construction if an industrial area is developed at Wilbinga. The area has potential for limestone and silica sand and is covered by some mineral claims.

Caraban MPA provides a virtually undisturbed example of the coastal vegetation types associated with the Spearwood Dune System. The area is covered primarily by an upperstorey of tuart and banksia with a rich understorey including chenille honeymyrtle, spider-net grevillea, tree smokebush, telegraph sedge and silky bloodflower.

Recommendations:

- C12.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Caraban MPA.
- C12.2 That the Forests Department prepare its management plan in consultation with the Metropolitan Water Authority.
- C12.3 That any management plan for Swan Location 9757 be developed in consultation with the Forests Department.

C13 WABLING MANAGEMENT PRIORITY AREA

The recommended area is situated about 60km north of Perth, and mostly comprises State Forest and vacant Crown land, being Wabling Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area is Reserve A24436, for Protection of Flora, vested in the National Parks Authority (Figure 12).

The area is subject to a number of pressures:

- (i) Recreational pressure is presently insignificant but could develop at Wabling Hill.
- (ii) The National Parks Authority harvests foliage of the flooded gum from Reserve A24436 as food for koalas at Yanchep National Park.
- (iii) The area is within Gnangara Water Reserve, a source of water supply and the Gingin Brook Catchment, a potential water supply source. Vegetation has already been affected by natural hydrological changes and groundwater extraction may have additional effects, particularly if the MWA's Barragoon scheme goes ahead.
- (iv) The area has potential for diatomaceous earth, heavy mineral sand and limestone, and is affected by existing mineral claims and substantial MRD limestone requirements for road construction purposes.
- (v) Access through the MPA for road, rail and other services may be sought if an industrial area is developed at Wilbinga.

Wabling MPA is valuable for its wide variety of soils and vegetation: covering an area progressing from limestone outcrops to leached sand dunes are varying combinations of Moonah paperbark, tuart, sheoak and banksia, with white myrtle, blackboy, silky bloodflower and *Beaufortia elegans* in the understorey.

Recommendations:

- C13.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2 be applied to Wabling MPA.
- C13.2 That the above-mentioned vacant Crown land be added to State Forest and managed as part of Wabling MPA.
- C13.3 That subject to the National Parks Authority being allowed to continue to obtain koala food, Reserve A24436 be cancelled and its area added to State Forest to be managed as part of Wabling MPA.

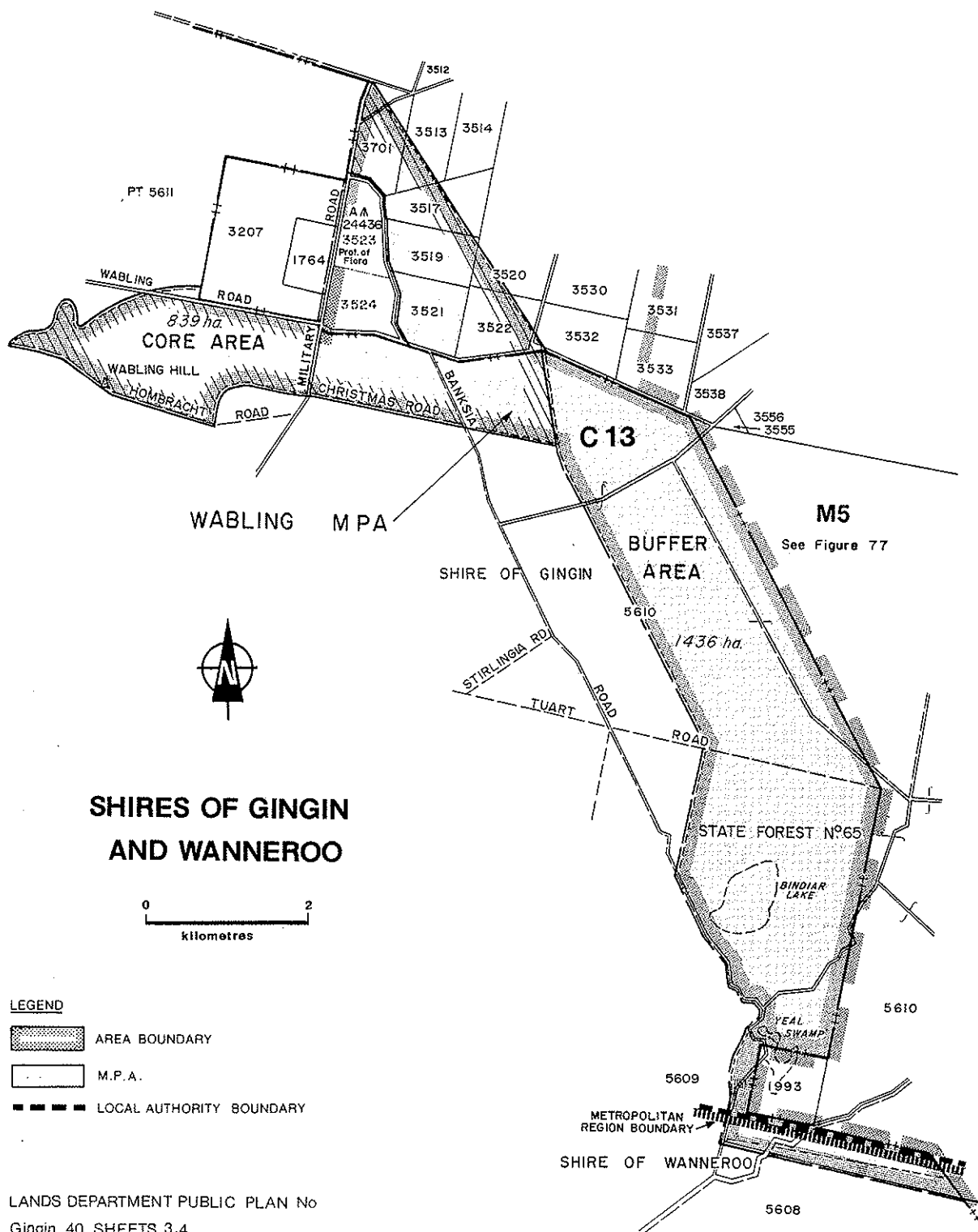


Figure 12

C14 RESERVES C20366 AND C25431, LAKE MUCKENBURRA

The recommended area is situated about 12km west of Gingin and comprises Reserves C20366, for Recreation, vested in the Shire of Gingin, and C25431, for Public Utility, not vested (Figure 13). The area is within the Gingin Brook Catchment as well as the MWA Public Water Supply and Underground Water Pollution Control Areas. Groundwater extraction in the future will probably have adverse effects upon the water table unless groundwater development is restricted to the western portion of the proposed areas. Public access may be restricted by Catchment Zone regulations.

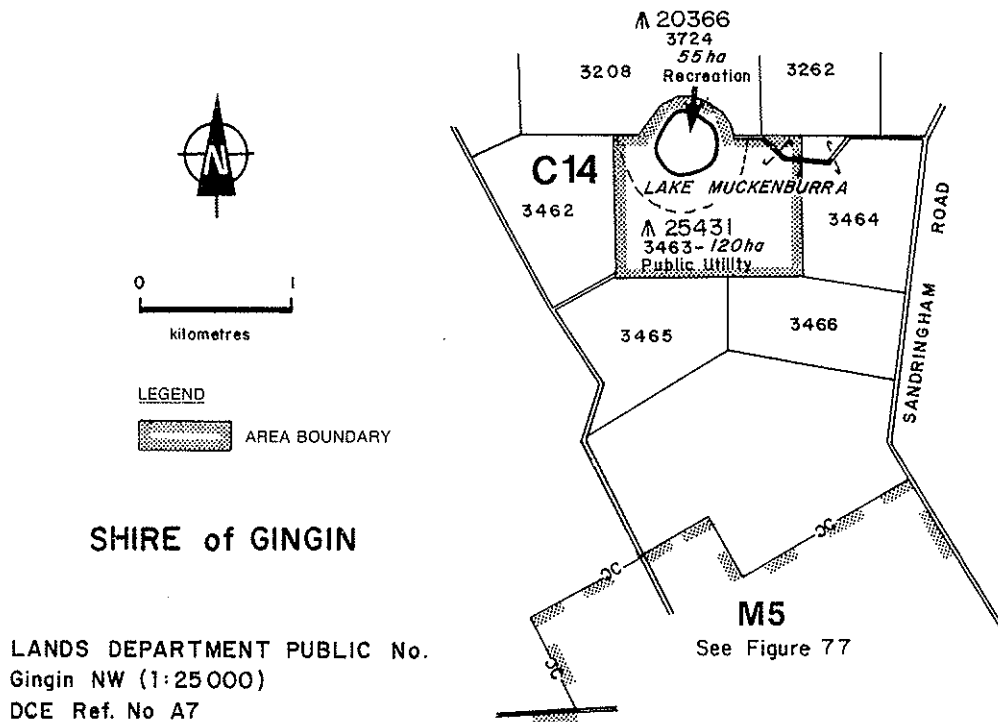


Figure 13

Wetlands are an important resource on the Coastal Plain, and Lake Muckenburra should be protected. Much of the area carries banksia and pricklybark. There are some groups of marri, and in places blackboy and zamia.

South of the lake there is a low, swampy area with tall shrublands of *Melaleuca viminea* and *Regelia ciliata*, and low open-woodlands of swamp banksia, paperbark and Christmas tree. The lake is bordered by white sand dunes which are covered by open-scrub, with a few flooded gum and swamp paperbark trees. The tops of the dunes carry zamia, and near the lake there is a dense stand of jointed twig rush.

A wide variety of birds has been recorded, including the yellow-tailed thornbill, the grey fantail and the singing honeyeater. A nest of the long-necked tortoise has also been found.

Important management considerations for the area are: confining active recreation to the waters of the lake, in order to minimise disturbance of the Reserve's vegetation; and providing suitable recreation facilities and imposing restrictions, so as to prevent damage to the lake's foreshore and pollution of the lake.

Recommendations:

- C14.1 That the purpose of Reserve C20366 be amended to Conservation of Flora and Fauna, and Recreation, and that the Reserve be vested in the W.A. Wildlife Authority.
- C14.2 That the purpose of Reserve C25431 be amended to Conservation of Flora and Fauna, Recreation and Water, and that the Reserve be vested in the W.A. Wildlife Authority.
- C14.3 That the Minister for Water Resources restrict groundwater extraction to the western portion of the proposed Public Water Supply and Underground Water Pollution Control Areas.

C15 RESERVES C24257 AND C26756, GINGIN

The recommended area is situated about 10km south of Gingin and comprises Reserves C24257, for Conservation of Fauna, not vested, and C26756, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 14).

The area is within the Ellen Brook Catchment, a potential source of water supply. Public access may be restricted in the future by Catchment Zone regulations.

Reserve C24257 contains Lakes Bambun, Nambung and Mungala. Lake Bambun is a large, deep, permanent lake which has a surrounding vegetation of flooded gum and paperbark. Fish which inhabit Lake Bambun include the Swan River goby, nightfish, western minnow and the introduced mosquito fish. Hundreds of ducks and a number of waders have been recorded in the lake area. Lakes Nambung and Mungala are shallower, semi-permanent wetlands which are particularly rich in aquatic life and serve as a food source for many water-birds.

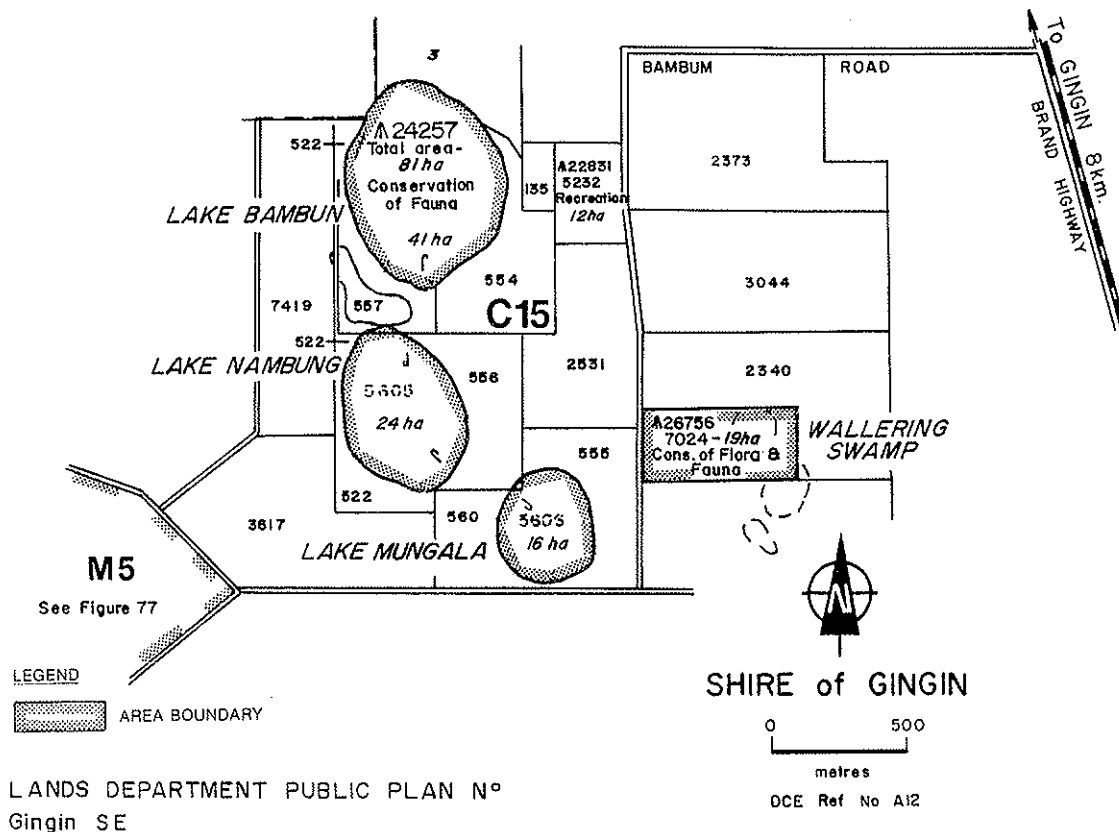


Figure 14

There is insufficient reserved land to form a buffer zone around the three lakes to protect them from eutrophication. Stock are damaging the vegetation at the lakes' edges, and preventing regeneration.

Reserve C26756 contains Wallering Swamp, which was an important nesting site for the straw-necked ibis until a fire destroyed its vegetation in 1963. Subsequent grazing prevented regrowth.

Recommendations:

- C15.1 That Reserve C24257 be cancelled and its area added to Reserve C26756.
- C15.2 That Reserve C26756 be classified as Class A.
- C15.3 That ways and means of providing protective buffer areas around Reserves C26756 and C24257 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C16 GEOLOGICAL SITES, GINGIN

The recommended area is situated near Gingin and comprises parts of Locations 103, 128, 149, 398 and 3108, privately owned freehold land (Figure 15).

The hills that surround Gingin contain exposures of early Cretaceous chalk and greensand, which virtually replicate the classic successions of Western Europe. They are of great scientific and educational interest. All the important, well-exposed geological sections are on private land.

The area is within the Gingin Brook, Lennard Brook and Ellen Brook Catchments, potential sources of water supply. Public access may be restricted to some extent by Catchment Zone regulations. There are SEC lines in the area.

Recommendation:

- C16.1 That the Geological Sites Committee, in consultation with the Gingin Shire Council, local landowners and interested scientific and teaching institutions, prepare a management plan for the protection of the geological sites.

C17 LAKE CHANDALA, MUCHEA

The recommended area is situated about 7km north of Muchea, and comprises Reserve C37060, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority, parts of lots 3, 4, 5, 6, M1306 and M1378 of Location 1371 and part of Location 2115, privately owned freehold land (Figure 16).

The area is within the Ellen Brook Catchment, a potential source of water supply. Future MWA groundwater extraction may affect water levels and public access may be restricted by Catchment Zone regulations.

Lake Chandala, also known as Lake Mandowin or Reedhead Swamp, is a seasonal, circular-shaped wetland. The vegetation consists of low closed-forest of swamp paperbark and flooded gum, surrounded by closed-scrub of melaleuca and small areas of samphire.

Lake Chandala supports a nesting colony of straw-necked ibis, the largest of only three known nesting colonies in Western Australia and believed to contain more than 90 per cent of the State's breeding population.

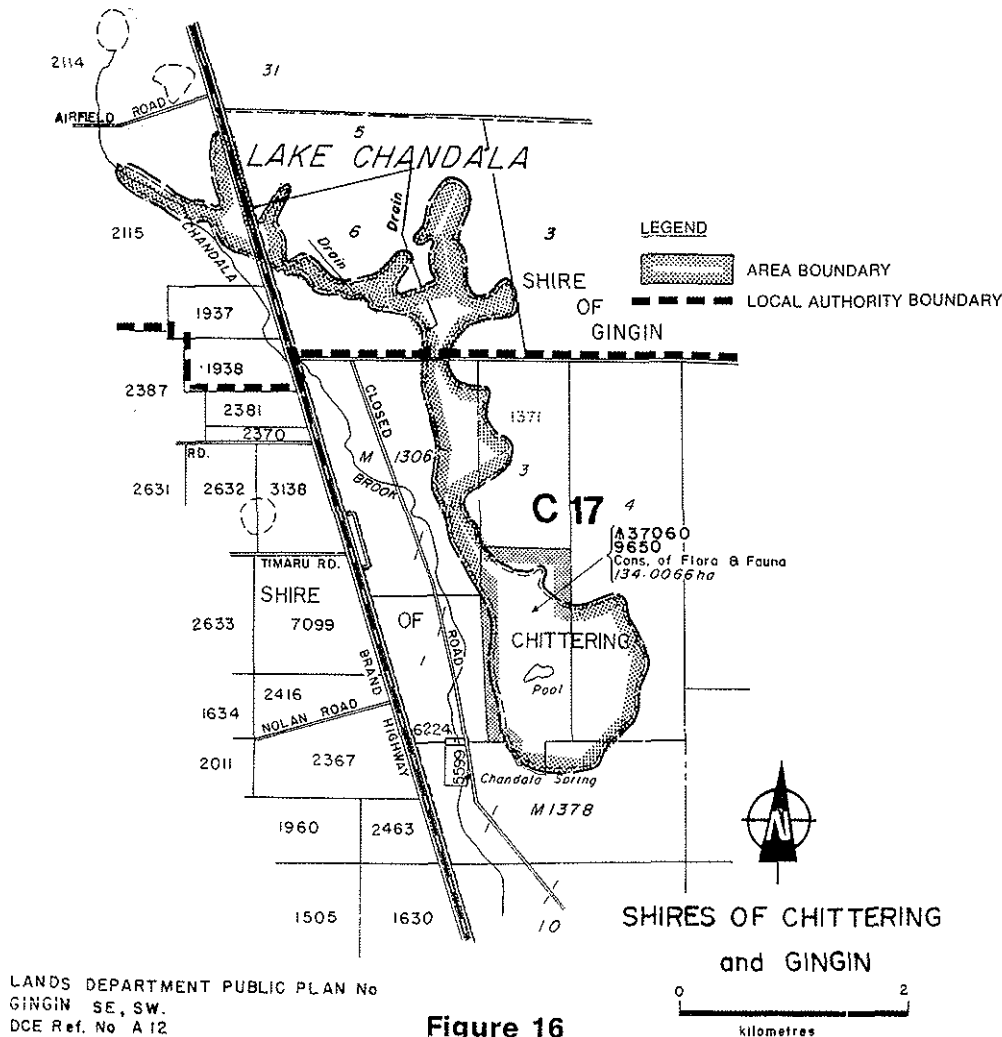
Water from Chandala Brook and various drains flows through Lake Chandala in winter and spring, providing a diversity of habitats for fish. Fishes that inhabit Lake Chandala include the Swan River goby, nightfish, western minnow, pygmy perch and the introduced mosquito fish. An unconfirmed sighting of the introduced goldfish *Carassius auratus*, an ecologically damaging species, gives cause for concern.

Protection of the high conservation value of Reserve C37060 will require giving the Reserve A Class status and also placing some management controls on the portion of Lake Chandala within privately owned land.

Recommendations:

C17.1 That Reserve C37060 be classified as Class A.

C17.2 That ways and means of protecting the conservation value of the privately owned freehold land within the area be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.



C18 BURROLOO WELL

The recommended area is situated about 2km south of the Great Northern Highway — Chittering Road junction, and comprises Reserve C42, for Resting Place for Stock, not vested (Figure 17).

The area is within the Brockman River Catchment, a potential source of water supply. It may be affected by a proposed pipehead dam on the Brockman River near its confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. The Reserve may be affected by reconstruction of the Great Northern Highway.

The Reserve mainly contains brown sandy loam covered by open-woodland of marri, with a few wandoo and jarrah, and a varied understorey which includes couch honeypot and blue leschenaultia. Gravelly clay soils near the creek carry a shrub layer which includes white myrtle and fuschia grevillea. There are thickets of stinkwood and wattle in the centre of the Reserve and a dense stand of swishbush at the southern end. There are a number of perennial and ephemeral herbs, including pincushion, flannel flower and woodbridge poison, and a wide variety of other species including scrub sheoak, common verreauxia and bright podolepsis. The vegetation is in good condition, with little invasion of weeds. The surrounding land has been mainly cleared for agriculture, and the Reserve should therefore be maintained to provide an example of the flora of the district. The Reserve also contains a freshwater well which is a popular stopping place.

Important management considerations include maintaining public access to the well.

Recommendation:

C18.1 That the purpose of Reserve C42 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

C19 NEEDONGA AND CHITTERING LAKES

The recommended area is situated about 15km east-south-east of Gingin and comprises Reserve C29538, for Conservation of Fauna, vested in the W.A. Wildlife Authority (Figure 17).

The area is within the Brockman River Catchment, a potential source of water supply. It may be affected by a proposed pipehead dam on the Brockman River near its confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. The Reserve may be affected by reconstruction of the Great Northern Highway. Wetland vegetation has been affected by grazing.

Needonga and Chittering Lakes are on the water course of the Brockman River. They are bordered by low closed-forest of swamp paperbark. Before 1975, the numbers of water-birds using the area had been steadily diminishing due to the lakes becoming shallower, through siltation and drainage, and drying up mid-summer. In September 1975 the Department of Fisheries and Wildlife constructed a sand-bag weir at the outlet to Lake Chittering and the weir retained a large area of water throughout the following summer. A permanent structure was subsequently erected to retain water in the lakes during summer. The lakes now support colonies of egret, white egret, black duck, grey teal, wood duck, mountain duck, musk duck, brown bittern, straw-necked ibis, stilt and swan. Nineteen species of water-bird have been recorded on the lakes.

The area contributes to open space of regional significance extending along the Brockman River because of its conservation value (see Figure 1, Chapter 4).

Recommendations:

C19.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C19.2 That Reserve C29538 be classified as Class A.

C20 RESERVE C32807, MT. BYROOMANNING

The recommended area is situated on the eastern side of the Brockman Valley near Bindoon and comprises Reserve C32807, for Conservation of Flora, not vested (Figure 17).

The Reserve is within the Brockman River Catchment, a potential source of water supply. It may be affected by a proposed pipehead dam on the Brockman River near its confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. The Reserve may be affected by reconstruction of the Great Northern Highway.

The Reserve is on a rocky lateritic ridge, the vegetation being open-woodland with a mixture of wandoo and york gum. The understorey includes jam and manna wattle. This association of species is not otherwise adequately represented in conservation reserves.

The area contributes to open space of regional significance extending along the Brockman River because of its conservation value (see Figure 1, Chapter 4).

Recommendations:

- C20.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C20.2 That the purpose of Reserve C32807 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

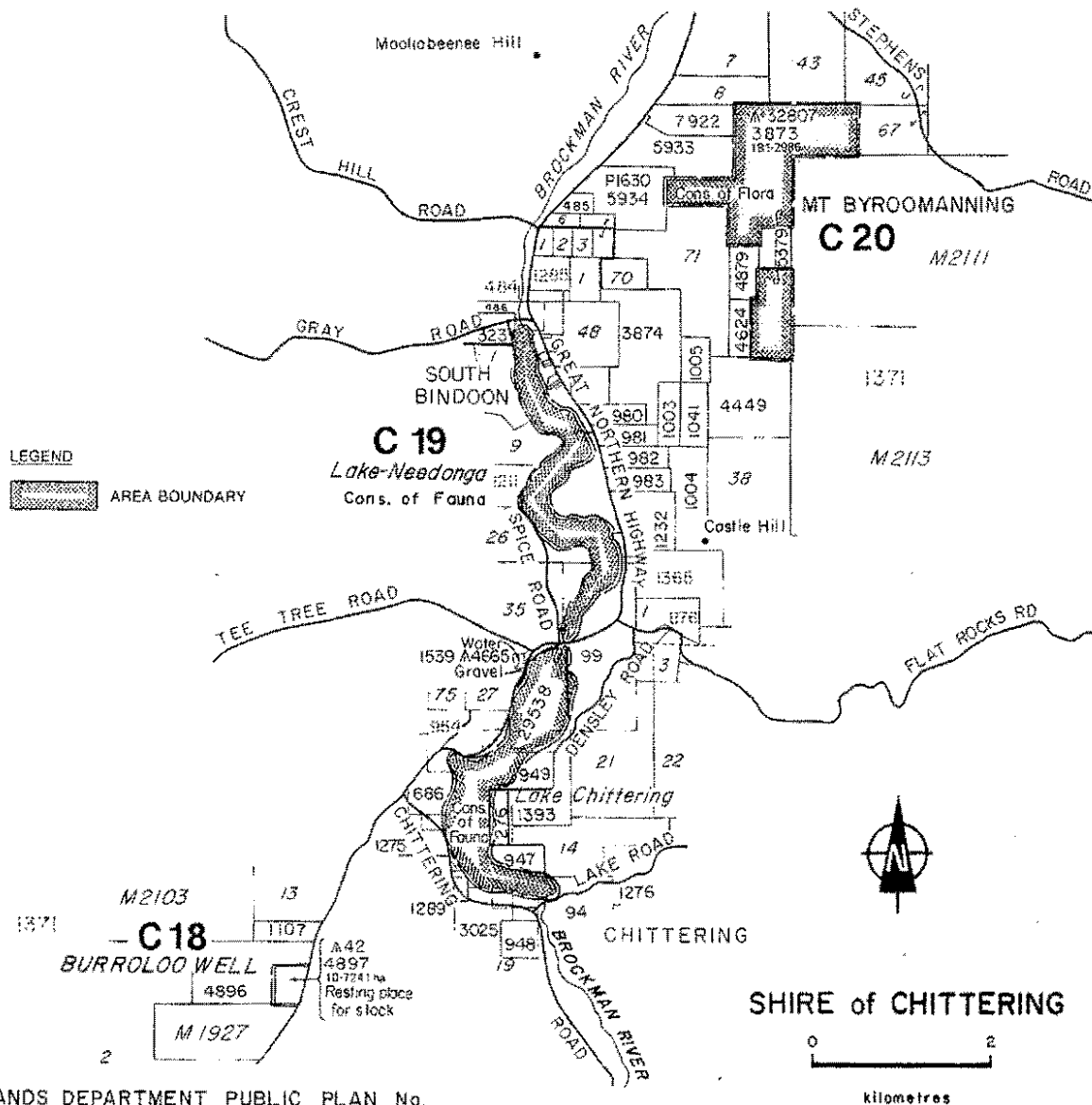


Figure 17

C21 JULIMAR MANAGEMENT PRIORITY AREA

The recommended area is situated about 25km north-west of Toodyay and largely comprises State Forest, being Julimar Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the area are Reserves A27595, for Conservation of Flora and Fauna, C13971, for Water, C20210, for Water, C22097, for Government Requirements, and C29100, for Buffer Strip, all not vested; Avon Location 28184, owned by the Commonwealth of Australia; and Locations 7790, 14703, 22299, 24025, 24651, 24652 and 26883, privately owned freehold land (Figure 18).

Current activities within the recommended area include beekeeping, the harvesting of *Dryandra polycephala* for dried floral arrangements, and extraction of gravel by the MRD from the MPA with the permission of the Forests Department. The area attracts various recreation activities including bushwalking, scenic driving and trail biking.

The locality is within the Brockman River and Julimar Brook Catchments which may be used for water supply after 2000. A storage dam may be built on the Brockman River and another on Julimar Brook — however Catchment Zone regulations would be unlikely to be very restrictive because the Catchments are already extensively populated and farmed. The area is within the Pacminex and Alcoa Mining Leases but has low long-term priority for bauxite mining. The northern part of the Army Training Area could be affected to some extent by the future planned route of the Great Northern Highway and a widening of the Wongan Hills — Calingari Road. There is a new truck bay in the north-west corner of Reserve C29108.

Julimar MPA supports open-forest of jarrah and marri, and wandoo woodland, as well as extensive stands of *Dryandra polycephala*, *Dryandra drummondii*, *Conospermum polycephalum*, and species of *Synaphea*, none of which is well represented in more southern State Forests.

The MPA also contains a valuable variety of fauna, among the mammals being the tammar, the brush wallaby and three species of possum, while among the fifty recorded bird species are some which are becoming rarer in the South-West including the black-capped sitella, the rufous tree creeper and the splendid wren.

The southern portion of the recommended area has high conservation value and together with Bindoon Springs (C22), Reserve C22096 (C23) and Reserve C19904 (C24), which comprises State Forest, Land Act reserves and private freehold land, constitutes open space of regional significance (see Figure 1, Chapter 4). This area has a varied land tenure and not all of it has conservation and recreation as primary management objectives; to enhance these values the management structure requires coordination. An important management consideration is the control of trail bike and off-road vehicle use of the area.

Recommendations:

- C21.1 That our general recommendations on planning and management of Regional Parks be applied to this area, not including Location 28184 (see Recommendations 15 and 16, Chapter 5).
- C21.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Julimar MPA.
- C21.3 That Reserve A27595 be vested in the W.A. Wildlife Authority.
- C21.4 That Reserves C13971, C20210 and C22097 be vested in the Conservator of Forests and managed as if part of Julimar MPA.
- C21.5 That Reserve C29100 be vested in the Conservator of Forests.
- C21.6 That the Commonwealth of Australia retain as much natural vegetation as possible in Avon Location 28184.
- C21.7 That in the event of Avon Location 28184 becoming available, the land be purchased from the Commonwealth of Australia.

C22 RESERVE C3156, BINDOON SPRING

The recommended area is situated about 20km north-west of Toodyay and comprises Reserve C3156, for Parklands, vested in the Shire of Toodyay (Figure 18).

The area is within the Julimar Brook Catchment, a potential source of water supply.

The Reserve is unusual in that it has sandy soil, in contrast to the predominant heavy soils of the district. The vegetation is mostly low woodland of slender banksia, bull banksia and Christmas tree. Species present include *Conostylis candicans*, *Lechenaultia floribunda*, spearwood and wattle.

A sand pit has been opened in the south-west of the Reserve; although still used it has been partly revegetated. Apart from weed infestation along the boundary, the Reserve is in good condition. It is an unusual inland area of vegetation containing species typical of the Coastal Plain.

The Toodyay Shire Council and the W.A. Heritage Committee have identified the area as having significant historical value.

The recommended area contributes to the larger area of open space of regional significance based upon Julimar MPA (see Figure 1, Chapter 4) and has high conservation, recreation and historic value. Important management considerations include: limiting visitor access; preventing further sand extraction; and recognising the historical significance of the area.

Recommendations:

- C22.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

- C22.2 That the purpose of Reserve C3156 be amended to Conservation of Flora and Fauna, and Parkland, and that the Reserve be vested in the Shire of Toodyay.
- C22.3 That the Shire of Toodyay prepare a management plan for the area in consultation with the Department of Fisheries and Wildlife.

C23 RESERVE C22096, CULHAM

The recommended area is situated about 20km north-west of Toodyay and comprises Reserve C22096, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 18).

The area is undulating and dissected by steep-sided gullies. The soil is gravel and yellow-brown sand with large lateritic boulders in the gullies. The vegetation is predominantly open-woodland of wandoo and marri with a dense understorey. Some Christmas tree, snottygobble and bull banksia are present and common species in the understorey include *Acacia celastrifolia*, *Adenanthos drummondii*, *Calothamnus sanguineus* and *Petrophile serruriae*. The Reserve is undisturbed.

The area contributes to the larger area of open space of regional significance (see Figure 1, Chapter 4), based upon Julimar MPA.

Recommendations:

- C23.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C23.2 That the current purpose and vesting of Reserve C22096 is endorsed.

C24 RESERVE 19904, WEST TOODYAY

The recommended area is situated about 10km north-west of Toodyay and comprises Reserve C19904, for Parklands, vested in the Shire of Toodyay (Figure 18).

The Reserve is undulating. The upper slopes support woodland of marri and bull banksia and lower down the trees are powderbark and wandoo. Blackboy is common and there are thickets of parrot bush, as well as occurrences of york gum with jam and manna wattle. This type of vegetation has been mostly cleared elsewhere in the region. Although somewhat disturbed by the felling of timber and the opening of gravel pits, the Reserve still contains a substantial amount of vegetation.

The area contributes to the larger area of open space of regional significance (see Figure 1, Chapter 4), based upon Julimar MPA.

Recommendations:

- C24.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C24.2 That the purpose of Reserve C19904 be amended to Conservation of Flora and Fauna, and Parklands, and that the Reserve be vested in the Shire of Toodyay.
- C24.3 That the Shire of Toodyay prepare a management plan for the Reserve in consultation with the Department of Fisheries and Wildlife.

C25 MOUND SPRINGS, MUCHEA

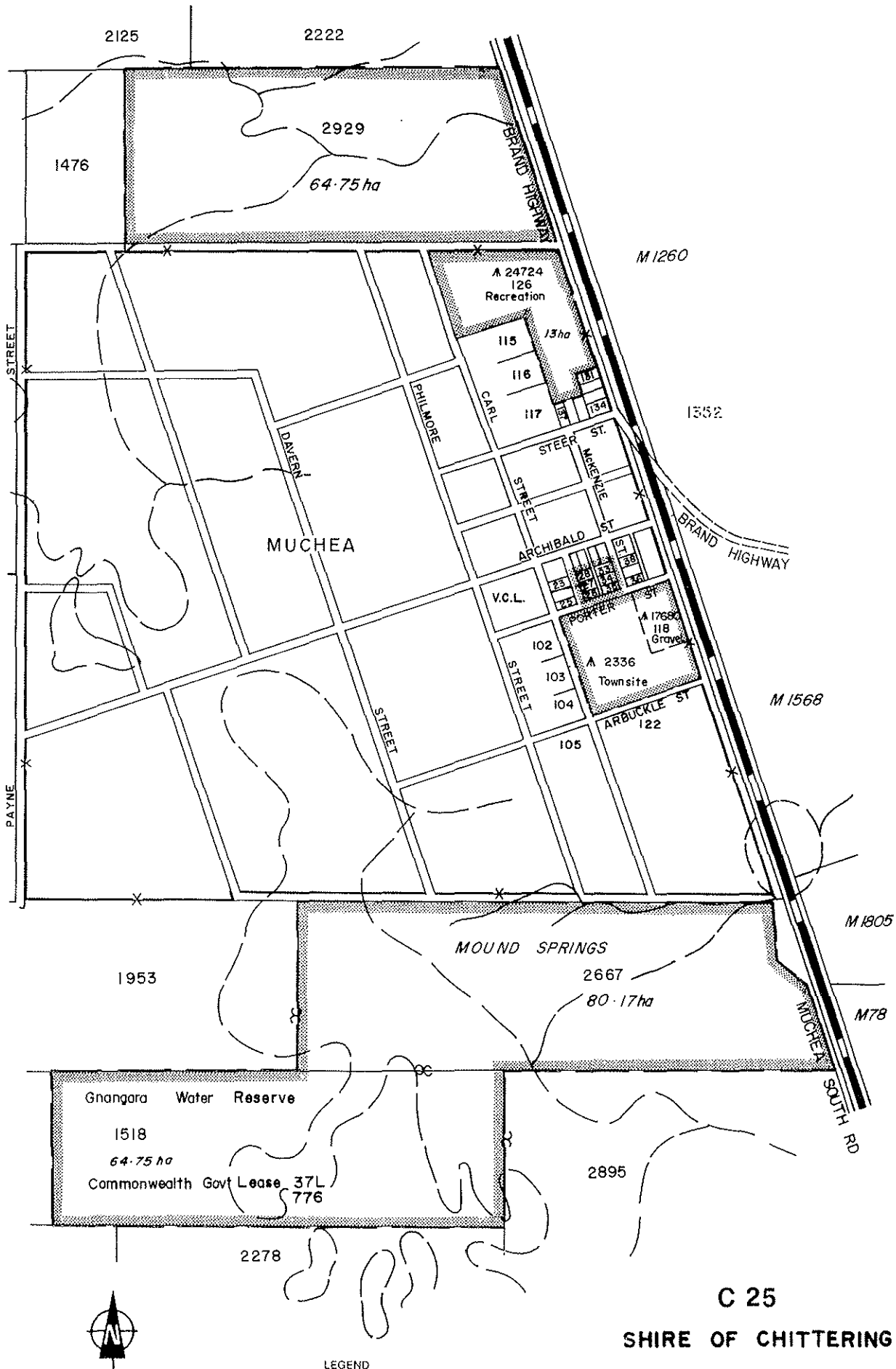
The recommended area is situated just west of Muchea and comprises Reserves C24724, for Recreation, vested in the Shire of Chittering; C17680, for Gravel, and Reserve C2336, for Townsite, both not vested; vacant Crown land; Swan Locations 1518 (part of Commonwealth Government Lease 37L/776) and 2667 and 2929, privately owned freehold land (Figure 19).

The area is within the Gngangara Water Reserve and the Ellen Brook Catchment. Future MWA groundwater extraction may affect water levels and public access may be restricted to some extent by Catchment Zone regulations. There are SEC lines in the area. The MRD states that Brand Highway may require widening by up to 70m. The Dampier to Perth natural gas pipeline will pass through the area.

Mound Springs provides a habitat for certain species of plants which are rare in System 6, including sundew, bog clubmoss and an unusual liverwort. Location 2929 contains a plant population of a newly discovered species of *Darwinia*.

Recommendations:

- C25.1 That the W.A. Herbarium survey the area, hold discussions with local land owners, and prepare a report on the conservation of the flora for the Environmental Protection Authority and the W.A. Wildlife Authority.



LANDS DEPARTMENT PUBLIC PLAN N°
 SWAN 1:1000 BG 35/4.5, 35/4.6.
 DCE Ref No A14

Figure 19

C25.2 That ways and means of protecting the conservation value of the freehold land be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C26 RESERVE C4070, NORTH OF BULLSBROOK

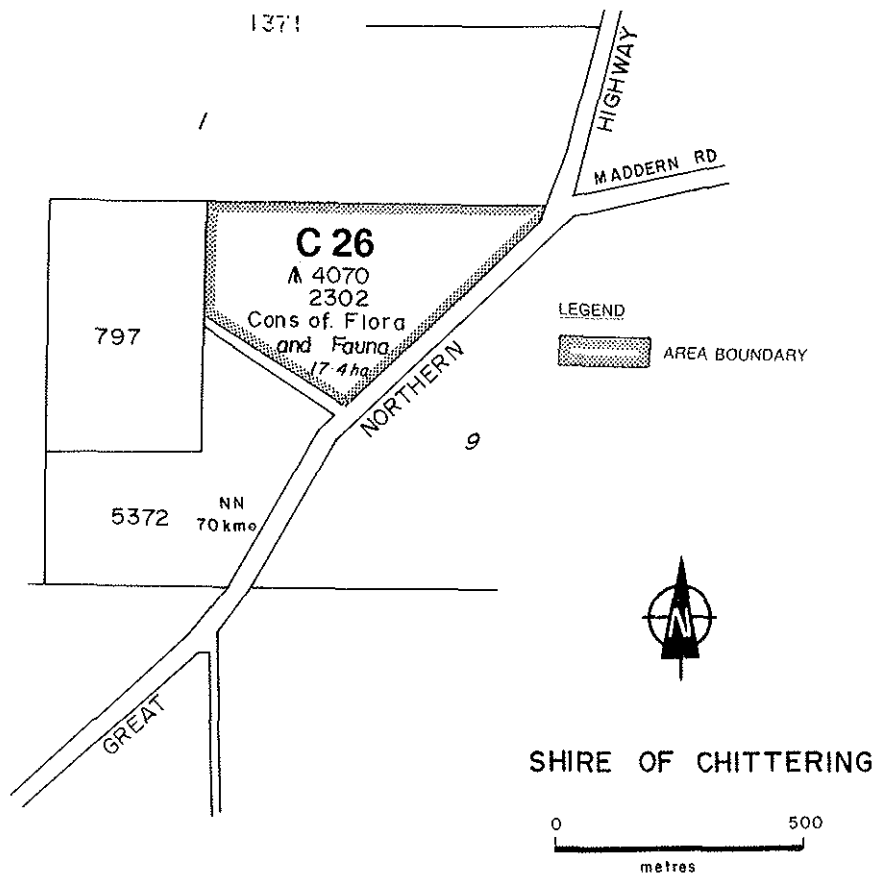
The recommended area is situated on the Great Northern Highway about 20km north of Bullsbrook and comprises Reserve C4070, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 20).

The Reserve is within the Ellen Brook Catchment, a potential source of water supply. It may be affected by a proposed pipehead dam on Ellen Brook near its confluence with the Swan River. Public access would be restricted to some extent by Catchment Zone regulations. The Reserve may be affected by reconstruction of the Great Northern Highway.

Open-woodland of marri, Christmas tree, bull banksia and some wandoo occurs on an open sandy loam and clay flat. The flat is low-lying and becomes wet in winter. The shrub layer includes many species and a wide variety of herbs. The western portion of the Reserve is slightly higher and has a sandy rise with low woodland of slender banksia, Menzies' banksia and pricklybark. Typical shrubs are woollybush, scrub sheoak and pixie mops. There is no other Reserve in the district with the same association of species and richness of flora.

Recommendation:

C26.1 That the present purpose and vesting of Reserve C4070 is endorsed.



LANDS DEPARTMENT PUBLIC PLAN No.
28 / 80
DCE Ref. No B14

Figure 20

C27 BEELARING AND GOONARING SPRINGS

The recommended area is situated about 50km north-east of Perth and comprises Reserves C529 and C659, for Conservation of Flora and Fauna, both vested in the W.A. Wildlife Authority; and part of lot M2050, and Location 28292, privately owned freehold land (Figure 21).

The area is within the Red Swamp Brook Catchment, a potential source of water supply, which may be affected by a proposed dam on the Brook near its confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. The area may be affected by widening of the Midland-Goomalling Road. The MWA states that the area may be the site for a future dam.

The vegetation of both Reserves is diverse, and also unusual in this region. The soil of Reserve C529 is red loam with some gravel. Woodland of jarrah and marri occurs in the Reserve, together with a dense understorey that contains good stands of *Dryandra carduacea* (a fire-sensitive species which should be conserved in several reserves to ensure its survival), blackboy, *Adenanthos drummondii*, and possibly species of lambstail which are rare in System 6.

There are two distinct soil associations on Reserve C659, which is sloping, the lower slopes having a yellow-red loam with some gravel and the higher slopes being more gravelly. Consequently, the Reserve has two distinct plant associations. Open-forest of jarrah, marri and Moonah paperbark, with an understorey of tall shrubs including wattle and swishbush, occurs on the lower slopes. Open-woodland of jarrah and marri with an open understorey occurs on the higher slopes. The Reserve is relatively undisturbed.

Up to eighty bird species have been recorded in the area, and the streams contain a crustacean of the Koonac group. The area as a whole has significant conservation value, largely because Beelaring and Goonaring Springs provide fresh water for most of the year. The catchments for Beelaring and Goonaring Springs, which include part of lot M2050, privately owned land, must be protected.

The Shire Council has dezoned the private freehold land west of Morangup Road from "Special Rural" to "Rural" and therefore the creation of open space land under Section 20A of the Town Planning and Development Act would be unlikely. However, the recommended area boundary still includes land of high conservation value and should be retained.

Recommendations:

- C27.1 That Reserves C529 and C659 be amended to Class A.
- C27.2 That ways and means of protecting the area's conservation value be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

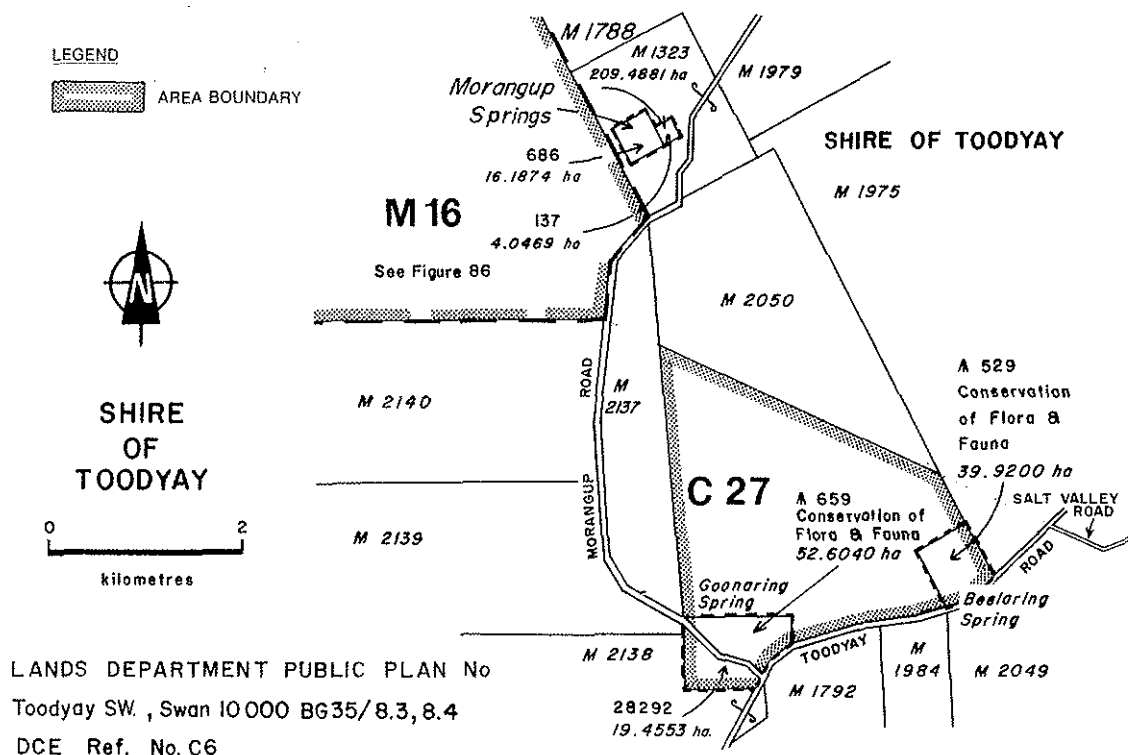


Figure 21

C28 RESERVES NEAR WUNDOWIE

The recommended area is situated around Wundowie Townsite about 60km north-east of Perth, and comprises Reserve C4623, for Forest (Wandoo), not vested; Reserves C14275 and C14276, for Timber (State Forest), both not vested; Reserve C11619, for Recreation, vested in the Shire of Northam; Reserve C25796, for Rubbish Depot, vested in the Shire of Northam, and vacant Crown land (Figure 22).

The Northam Shire Council has proposed that Reserve 14275 should be extended by the inclusion of Railway Reserve 23746, and Avon Locations 3586, 3754, 117, 4960.

Most of the area is within the Wooroloo Brook Catchment, a potential source of water supply. A storage dam may be built on the Wooroloo Brook near its confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. There are SEC lines in the area. It is likely to be affected by widening or realignment of Great Eastern Highway and possibly also by realignment of Inkpen Road.

Two areas within Reserve C14275 have been used for a refuse disposal site and a trotting training track, and the Northam Shire Council has proposed the excision of portions of the Reserve for these purposes. Also, the Northam Shire Council has proposed to extend Reserve C25796 to include the existing rubbish disposal site. However, the Department of Conservation and Environment has recommended that an area of land encompassing the existing rubbish tip site be set aside for that purpose and managed under an approved management plan and furthermore that Reserve C25796 be cancelled and its area added to Reserve C14276. The area has potential for iron ore, bauxite, clay, silica sand, quartz, titaniferrous magnetite, vanadium, gravel and Toodyay stone and is subject to various mineral claims. The MRD states that it is likely to require gravel from parts of the locality, within Northam Division Areas 1, 3, 4 and 5. The eastern section of Reserve C14275 (east of Location 10275) is affected by the Coates Vanadium Project. The area is partly within both the Alcoa Mining Lease and the Pacminex Agreement Area. However, the potential for bauxite is low and Pacminex has no plans for mining. The southern section of Reserve C14276 could be affected by a small industrial site, which may be built near the intersection of Inkpen and Douglas Roads.

Reserve C4623 is undulating and has a woodland of jarrah and wandoo on gravel and gravelly loam. Blackboy and zamia are common. The rare fringed lily, *Thysanotus anceps*, known only from a few other localities north-east of Perth, occurs in the Reserve. The eastern section is in good condition but the western section is disturbed, containing a gravel pit and many vehicle tracks.

Reserve C11619 (Coates Reserve) is on the upper slopes of a rise which slopes to the north-west. The gravelly loam supports woodland of jarrah and wandoo with the latter predominating in the eastern section of the Reserve. The understorey is quite diverse, and the vegetation is undisturbed.

Reserve C14275 is in two sections separated by freehold land. The western section, next to Wundowie townsite, is relatively flat and supports woodland of jarrah and bull banksia with an admixture of wandoo in some places. *Thysanotus anceps* also occurs here. There has been tree-felling in parts of this section, as well as extraction of gravel and sand. The eastern section of the Reserve is undisturbed and rises gently towards the south. It has woodland of jarrah, bull banksia and wandoo, with some marri, as well as dense stands of acacia and dryandra.

Reserve C14276 is gently undulating and contains gravelly and sandy soils and granite outcrops. The vegetation is woodland of jarrah, marri, wandoo and bull banksia with a low heath understorey. It contains powderbark and stands of rock sheoak, and blackboy and zamia are common. The section to the west of Inkpen Road has been burnt regularly and has consequently degenerated.

Important management considerations for the section of Reserve C14275 affected by the Coates Vanadium Project include ensuring the adequacy of buffer zones and disposal techniques, and rehabilitating mined areas.

Recommendations:

- C28.1 That the purpose of Reserve C14275 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority for a limited term of 10 years (see Recommendations 7-12 inclus., Chapter 3), and managed under a published management plan.
- C28.2 That the vacant Crown land be declared a Class C Reserve for the purpose of Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority for a limited term of 10 years (see Recommendations 7-12 inclus., Chapter 3), and managed under a published management plan.
- C28.3 That access to Reserve C14275 and the area presently vacant Crown land, for the purposes of exploration and evaluation of mineral potential, be permitted where necessary

under conditions specified in the vesting order which should be such as to protect the area's conservation value.

- C28.4 That Reserve C25796 be cancelled and its area added to C14276 and that a new Reserve be created to encompass the existing rubbish disposal site, the Reserve to be vested in the Shire of Northam and managed under a management plan.
- C28.5 That Reserves C4623 and C14276 be cancelled and their respective areas added to Reserve C14275.
- C28.6 That the Northam Shire Council prepare a management plan, in consultation with the Department of Conservation and Environment, for Reserve C11619 (Coates Reserve).

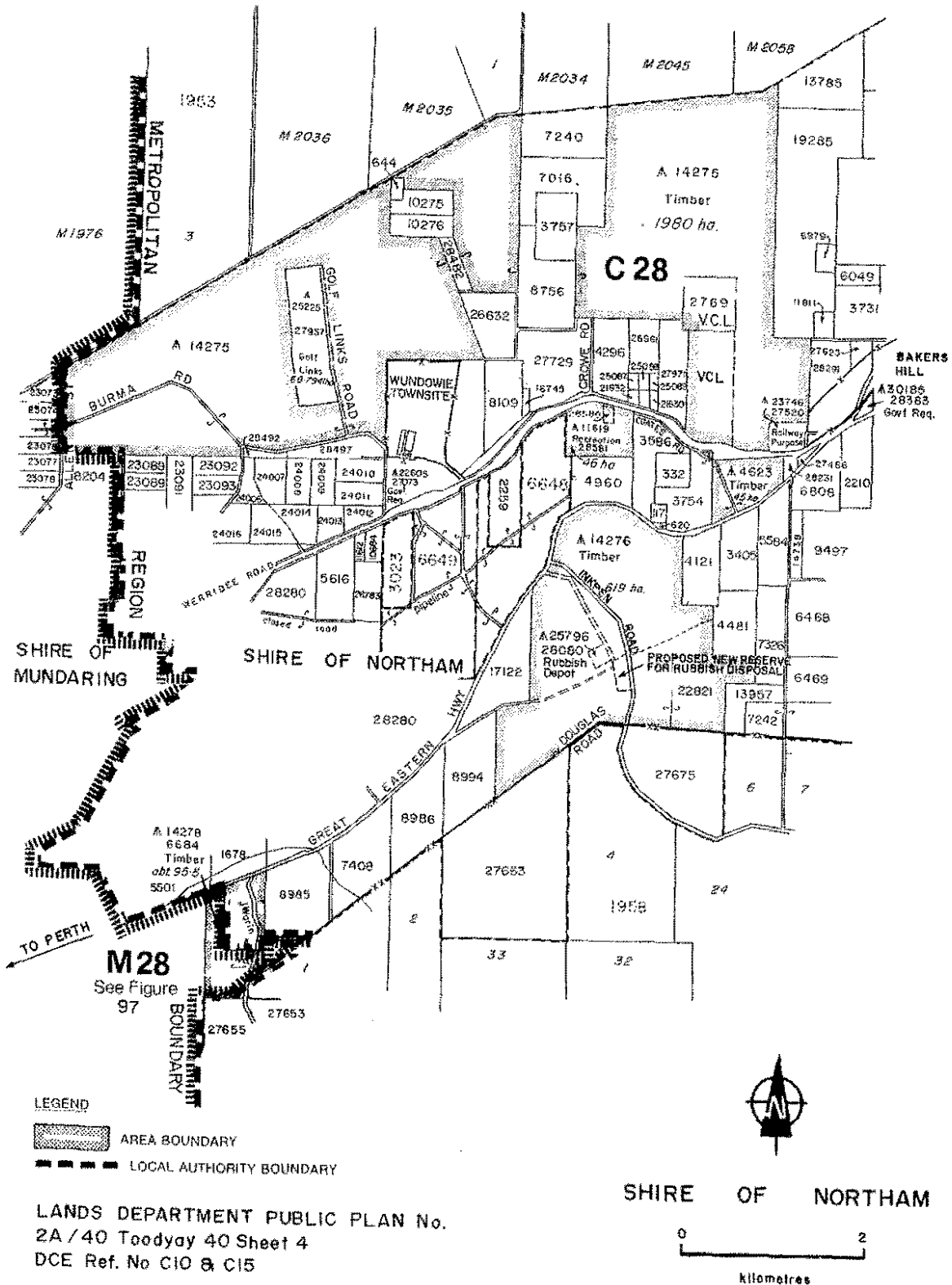


Figure 22

Schools, from nearby and also from Perth, use the area for ecological studies. Important management considerations for the area include the need for fire protection and controlled burning, and the directing of school use.

Recommendations:

- C29.1 That Reserves C1494 and C8518 be cancelled and their areas added to Reserve C32400.
- C29.2 That the vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna, vested for a limited term of 10 years in the W.A. Wildlife Authority (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.
- C29.3 That the respective purposes of Reserves C3307 and C20014 be amended to Conservation of Flora and Fauna, and that the Reserves be vested in the W.A. Wildlife Authority for a limited term of 10 years (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.
- C29.4 That ways and means of protecting the conservation value of Avon Locations 16016 and 21189 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C30 RESERVE C30363, INKPEN ROAD

The recommended area is situated about 15km east of Chidlow and 50km east of Perth and comprises Reserve C30363, for Government Requirements, not vested (Figure 24).

The area is within the Wooroloo Brook Catchment, a potential source of water supply. It may be affected by a proposed storage dam on the Wooroloo Brook, near its confluence with the Swan River. Public access would be restricted to some extent by Catchment Zone regulations.

The area is gravelly and undulating, with a low-lying central belt of sandy soil. It supports woodland of jarrah and marri with the latter predominating in the sandy soil. The shrubs of the understorey include harsh hakea, zamia, buttercups and honeybush. The vegetation is worthy of reservation although it contains vegetation of widespread distribution, while the sandy area is unusual in that most of the district consists of lateritic soils.

Recommendation:

- C30.1 That the purpose of Reserve C30363 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

C31 RESERVE C25860 AND C30393, BERRY BROW ROAD

The recommended area is situated about 25km south-west of Northam and comprises Reserves C25860, for Public Utility, and C30393, for Government Requirements, both not vested (Figure 24).

The area is partly within both the Alcoa Mining Lease and the Pacminex Agreement Area. However, the potential for bauxite is low and Pacminex has no plans for mining.

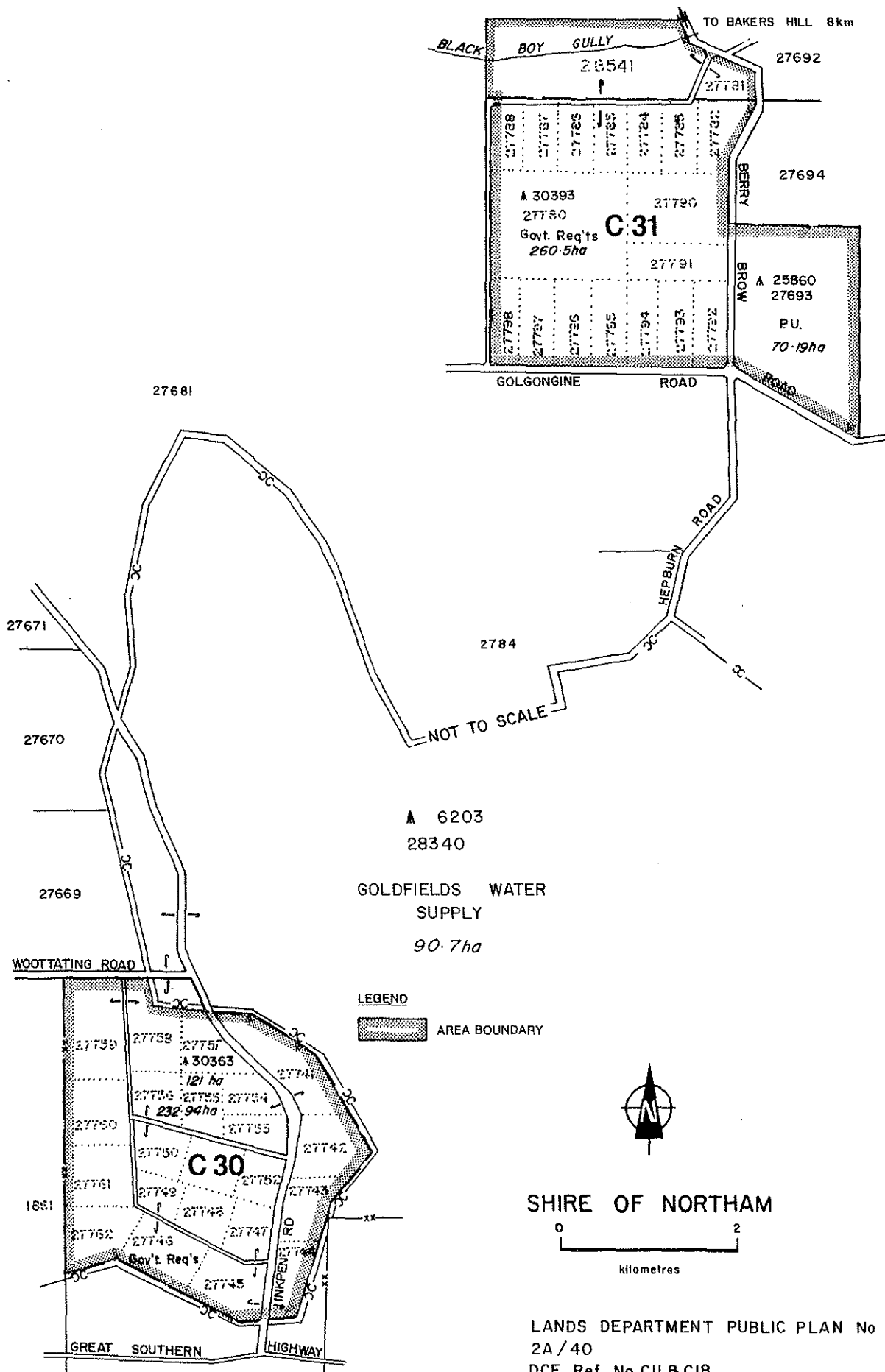
The Reserves occupy undulating country and contain some attractive granite outcrops. The higher parts are lateritic and are covered by low open-woodland of wandoo, jarrah, marri and powderbark. Zamia and silky bloodflower occur on the lateritic breakaway, and downslope vegetation consists of a mixture of york gum and jam with rock sheoak on some areas of granitic soil.

The area has potential as a site for an open range zoo. A picturesque winding creek in the northern part of Reserve C30393, and a gravel quarry (on high ground which affords excellent views) require minimum landscaping to make the area very attractive to potential zoo visitors. An adequate water supply could be maintained with slight modifications to the catchments, possibly involving the construction of a series of small dams in the creeks. The open-woodland and a network of tracks allows a fair degree of movement throughout the area. Access roads and powerlines run adjacent to Reserve C30393.

The metropolitan zoo in South Perth occupies an area of 18ha, which is insufficient to cater for the breeding and maintenance of stocks of many animal species. There is an increasing recreational demand for an open range zoo within a day-visit distance from Perth metropolitan area. Open range zoos have been operating in other parts of Australia and throughout the world for some years. An open range zoo near to Perth would offer considerable advantages to metropolitan residents and the tourist industry, and would provide significant recreational and educational benefits.

Recommendations:

- C31.1 That Reserve C25860 be cancelled and its area added to Reserve C30393.
- C31.2 That the purpose of Reserve C30393 be amended to Zoological Gardens and that the Reserve be vested in the Zoological Gardens Board.



C32 DALE MANAGEMENT PRIORITY AREA

The recommended area is situated about 50km south-east of Perth and comprises State Forest, being Dale Management Priority Area. The management priority as designated by the Forests Department is conservation of flora, fauna and landscape, and catchment protection. Also included in the recommended area is part of Location 10383, freehold land held in the name of the Conservator of Forests (Figure 25).

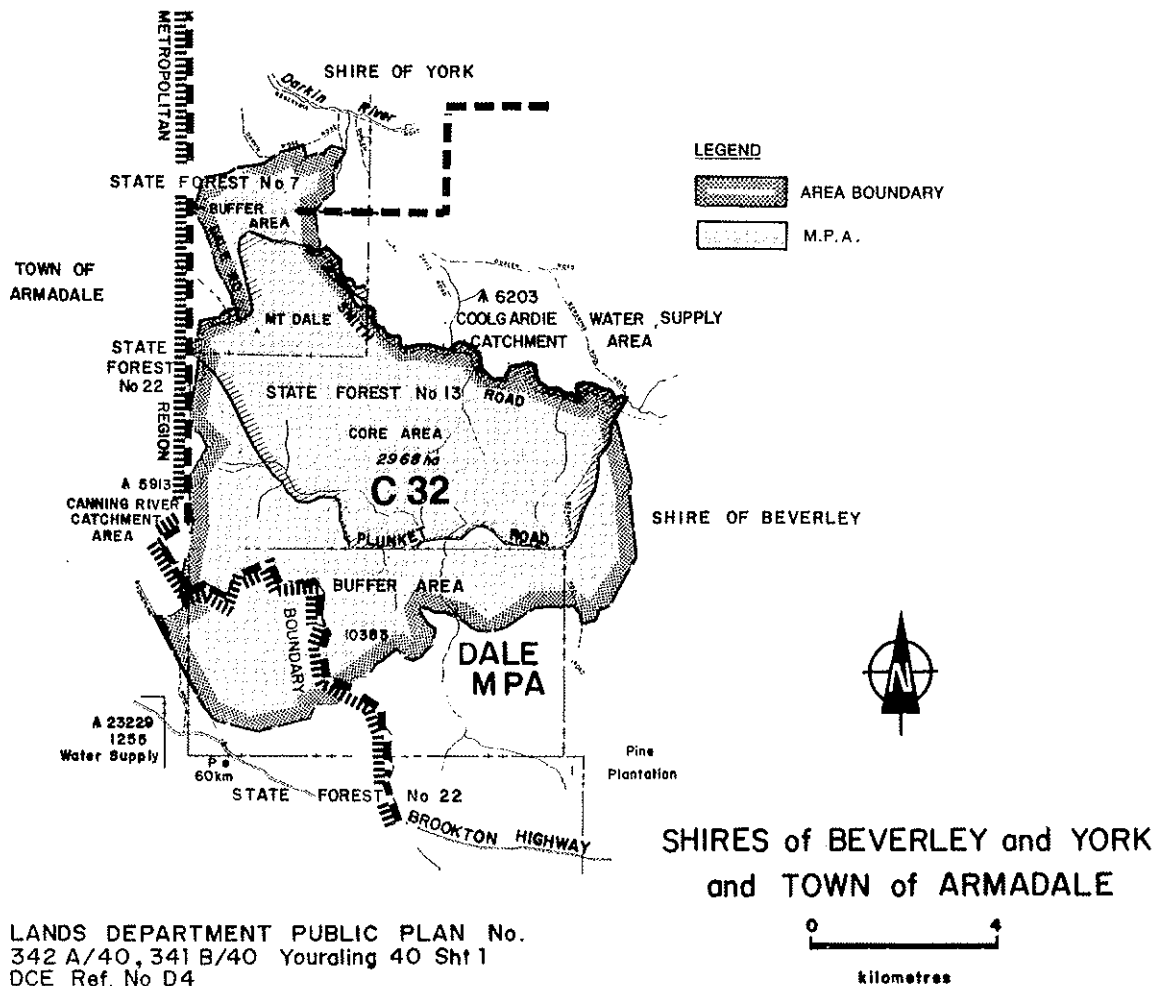
The area is within the Mundaring and Canning River Catchments, sources of water supply, and so Catchment Zone Regulations apply. The locality is within the Alcoa Mining Lease and the southern portion has long-term potential for bauxite mining. The MRD states that it will require gravel from the buffer area of the MPA for construction and maintenance of Brookton Highway.

Dale MPA contains a broad range of features: lateritic uplands support open-forest of jarrah and marri with an understorey of sheoak; jarrah woodland, shrubland, herbland and a lithic complex occur on shallower soils and granite outcrops; wandoo and flooded gum woodlands occur in the valleys. The MPA conserves several vegetation types which have been severely affected by dieback elsewhere in State Forest. The south-western edge of the MPA contains springs which are valuable for conservation.

Mt. Dale is popular for walks and picnics, but uncontrolled access may affect the area.

Recommendations:

- C32.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Dale MPA.
- C32.2 That the Forests Department prepare its management plan in consultation with the Public Works Department and the Department for Youth, Sport and Recreation.



LANDS DEPARTMENT PUBLIC PLAN No.
 342 A/40, 341 B/40 Youraling 40 Sht 1
 DCE Ref. No D4

Figure 25

C33 RUSSELL MANAGEMENT PRIORITY AREA

The recommended area is situated about 65km south-east of Perth and comprises State Forest, being Russell Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 26).

The MPA is within Beraking Brook Catchment and public access is restricted by Catchment Zone regulations — recreational use will increase in the future however. The area may be affected by widening or realignment of the Armadale — Ravensthorpe Road and also by the Dale-Mawson Road. It is within the Alwest Agreement Area but is excluded from current long-term bauxite mining plans. The MRD states that it is likely to require large quantities of gravel from within both the core and buffer areas.

Russell MPA contains the largest remaining area of uncut wandoo woodland in System 6. The MPA also contains significant areas of lateritic soils supporting jarrah open-forest and woodland, low open-forest of rock sheoak, and shrubland.

The southern part of Russell MPA contributes to open space of regional significance extending along Brookton Highway (see Figure 1, Chapter 4) because of its scenic, recreation and conservation value.

Recommendations:

- C33.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C33.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Russell MPA.

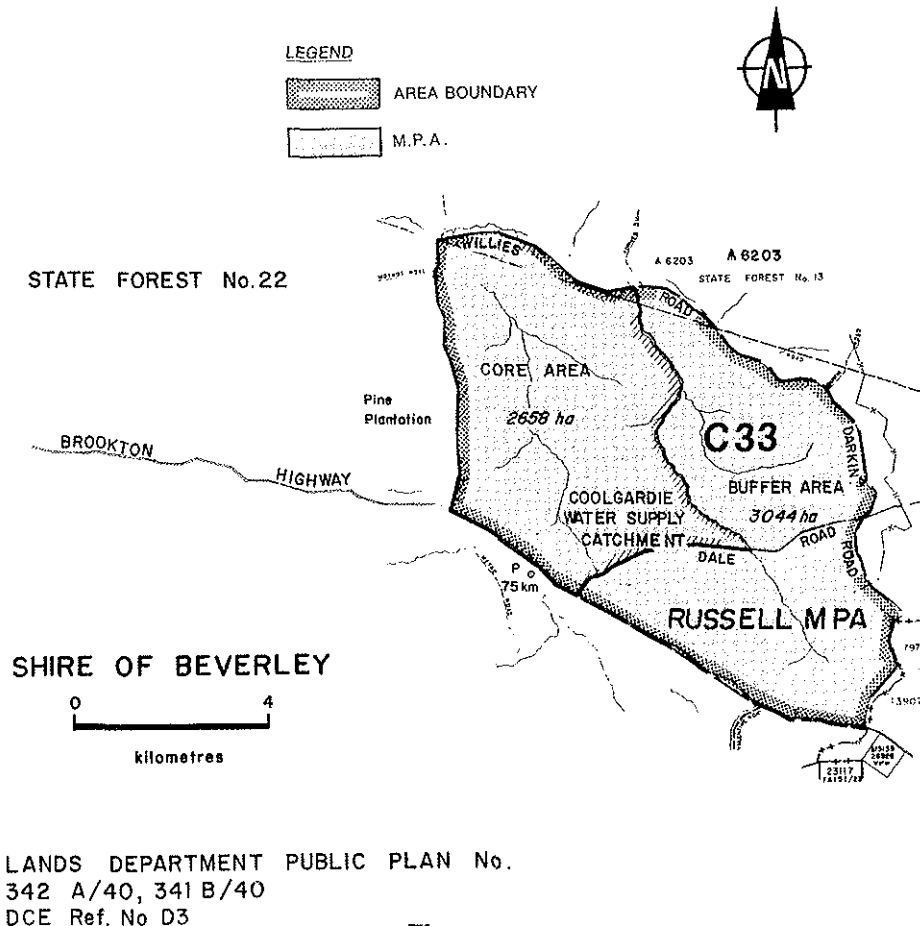


Figure 26

C34 GUNAPIN MANAGEMENT PRIORITY AREA

The recommended area is situated about 70km east of Perth and comprises State Forest, being Gunapin Management Priority Area. The management priority as designated by the Forests Department is conservation of flora, fauna and landscape, and catchment protection (Figure 27).

The MPA is within the Darkin River Catchment and public access is restricted by Catchment Zone regulations. It has potential for bauxite and is within the Pacminex and Alwest Agreement Areas although there are no immediate plans for mining.

Gunapin MPA conserves an outstanding range of vegetation types and species in undisturbed or mildly disturbed conditions. It contains the largest area of swamps in State Forest, swamp vegetation including low closed-forest and open woodland of paperbark, open-woodland of swamp banksia and swamp sheoak, and closed shrubland of melaleuca and sedgelands. Wandoo and jarrah woodland occurs away from the swamps with rock sheoak, lichens, herblands and shrublands associated with granite outcrops. The swamps also support numerous species of native fauna.

Recommendations:

- C34.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Gunapin MPA.
- C34.2 That the Forests Department prepare its management plan in consultation with the Public Works Department and the Department for Youth, Sport and Recreation.

C35 SULLIVAN MANAGEMENT PRIORITY AREA

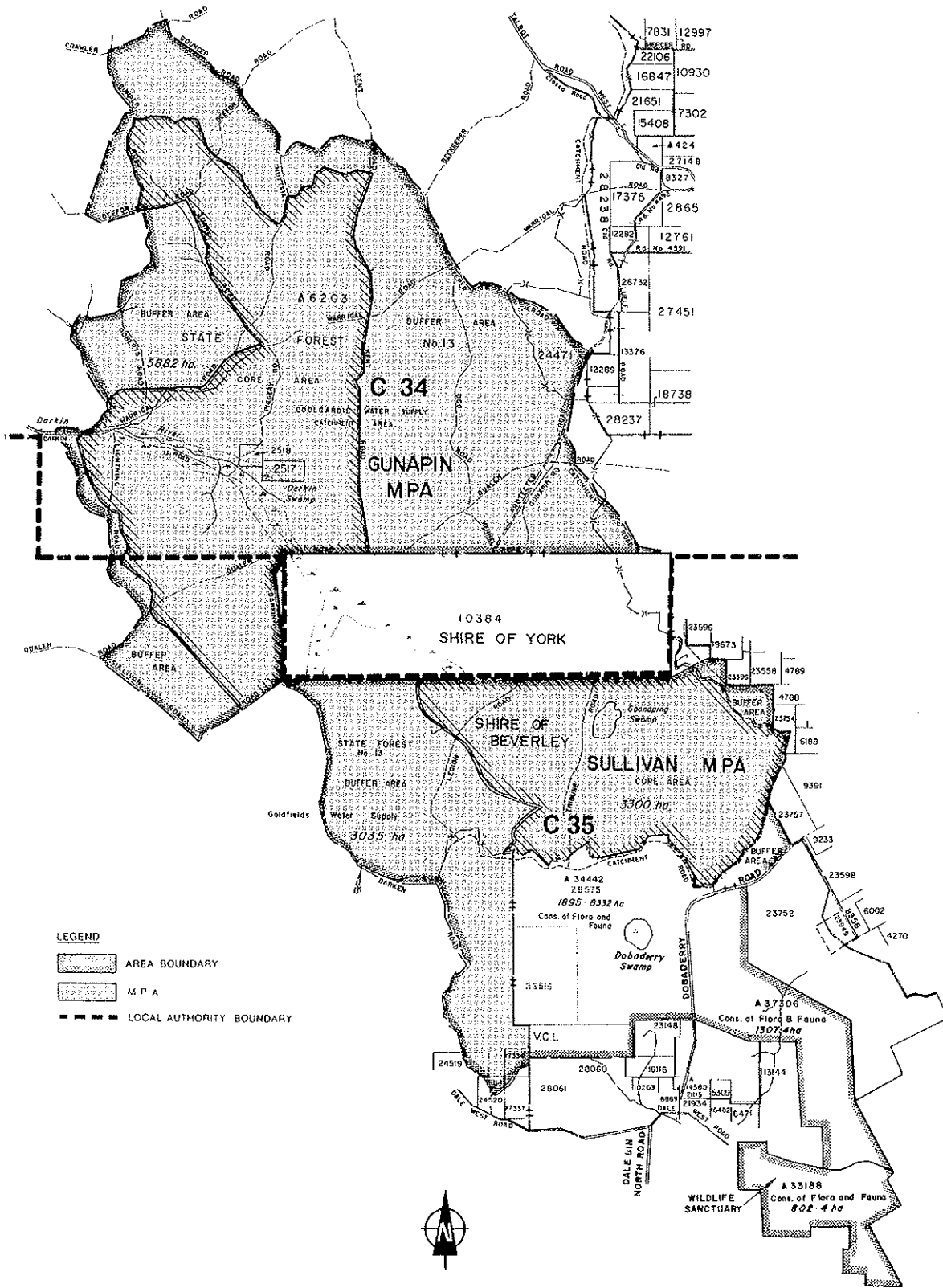
The recommended area is situated about 10km north of Boyagarring and most of it comprises State Forest, being Sullivan Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserves C33188, C37306 and C34442, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; and vacant Crown land (Figure 27).

The northern section is within the Helena (Mundaring Weir) Reservoir Catchment and public access is restricted by Catchment Zone regulations. The southern section may be affected by the Dale-Mawson Rd. The area has some bauxite potential and is within the Alwest Agreement Area but is excluded from current long-term mining plans. Kangaroo shooters operate in the area.

The area contains Dobaderry and Goonaping Swamps which support a variety of flora and fauna. The outstanding feature of the area is the swamp vegetation which includes low open-woodland of slender banksia and Menzies' banksia, low open-forest of Moonah paperbark and swamp banksia, and sedgelands. There are also significant stands of swamp cypress and *Casuarina acuarina*. The lateritic uplands support mostly open-woodland of wandoo, with some jarrah, marri and powderbark.

Recommendations:

- C35.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Sullivan MPA.
- C35.2 That the above-mentioned vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C35.3 That Reserves 33188, 37306 and 34442 be classified as Class A.
- C35.4 That the Forests Department prepare its management plan in consultation with the Public Works Department and the Department for Youth, Sport and Recreation.



LANDS DEPARTMENT PUBLIC PLAN No
2 /40, 342 /40, 342 /40
DCE Ref. No D1, D2,

Figure 27

C36 EAGLE HILL MANAGEMENT PRIORITY AREA

The recommended area is situated about 50km south-east of Perth and comprises State Forest, being Eagle Hill Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 28).

Most of the MPA is within the Canning River Catchment, a water supply source, and public access is restricted by Catchment Zone regulations. There are several springs alongside Eagle Hill Ridge of particular importance for the MWA. The MWA may require access for construction of the proposed South Canning Dam although the dam will not actually inundate the MPA. The area may be affected by future requirements of Albany Highway. It is within the Alcoa Mining Lease and has considerable medium-term potential for bauxite mining.

The outstanding features of Eagle Hill MPA, besides extensive open-forest of jarrah and marri, are some uncut and relatively undisturbed stands of yarri along the Canning River valley, stands of the rare butter gum, some extensive stands of black gin and a wide range of plant species associated with the Mt Cooke-Mt Randall chain of monadnocks. Recreational use of the area will increase.

Recommendations:

- C36.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Eagle Hill MPA.
- C36.2 That the Forests Department prepare its management plan in consultation with the Public Works Department and the Department for Youth, Sport and Recreation.

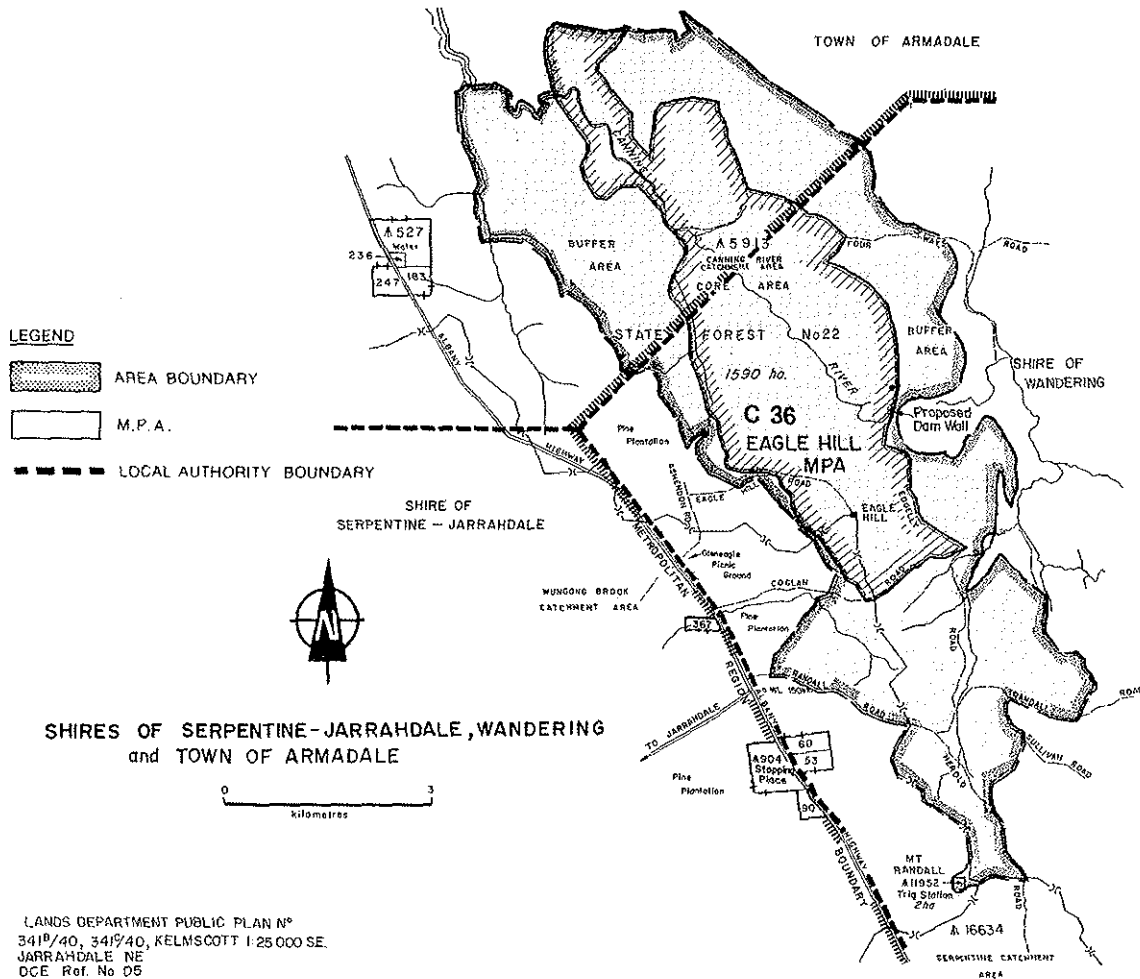


Figure 28

C37 BROOKTON AND ALBANY HIGHWAYS

The Brookton and Albany Highways pass through an extensive area of State Forest between the Darling Scarp and the agricultural area to the east (Figure 29).

The MRD states that Brookton Highway will require widening, involving earthworks, establishment of borrow areas and some clearing of vegetation. Within the proposed 1km — wide strips, the MRD considers that it is likely to require access to materials, stockpiles or campsites.

For many travellers the Highways provide the best opportunity to see the natural vegetation of the Darling Range and especially the forest of jarrah, marri and wandoo in extensive areas. On the Great Northern and Great Eastern Highways and the Toodyay Road the forests are already decimated by clearing, and the highways further south pass through forests of different plant associations.

Although there has been some replacement of natural vegetation with introduced eucalyptus and pine, the forests of the Brookton and Albany Highways remain relatively intact over long distances. There are many wildflowers to be seen in the understoreys, their composition changing with different soil types and with rainfall. It is important that the natural vegetation be retained both for its appeal to visitors and for scientific study. Some of the plants are rare.

The several sandy areas traversed are of special interest in supporting outlying populations of species found otherwise on the Coastal Plain: for example, Menzies' banksia, summer starflower and blueboy.

These areas constitute open space of regional significance (see Figure 1, Chapter 4) because of their value for conservation, for roadside display and for scientific study. Land tenure and land use in the areas are varied and to ensure that these values are made primary management objectives, coordination of the management structure is required.

Recommendation:

C37.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

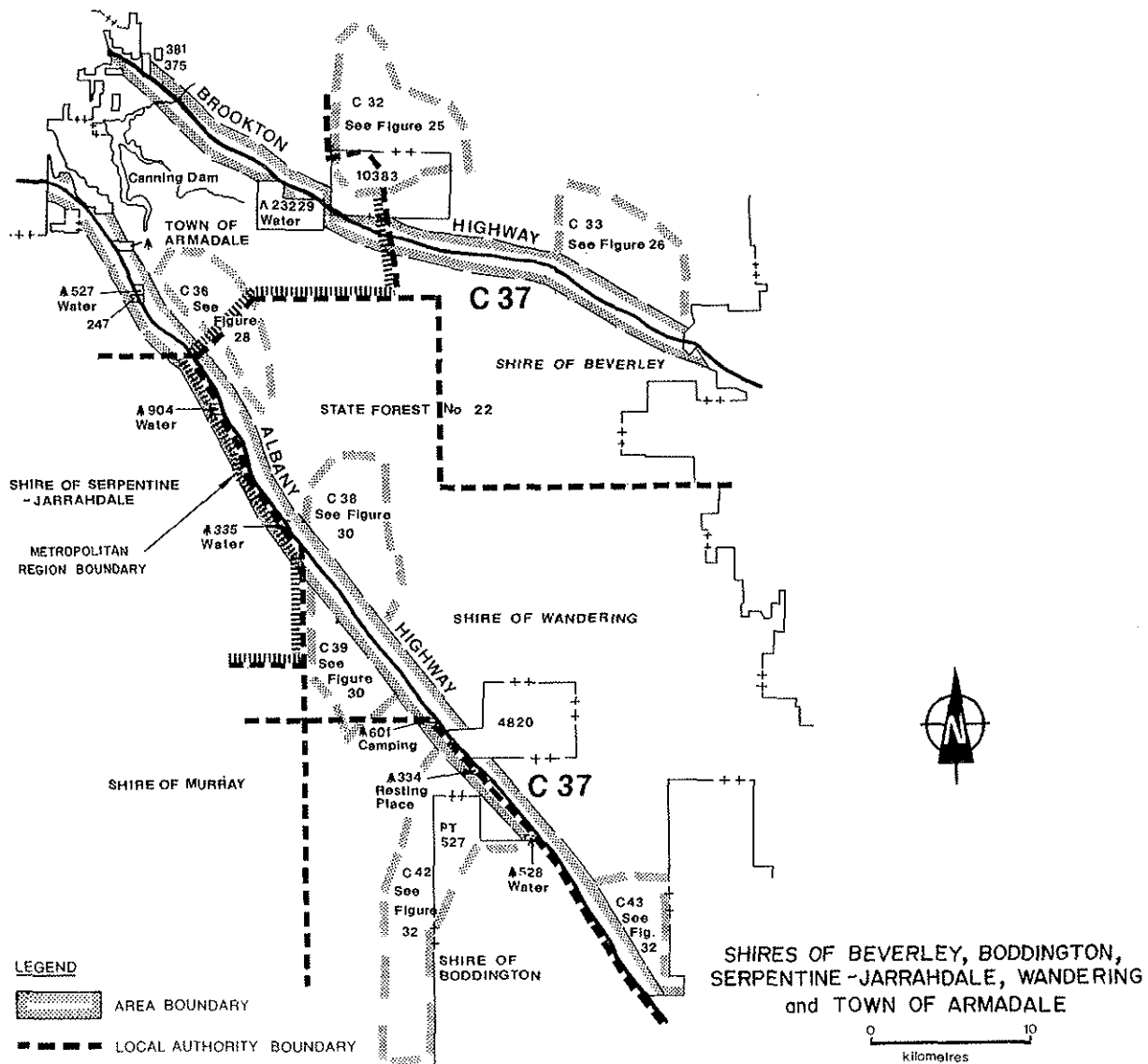


Figure 29

C38 COOKE MANAGEMENT PRIORITY AREA

The recommended area is situated about 70km south-east of Perth and most of it comprises State Forest, being Cooke Management Priority Area. The management priority as designated by the Forests Department is conservation of flora, fauna and landscape, and catchment protection. Also included in the recommended area is part of Reserve C335, for Watering and Stopping Place for Teams, under the control of the Shire of Wandering (Figure 30).

The area is popular for bushwalking and rock climbing. The area is within the Canning River Catchment, a water supply source. Public access is restricted by Catchment Zone regulations. There are SEC lines and more are proposed. Future requirements for Albany Highway may affect the area. The MRD states that it will require small quantities of gravel from the area. It is within the Alcoa Mining Lease and has long-term potential for bauxite mining.

Cooke MPA is of particular value for an area of uncut jarrah forest on the uplands and a chain of monadnocks covered in part by stands of the rare butter gum. The main vegetation type is open-forest of jarrah mixed with marri; also open-woodland of wandoo occurs in the valleys with various species of *Melaleuca* and other typical swamp plants dominating the moister parts. Lichens, herbfields and thickets of grevillea and hakea are associated with granite outcrops and gravelly soils on the slopes carry various species including jugflower and zamia.

The southern portion of Cooke MPA contributes to open space of regional significance extending along Albany Highway (see Figure 1, Chapter 4) because of its high scenic, conservation and recreation value.

Recommendations:

- C38.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C38.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Cooke MPA.
- C38.3 That the part of Reserve C335 which lies east of Albany Highway be excised, added to State Forest and managed as part of Cooke MPA.

C39 WINDSOR MANAGEMENT PRIORITY AREA

The recommended area is situated about 70km south-east of Perth and comprises State Forest, being Windsor Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 30).

Recreational pressure may increase in the future because the area is surrounded by three main roads, including Albany Highway. The area is within the Serpentine Dam and Canning River Catchments, water supply sources, and public access is restricted by Catchment Zone regulations. There are SEC lines and more are proposed. The area may be affected by future requirements for Albany Highway and the MRD states that it will require small quantities of gravel. It is within the Alcoa Mining Lease and has long-term potential for bauxite mining.

Windsor MPA contains a range of vegetation types. Associated with lateritic uplands and a chain of monadnocks are open-forest of jarrah, open-woodland of wandoo and a lithic complex on the granite rocks. Broad valleys and swampy valley floors support wandoo, mixed stands of jarrah, marri and yarri, and species typical of swampy areas such as *Melaleuca*. The last are important in sheltering a variety of native animals.

The northern portion of Windsor MPA contributes to open space of regional significance extending along Albany Highway (see Figure 1, Chapter 4) because of its high scenic, conservation and recreation value.

Recommendations:

- C39.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C39.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Windsor MPA.

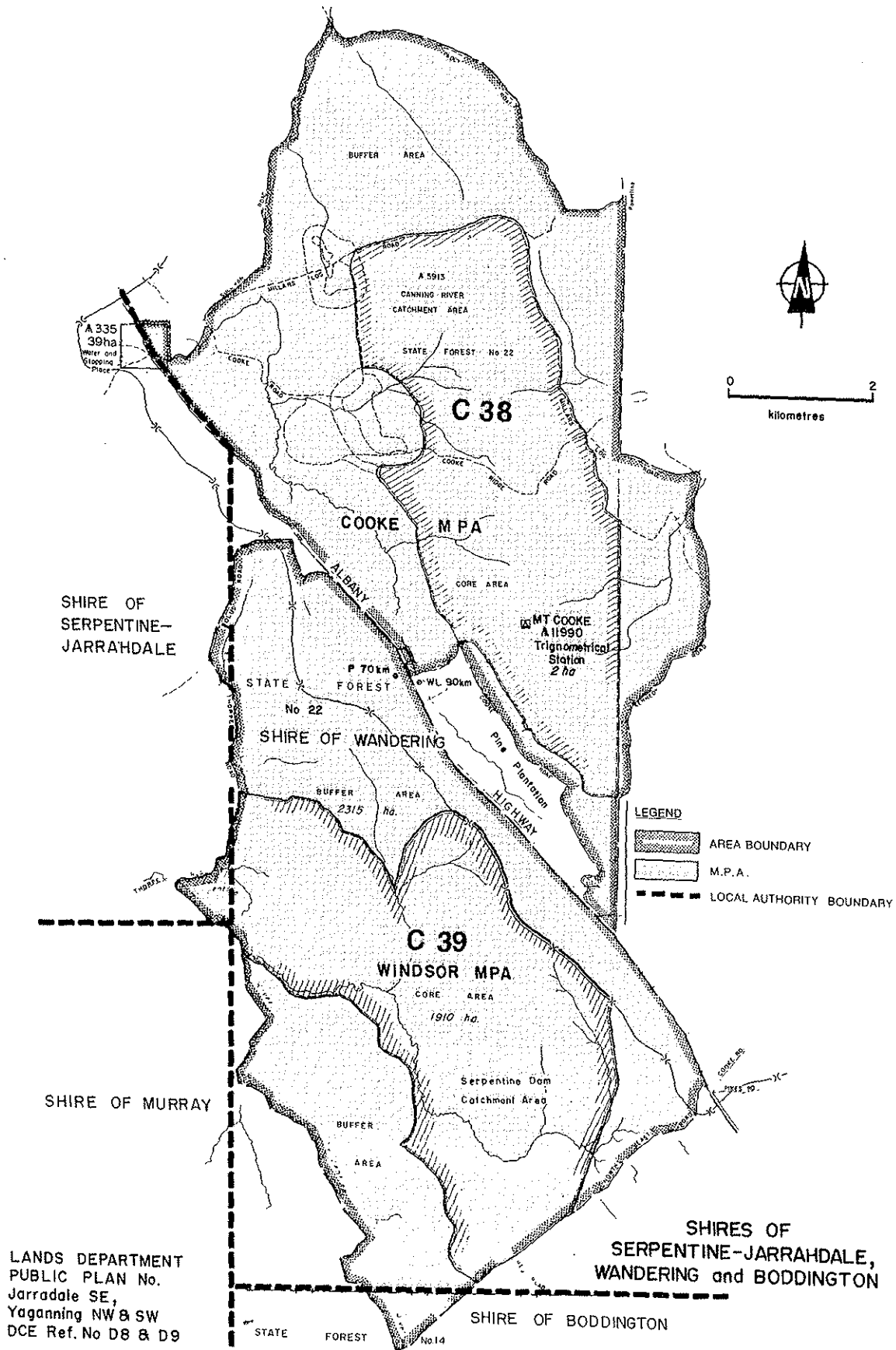


Figure 30

C40 BOYAGARRING MANAGEMENT PRIORITY AREA

The recommended area is situated about 80km south-east of Perth. It comprises vacant Crown land designated in the Forests Department's Working Plan No. 87 as Boyagarring Management Priority Area, with the management priority being conservation of flora, fauna and landscape (Figure 31).

SEC lines pass through the area and more are proposed. The MPA is within the Alwest Agreement Area, but is excluded from long-term bauxite mining plans. There has been continuing pressure for the release of the Crown land for farm build-up purposes. However, the Forests Department has strongly argued for conservation of the area.

Recreational use of the area is likely to increase.

Boyagarring MPA comprises undulating uplands with dissected lateritic slopes. The MPA is significant because it contains a large range of soils, landforms and vegetation. Also, most valleys similar to those within the MPA have been developed for agriculture. Vegetation ranges from open-woodland of wandoo with localised occurrences of powderbark to low woodland of rock sheoak on the periphery of granite outcrops.

Recommendations:

- C40.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Boyagarring MPA.
- C40.2 That the vacant Crown land be added to State Forest and managed as Boyagarring MPA.

C41 LUPTON MANAGEMENT PRIORITY AREA

The recommended area is situated about 100km south-east of Perth and comprises Reserve C26666 for Timber, not vested, and some vacant Crown land abutting the northern boundary of the Reserve. The eastern portion of Reserve C26666 has been designated in the Forests Department's Working Plan No. 87 as Lupton Management Priority Area, with the management priority being conservation of flora, fauna and landscape (Figure 31).

The area is within the Alwest Agreement Area, but is excluded from current long-term bauxite mining plans. Deposition of rubbish is taking place in the eastern section of the MPA. Also, there has been continuing pressure for the release of several portions of the area for farm build-up purposes. However, the Forests Department has strongly argued for conservation of the area.

The area contains lateritic uplands supporting open-woodland of wandoo, with powderbark on the ridges and jarrah on the more undulating parts. The valleys support wandoo woodland with stands of jam, rock sheoak and manna wattle. The area is particularly important as it is the only area of comparable size available for reservation which contains these vegetation types and their associated fauna. No dieback has been recorded in the MPA.

Recommendations:

- C41.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Lupton MPA.
- C41.2 That Reserve C26666 be cancelled and its area added to State Forest to be managed as part of Lupton MPA.
- C41.3 That the vacant Crown land abutting the northern boundary of Reserve C26666 be added to State Forest and managed as part of Lupton MPA.

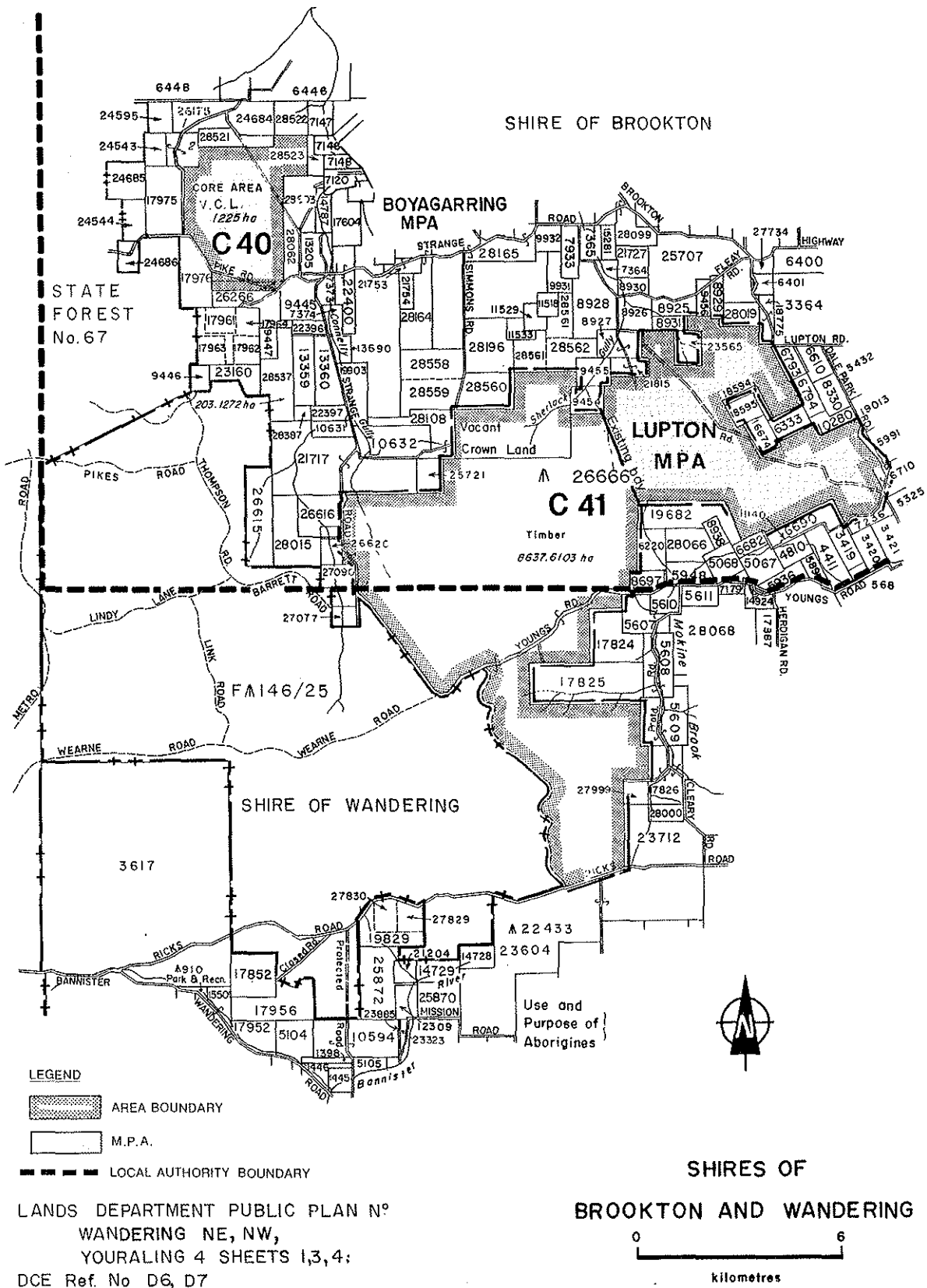


Figure 31

C42 DUNCAN MANAGEMENT PRIORITY AREA

The recommended area is situated about 100km south-east of Perth and comprises State Forest, being Duncan Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserve C528, for Water, vested in the Shire of Boddington; Reserve

C334, for Watering and Stopping Place for Teams, and part of Reserve C601, for Stopping Place for Teams, both under the control of the Shire of Wandering; Location 527, the northern part of which is held by the PWD, the middle part by the MWA, with the southern part being vacant Crown land; and part of Location 526, held by the PWD (Figure 32).

The area is within the Serpentine Dam and South Dandalup Catchments, water supply sources. It may be affected by the proposed South Canning Dam. Public access is subject to Catchment Zone regulations. There are SEC lines in the area and more are proposed. The area may be affected by future requirements for Albany Highway. It is within the Alwest Agreement Area and the Alcoa Mining Lease and has long-term potential for bauxite mining, although it is excluded from Alwest's current long-term plans.

Duncan MPA contains a range of vegetation including open-forest of jarrah, open-woodland of wandoo and a lithic complex on the granite rocks. The valleys contain a vegetation type characterised by open-forest of jarrah and marri and understorey species including white myrtle which has been severely depleted by dieback elsewhere in State Forest and is very important to conserve. Other significant features of the MPA are an area of uncut wandoo in the northern section and stands of Drummond's Gum, which is restricted in occurrence elsewhere in State Forest.

Recommendations:

- C42.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Duncan MPA.
- C42.2 That Reserve C334 be cancelled and its area added to State Forest to be managed as part of Duncan MPA.
- C42.3 That the eastern portion of Reserve C601 be excised and added to State Forest to be managed as part of Duncan MPA.
- C42.4 That Reserve C528 be cancelled and added to State Forest to be managed as part of Duncan MPA.
- C42.5 That the vacant Crown land be added to State Forest to be managed as part of Duncan MPA.
- C42.6 That the section of Locations 526 and 527 held by the Public Works Department and the section of Location 527 held by the Metropolitan Water Authority be managed as if part of Duncan MPA.

C43 GYNGOORDA MANAGEMENT PRIORITY AREA

The recommended area is situated about 100km south-east of Perth on the eastern side of Albany Highway and comprises State Forest, being Gyngoorda Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 32).

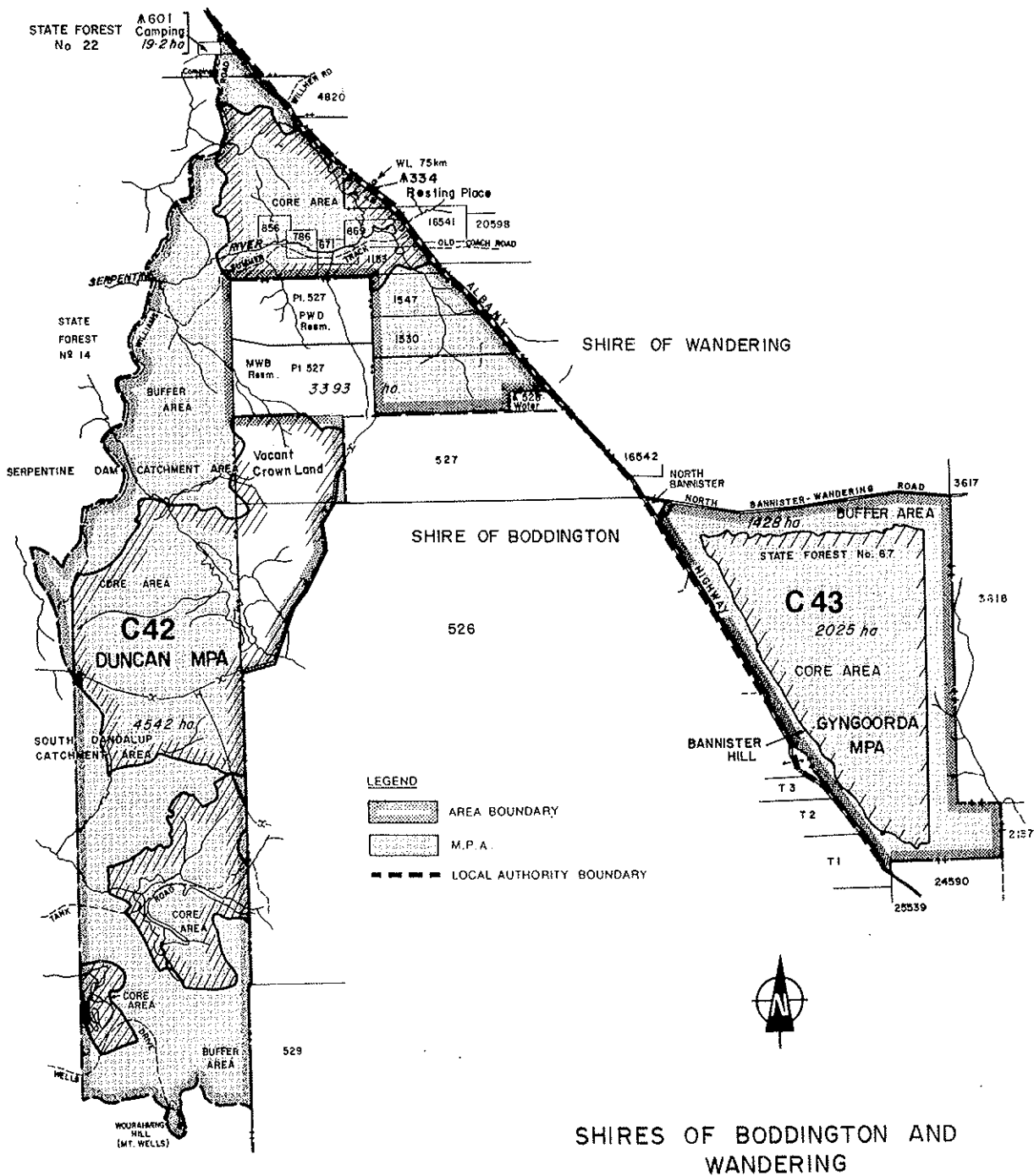
The area is within the Murray River Catchment, a potential water supply source. The area may be affected by future realignment of Albany Highway. It is within the Alwest Agreement Area, but it is excluded from current long-term bauxite mining plans. Subdivision of nearby land is increasing.

Gyngoorda MPA contains vegetation which is characteristic of the lower rainfall areas in State Forest. Open-forest of jarrah and some marri, with an understorey of sheoak and banksia, covers most of the area. There is also some open-woodland of wandoo and some stands of powderbark.

There is a picnic spot beside Albany Highway and outstanding scenic views from Bannister Hill. Recreational activity is likely to increase. However, the risk of spread of dieback may necessitate some controls.

Recommendations:

- C43.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Gyngoorda MPA.
- C43.2 That the Forests Department prepare its management plan in consultation with the Metropolitan Water Authority and the Department for Youth, Sport and Recreation.



LANDS DEPARTMENT PUBLIC PLAN No:
 379^A/40, 379^B/40, 379^C/40, 379^D/40
 Wandering NW, NE
 DCE Ref. No D16, D17

Figure 32

C44 WANDERING MANAGEMENT PRIORITY AREA

The recommended area being Wandering Management Priority Area, is situated about 100km south-east of Perth just outside the System 6 boundary. The MPA comprises part of Timber Reserves 145/25 and 160/25; and Reserve C18534, for Timber, not vested. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 33).

The MPA is within the Murray River Catchment, a potential water supply source. It may be affected by future realignment of Albany Highway. It is within the Alwest Agreement Area, but is excluded from current long-term mining plans.

C45 ROTTNEST ISLAND

The recommended area is situated about 20km west of Fremantle, and comprises Reserve A16713, for Public Recreation, vested in the Rottneest Island Board, together with the adjacent waters, from the north-east side of Eagle Bay to (and including) Fish Hook Bay, and from Phillip Rock to Salmon Point (Figure 34).

The greater part of Rottneest Island is covered by undulating sand hills. A chain of lakes dominates the north-eastern sector, and covers about a tenth of the island. Many small swamps and soaks, mainly located in interdunal depressions, are scattered around the eastern half of the island. The serrated coastline consists of a succession of exposed limestone headlands and sandy bays, with rock platforms extending seaward in many points. Smaller islands and rocky islets dot the surrounding waters.

The vegetation has changed dramatically since human occupation. Originally the island was covered by an almost impenetrable low closed-forest of Rottneest cypress (the dominant species), Rottneest tea-tree and *Pittosporum*. Fire gradually eliminated the first two types in favour of *Acacia rostellifera*, which was dominant in the early 1900s. Since then grazing by quokkas has resulted in a closed-heath of *Stipa variabilis* and *Acanthocarpus preissii*, becoming by far the most widespread plant community on the island. This closed-heath, which now covers most of the island west of the lakes, is often associated with a variety of other species.

Confined to the eastern end of the island there are patches of closed-scrub and low closed-forest of Rottneest tea-tree and, on limestone ridges near the major lakes, there is closed-heath of cookies' tongues, in places mixed with other plants and Rottneest cypress. On the stable dunes around Narrowneck and elsewhere closed-heath occurs, the principal species being *Westringia rigida*, *Olearia axillaris*, *Rhagodia* spp., *Scaevola crassifolia*, *Threlkeldia diffusa* and *Senecio lautus*. In other areas with limestone at or near the surface, such as at Parker Point and in places east of Narrowneck, closed-heath of *Acacia Truncata* occurs. Various species associate with the acacia depending on local conditions.

There are sand blowouts, which support little or no vegetation, in twenty-two locations on the island. Although blowouts occur naturally, their initiation and spread is helped by fire and by disturbance of the soil.

Rottneest Island has a great variety and abundance of birds, related to the multiplicity of habitats: steppe, heath, scrub, samphire, salt lakes, brackish swamps, freshwater soaks, sandy beaches, rocky coasts, offshore islands and rocky islets. The forest and woodland are visited in winter by the fan-tailed cuckoo, which is common and breeds on the island; by contrast it is only a passage migrant around Perth. The scrub of *Acacia rostellifera* is the habitat of the golden whistler and the red-capped robin. The spotted scrub-wren inhabits the dunes, and is most numerous along the south coast from Narrowneck to May Cove. The commonest species in the dunes is the singing honeyeater. The open *Stipa-Acanthocarpus* country supports the pipit, white-fronted chat, raven and kestrel.

The salt lakes near the eastern end of the island provide water-bird habitats that are not duplicated on the Coastal Plain. Water-birds include the banded stilt, mountain duck, fairy tern, red-necked stint, curlew sandpiper, turnstone, sanderling, large dotterel, sharp-tailed sandpiper, hooded dotterel, greenshank and golden plover. Rottneest Island's marine bird fauna owes its great diversity largely to the surrounding islands and rocky islets. The chief islands are Dyers Island, Green Island and Parakeet Island. A breeding colony of rock parrot exists on Dyers Island. This species was once plentiful on Rottneest Island but is now extremely rare. Other breeding colonies, on one or more of the islands, include the pied-cormorant, wedge-tailed shearwater, caspian tern, bridled tern, crested tern, little shearwater, mountain duck and osprey.

Rottneest Island supports two native mammals, the quokka and the Australian sea-lion. Two of Rottneest's reptiles, the bobtail lizard and the dugite snake are of interest in being morphologically distinct from the mainland specimens. In addition, the lined skink is a rare reptile found only on Rottneest and Garden Island and in a few southern suburbs of Perth: its future survival on the mainland is uncertain.

The waters of Rottneest Island contain a rich and diverse marine flora and fauna which should be retained. Of particular interest are the intertidal reef-flat fauna at West End, including numbers of tropical species not found so far south elsewhere, the sub-littoral zone at the eastern end of the island near Natural Jetty, and the sub-littoral coral reef at Parker Point. The waters around Rottneest Island are important for research and are used for educational purposes by the University of Western Australia. Seal Island, off the east side, is a nesting place for Australian sea-lions. The waters from Eagle Bay to Fish Hook Bay and from Salmon Point to Phillip Rock (as shown in Figure 34) may be suitable for the creation of Marine Reserves.

Since 1977 there have been between 200,000 and 250,000 visitors to Rottneest Island each year. Pressures for more transport and accommodation facilities is likely to continue with increases

in Perth's population and tourism development. Accommodation facilities have recently been increased with the new cottages at Geordie Bay and Longreach Bay and accommodation is likely to be further increased under the Government's proposed development plans for the Island. The area constitutes open space of regional significance (see Figure 1, Chapter 4), because of the great importance of Rottnest Island and adjacent waters to the Western Australian community in terms of recreation, conservation, historic and scientific significance. Coordinated management of the land and marine portions of the area is needed and important management considerations include: preserving the island's unique character and landscape; protecting the marine communities in the waters shown in Figure 34, by such means as restricting the collection of shells and other marine life; concentrating tourist accommodation facilities to a number which is compatible with the need to preserve the island's character, flora, fauna and natural features; obtaining technical advice from the Department of Conservation and Environment on the problems of coastal management.

Recommendations:

- C45.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendation 15, Chapter 5).
- C45.2 That the Environmental Protection Authority commission a study of the waters off Rottnest Island, especially those from (and including) Eagle Bay to Fish Hook Bay, and from Salmon Point to Phillip Rock, with the aim of establishing Marine Reserves to be managed for the purposes of scientific research and education.
- C45.3 That, subject to the implementation of C45.2, management plans be prepared for the Marine Reserves.
- C45.4 That the membership of the Rottnest Island Board include representatives of the various institutions associated with the scientific study of the Island's resources.

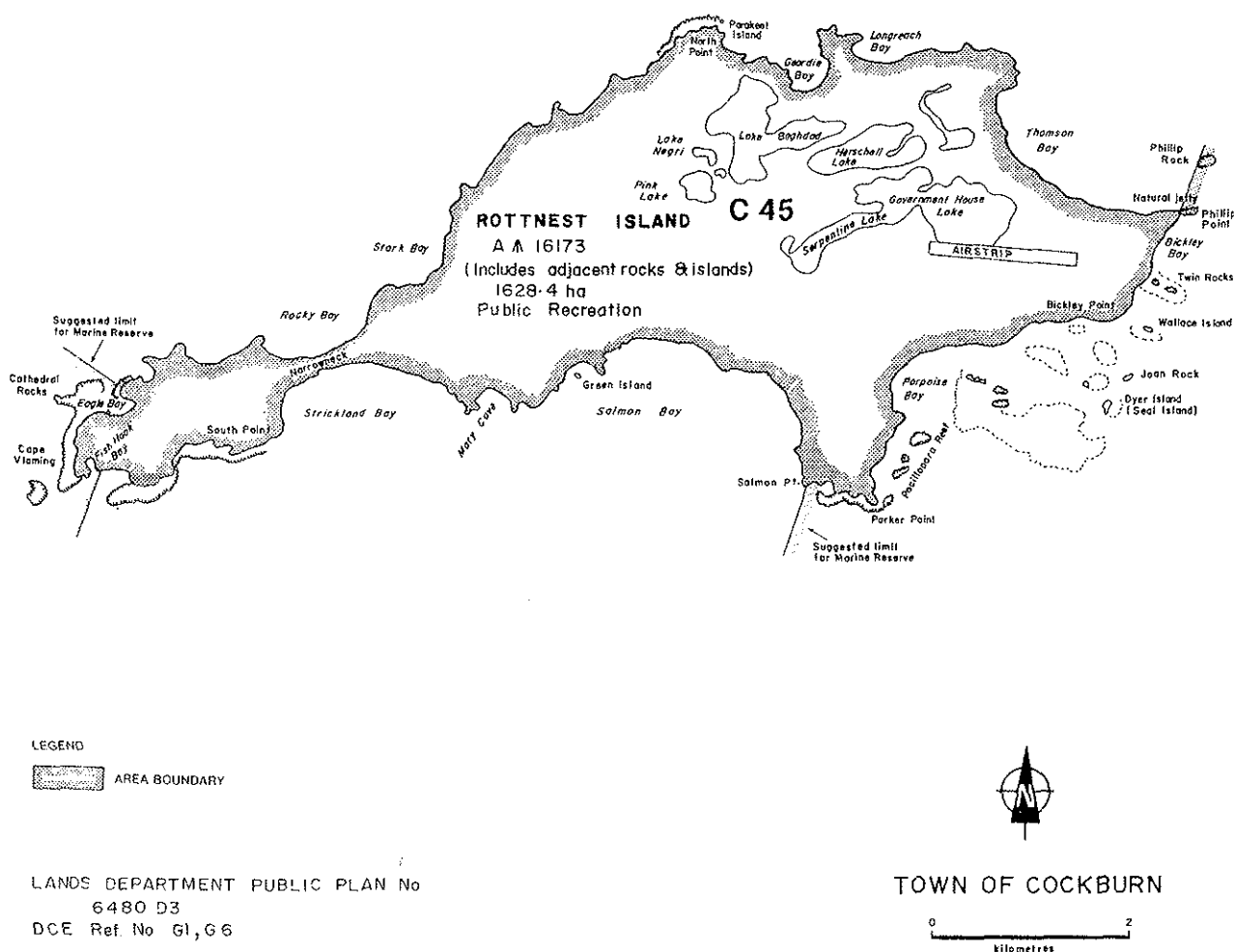


Figure 34

C46 CARNAC ISLAND

The recommended area is situated about 3km north of Garden Island and comprises Reserve A26646, for Recreation and Conservation of Fauna, vested in the W.A. Wildlife Authority; and the surrounding waters (Figure 35).

The area may be affected by industrial development in Cockburn Sound. The Department of Fisheries and Wildlife is currently preparing a management plan for Reserve A26646.

Thirty-three species of birds have been recorded from the island and at least eight species breed there. The island is noteworthy as the only area of overlap between the breeding ranges of the little penguin (northern limit) and the wedge-tailed shearwater (southern limit).

Carnac Island contains the greatest concentration of tiger snakes in Western Australia, and is internationally important as a source of snake venom for scientific research. Australian sea-lions commonly rest on the island.

The limestone reefs around the island vary considerably in their exposure to waves, and hence in the flora and fauna represented. The eastern side of the island has a small, shallow bay with seagrass meadows. The western side has extensive exposed intertidal reef-flats. The southern and northern ends have small sheltered rocky bays and narrow fringing reef-flats. Offshore there are several deeply cavernous sub-littoral reefs. These reefs and shallows support a rich and diverse marine flora and fauna, including two species of echinoderms which are rare or unknown in reefs around Fremantle and other offshore islands. Study of the reefs' intertidal ecology is important in understanding the distribution of littoral fauna on the mainland reefs.

Carnac Island has great value as a place to which people can make day-visits to study marine life, and as a commercial fishing area.

Recommendations:

- C46.1 That a study of the area be commissioned by the Environmental Protection Authority with the aim of establishing a Marine Reserve to be managed for the purposes of conservation and education.
- C46.2 That, subject to the implementation of C46.1, a management plan be prepared for the Reserve in consultation with the Department of Marine and Harbours.
- C46.3 That the present purpose and vesting of Reserve A26646 is endorsed.

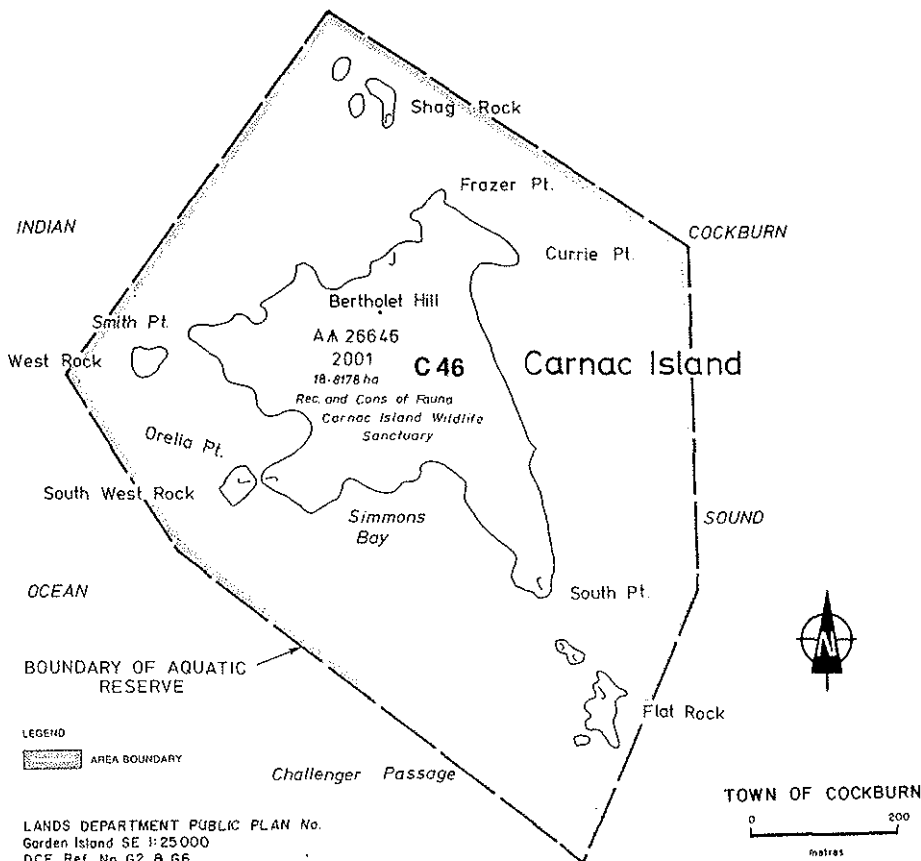


Figure 35

C47 RESERVE C14629, NORTH DANDALUP

The recommended area is situated on the Darling Scarp about 5km north-east of North Dandalup townsite, and comprises Reserve C14629, for Timber for Settlers, not vested (Figure 36).

The Darling Scarp vegetation, which is inadequately represented elsewhere, is the significant feature of the Reserve. The vegetation ranges from open-forest of jarrah and marri on lateritic soils, to low open-woodland of wandoo with admixtures of marri and the rare butter gum, to heath and herbland on the granite outcrops.

The area has conservation, recreation and landscape value and comprises a part of the larger area of open space of regional significance which extends along the Darling Scarp (see Figure 1, Chapter 4).

Recommendations:

- C47.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C47.2 That the purpose of Reserve C14629 be amended to Conservation of Flora and Fauna, and Recreation, and that the Reserve be vested in the Conservator of Forests.

C48 RESERVE C19413, NORTH DANDALUP

The recommended area is situated on the Darling Scarp about 3km north-east of the North Dandalup townsite and comprises Reserve C19413, for Timber, not vested (Figure 36).

The Darling Scarp vegetation, which is inadequately represented elsewhere, is the significant feature of the Reserve. The vegetation ranges from open-forest of jarrah and marri on lateritic soils, to low open-woodland of wandoo with admixtures of marri and the rare buttergum, to heath and herbland on the granite outcrops. The Reserve contains substantial stands of buttergum.

The Reserve also has a landscape and recreation value because of its location on the Scarp.

Because of the area's high conservation and recreation value and its location, it contributes to open space of regional significance extending along the Darling Scarp (see Figure 1, Chapter 4).

Recommendations:

- C48.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C48.2 That the purpose of Reserve C19413 be amended to Conservation of Flora and Fauna, and Recreation, and that the Reserve be vested in the Conservator of Forests.

C49 RESERVE C21038, NORTH DANDALUP

The recommended area is situated about 3km east of the North Dandalup townsite and comprises Reserve C21038, for Parklands and Recreation, not vested (Figure 36).

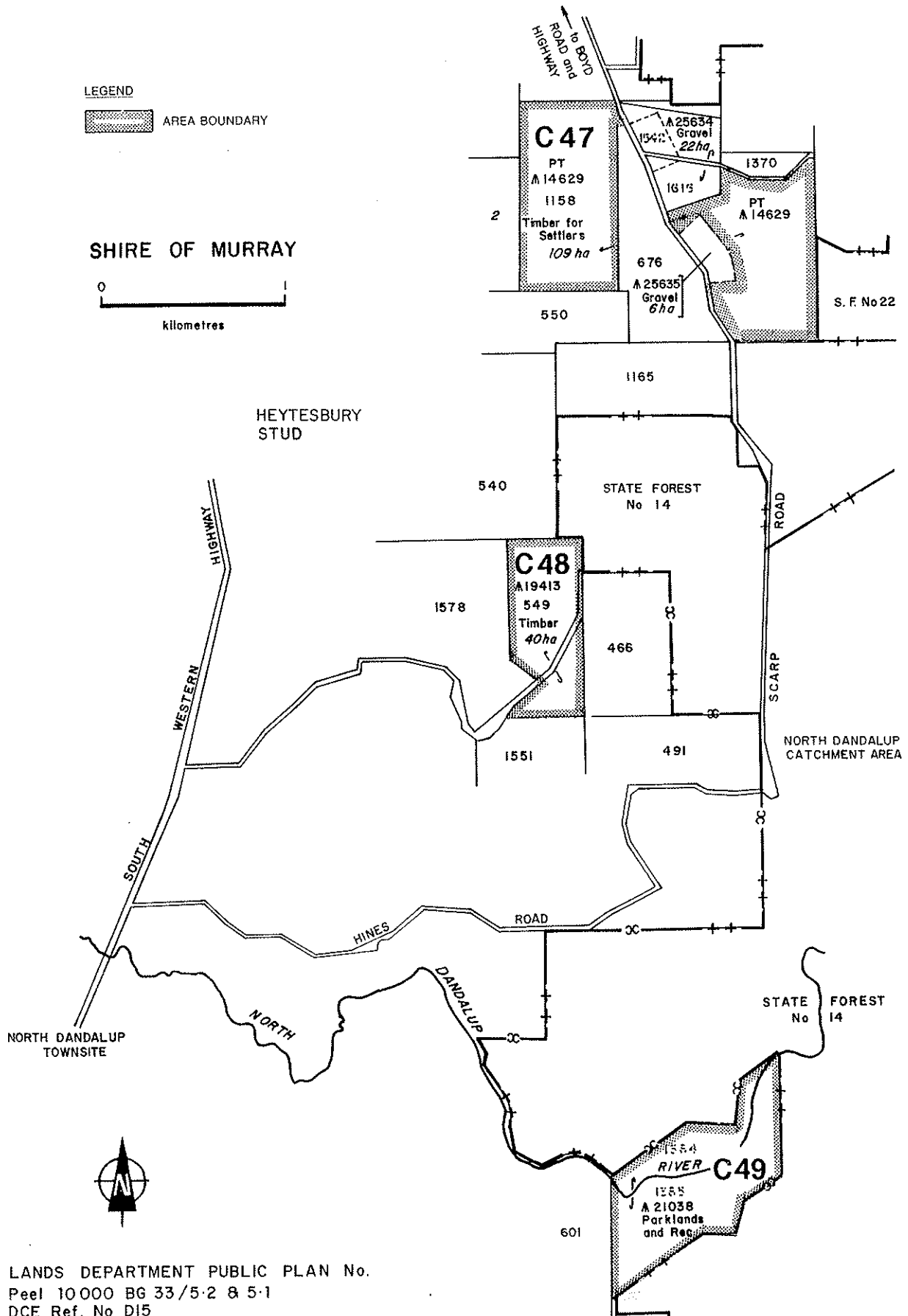
The Metropolitan Water Authority has proposed the construction in about 1989 of the North Dandalup Dam, part of which will affect the north-east portion of the Reserve. This proposal is subject to an Environmental Review and Management Programme. There is an existing MWA pipehead dam in the north-east portion of the Reserve and a pipeline between the dam and the Reserve's western boundary.

The Darling Scarp vegetation, which is inadequately represented elsewhere, is the significant feature of the Reserve. The vegetation ranges from open-forest of jarrah and marri on lateritic soils, to low open-woodland of wandoo with admixtures of marri and the rare butter gum, to heath and herbland on the granite outcrops. The Reserve contains substantial stands of butter gum.

The recommended area contributes to open space of regional significance along the Darling Scarp (see Figure 1, Chapter 4) because of its high conservation value. An important management consideration is that the existing and proposed MWA works should not detract from the conservation value of the Reserve.

Recommendations:

- C49.1 That our general recommendations on the planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C49.2 That the purpose of Reserve C21038 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority for a limited term of 10 years (see Recommendations 7-12 inclus., Chapter 3), to be managed in consultation with the Metropolitan Water Authority under a published management plan.



LANDS DEPARTMENT PUBLIC PLAN No.
 Peel 10000 BG 33/5.2 & 5.1
 DCE Ref. No D15

Figure 36

C50 PEEL INLET

The recommended area is situated due south of Mandurah and comprises Reserves B4990 and B24036, for Conservation of Flora and Fauna, and C28087, for Conservation of Fauna, all vested in the W.A. Wildlife Authority; Reserve C8185, for Recreation, vested in the Shire of Mandurah; Reserve C2707, for Public Utility and Conservation of Flora and Fauna, and C7502, for Water, both not vested; portions of the Peel Inlet surrounding Reserve C8185, to the north of Reserve C28087 and west of Reserve B4990, and in the entrance to the Inlet; and Coolup A.A. lots 223, 259, 276 to 278, Murray Locations 55, 295, 452, 842 and 1262, and part of Cockburn Sound Locations 5 and 16, all privately owned freehold land (Figure 37).

Housing developments, a proposed canal development and some recreational activities may affect the area's conservation value.

The Environmental Review and Management Programme for the proposed canal development at the south-eastern end of the inlet channel has been approved by the Environmental Protection Authority and has resulted in amended boundaries for the recommended area: the foreshore portion is smaller than that proposed in the System 6 "Green Book", and a new area has been included around Soldiers Cove. The area will be affected by the Mandurah By-Pass Road bridge, which is due to be built north of Channel and Creery Islands. There are PWD drains in the south-east of Peel Inlet.

The area is discussed in the Peel Inlet Management Authority's Management Programme, the Mandurah and Districts Planning Study, and the Peel-Harvey Estuary Study which includes a focus on its water catchment area and involves the study of the cause of the algal growth problem together with possible solutions.

The Peel-Harvey Estuary is probably the most important estuary in south-western Australia as a conservation area for water-birds. It has by far the largest pelican population in the region. The estuary also supports large populations of water-fowl such as grey teal; black swans are abundant; and many thousands of resident and migratory waders inhabit the area. Unusual species recorded include glossy ibis, yellow-billed spoonbill and royal spoonbill.

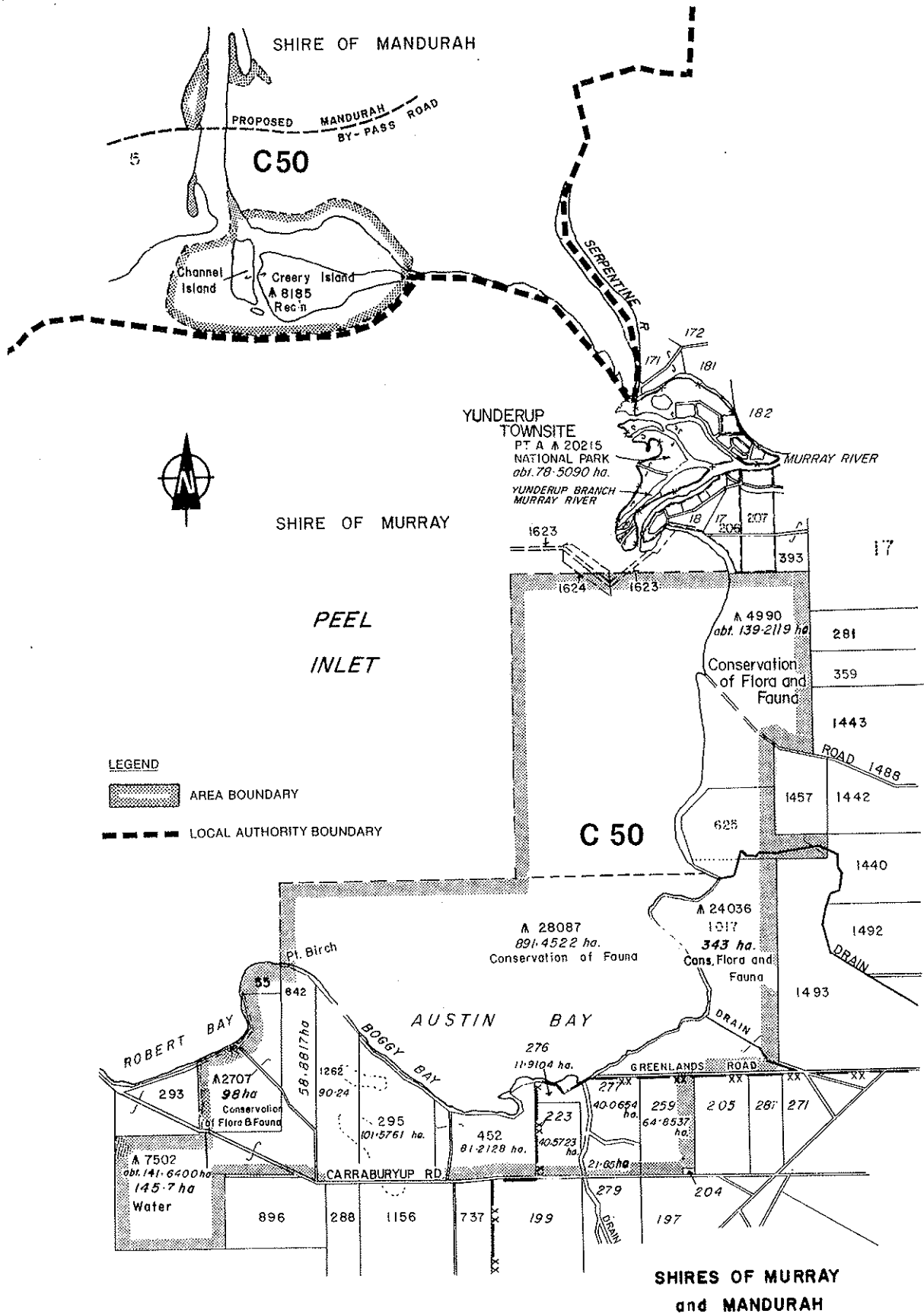
The most important areas as water-bird habitats are the extensive shallows around the southern and eastern shores and the tidal flats and shallows around Channel and Creery Islands. The shore areas in the north of Peel Inlet and bordering the main channel contain samphire flats and marshes important for eastern curlews and whimbrels, and this is one of the few places in the South-West where they can always be seen.

The Peel-Harvey Estuary provides an important nursery area for commercial species of fish such as sea mullet, yellow-eye mullet, cobbler and King George whiting.

The recommended area, together with Harvey Estuary (C51), Lakes McLarty and Mealup (C52), Yalgorup National Park (C54), Clifton MPA (C55) and McLarty MPA (C56), which includes privately owned freehold land, Land Act reserves (including a National Park) and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various land tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure of the area, together with that of C51, C52, C54, C55 and C56, requires coordination.

Recommendations:

- C50.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C50.2 That the purpose of Reserve C8185 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C50.3 That the area of water surrounding Reserve C8185 at the entrance to Peel Inlet (as shown in Figure 37) be declared an Aquatic Reserve and vested in the W.A. Wildlife Authority.
- C50.4 That Reserves B24036, C2707 and C7502 be cancelled and their respective areas added to Reserve B4990.
- C50.5 That the area of water to the west of Reserve B4990 (as shown in Figure 37) be declared an Aquatic Reserve and vested in the W.A. Wildlife Authority.
- C50.6 That, subject to Recommendation C50.5 being implemented, Reserve C28087 be cancelled and its land area added to Reserve B4990.



LANDS DEPARTMENT PUBLIC PLAN No.
 380 A/40 & 380 D/40
 DCE Ref. No H4(1,2,3 & 4)

Figure 37

C51 HARVEY ESTUARY

The recommended area is situated to the east of the Old Coast Road, south of Mandurah, and comprises Reserve A23756, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; Reserve A31922, for Recreation, vested in the Shire of Murray; Reserve C2990, for Recreation and Camping, vested in the Mandurah Road Board; Reserves C36126, for Drainage and Conservation of Flora and Fauna, and C860, for Water, both vested in the Minister for Water Resources; Reserve C2758, for Recreation, Reserve C17318, for Public Utility, and part of Reserves C15028 and C25391, both for Drainage, all not vested; the southern portion of the Harvey Estuary; and Murray Locations 77, 733, 1209, 1275, 1496, 2320, 2986 and parts of Murray Locations 437, 479, 613, 720 and 793, all privately owned freehold land (Figure 38).

The recommended area comes under the Peel Inlet Management Authority's Management Programme, the Mandurah and Districts Planning Study, and the Peel-Harvey Estuary Study which involves the examination of its water catchment area and the cause of the algal growth problem along with possible solutions.

The area provides one of the most important water-bird habitats in south-western Australia. The waters south of Herron Point support large numbers of grey teal, black duck, black swan, red-necked avocet, crested grebe and yellow-billed spoonbill. The delta of the Harvey River is important in late summer, when thousands of ducks congregate on its banks.

Reserve A23756, comprising a large area on the eastern side of Harvey Estuary, supports woodland and open-woodland of jarrah, marri, bull banksia and slender banksia, with some peppermint and Christmas tree. Several low-lying swampy areas contain low woodland of swamp banksia and Moonah paperbark. The vegetation of Reserve A31922 ranges from low open-forest to low open-woodland and is dominated by slender banksia with a mixture of sheoak, bull banksia, Christmas tree, marri and Moonah paperbark. Reserves C2990 and C860 are situated on the western side of the Estuary and are characterised by tall woodland and open-forest of tuart.

The Estuary provides an important nursery area for commercial species of fish such as sea mullet, cobbler and King George whiting.

The recommended area, together with Peel Inlet (C50), Lakes McLarty and Mealup (C52), Yalgorup National Park (C54), Clifton MPA (C55), and McLarty MPA (C56), which includes privately owned freehold land, Land Act reserves (including a National Park) and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C50, C52 and C54-C56, requires coordination.

Recommendations:

- C51.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C51.2 That the southern portion of Reserve C2990 (see Figure 38) be excised, and that this portion be made a separate Reserve for Conservation of Flora and Fauna, and that the Reserve be vested in the W.A. Wildlife Authority.
- C51.3 That the area of Harvey Estuary south of "Ford" (as shown in Figure 38) be declared an Aquatic Reserve and that the Reserve be vested in the W.A. Wildlife Authority.
- C51.4 That the purpose of Reserve C860 be amended to Parkland and that the Reserve be vested in the Shire of Mandurah.
- C51.5 That the purpose of Reserve C27528 be amended to Parkland and that the Reserve be vested in the Shire of Murray.
- C51.6 That the purpose of Reserve C17318 be amended to Parkland and that the Reserve be vested in the W.A. Wildlife Authority.

C52 LAKES McLARTY AND MEALUP

The recommended area is situated on the eastern side of the Harvey Estuary, about 16km south-west of Pinjarra, and comprises Reserve A24739, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; Reserve C6627, for Watering Place for Stock, not vested; vacant Crown land; Murray Locations 252, 306, 349, 427, 430, 431 and 504, and parts of Murray Locations 350, 605, 699, 730, 750, 1154 and 1155, privately owned freehold land (Figure 38).

In some summers Lake McLarty dries up, possibly because of a drain leading from the southern edge into Harvey Estuary, and negotiations to close the drain are being conducted between the Department of Fisheries and Wildlife and the land owner.

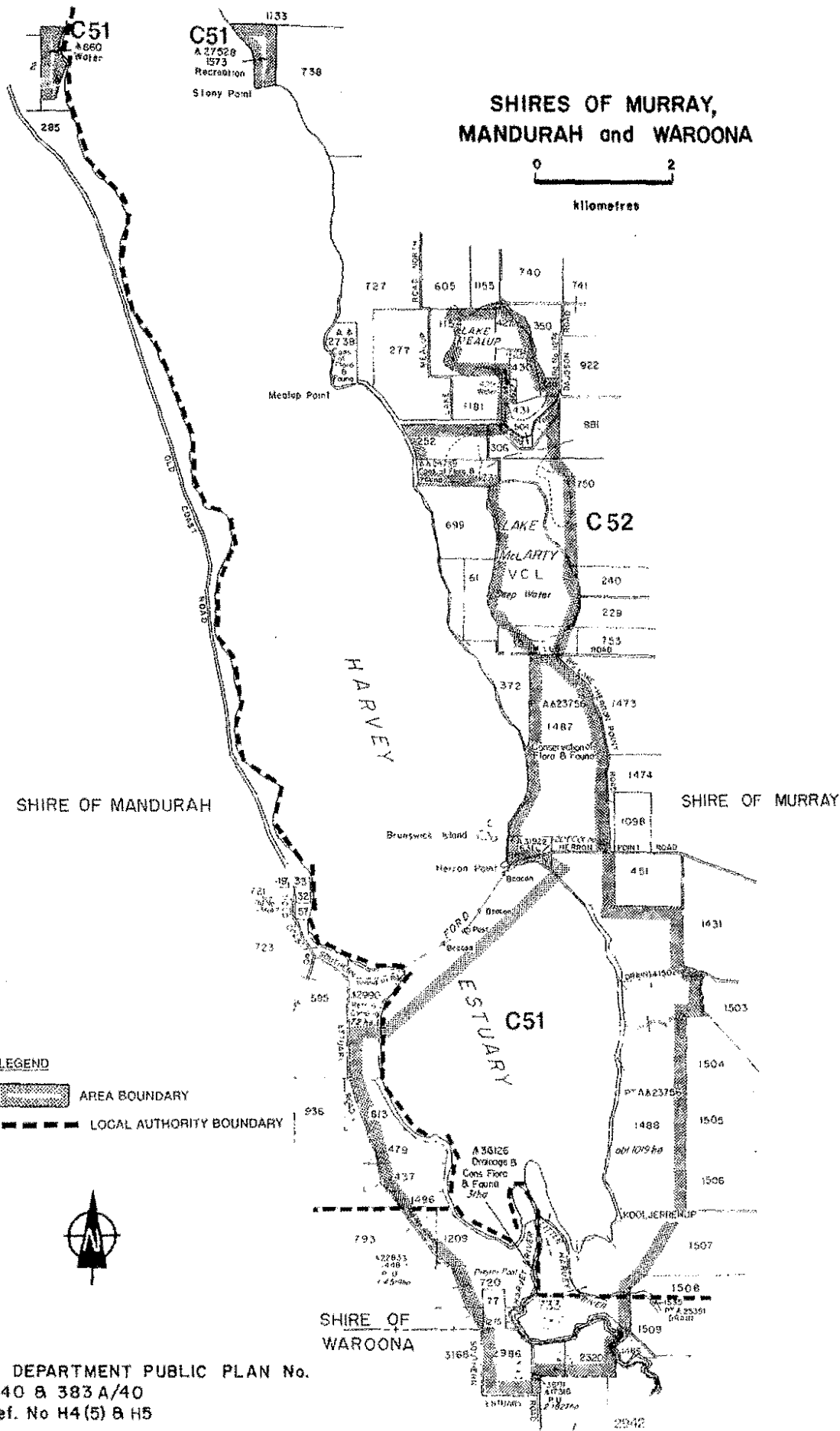
Lake McLarty comes under the Peel Inlet Management Authority's Management Programme and both lakes come under the Mandurah and Districts Planning Study. The lakes provide fresh water in summer for the birds of Peel Inlet and Harvey Estuary and support a resident bird population. The bed of Lake McLarty supports extensive areas of sedge which are important for breeding swans and other water-birds.

Reserve A24739 contains, along the shore, a belt of low woodland of paperbark. Most of the reserve contains low woodland of jarrah, banksia, sheoak and Christmas tree, with some low-lying areas containing flooded gum and spearwood. A rare species occurs in the form of the heath *Brachyloma preissii*.

The recommended area, together with Peel Inlet (C50), Harvey Estuary (C51), Yalgorup National Park (C54), Clifton MPA (C55) and McLarty MPA (C56), which includes privately owned freehold land, Land Act reserves (including a National Park), and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C50, C51 and C54-C56, requires coordination.

Recommendations:

- C52.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C52.2 That the vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C52.3 That Reserve C6627 be cancelled and its area added to Reserve A24739.



LANDS DEPARTMENT PUBLIC PLAN No.
380D/40 & 383 A/40
DCE Ref. No H4 (5) & H5

Figure 38

C53 COOLUP RESERVES

The recommended area is situated adjacent to the South Western Highway, about 12km south of Pinjarra, and comprises Reserves A20585, for Stopping Place, C31437, for Government Requirements, C31438, for Camping, and C31439, for Drainage, all not vested (Figure 39).

The area could be affected by future improvements of South Western Highway which may require additional land.

The area is almost flat, with a few shallow depressions which become wet in winter. It carries low woodland and open-woodland of marri and jarrah. There are several populations of black gin. The depressions carry closed to open-heath dominated by swamp tea-tree and *Hakea ceratophylla*. These Reserves are important because they contain the only uncleared land between Pinjarra and Waroona. They also carry the only vegetation of its type along the South Western Highway, and so are valuable for tourists.

Recommendations:

- C53.1 That the purpose of Reserve A20585 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C53.2 That Reserves C31437, C31438 and C31439 be cancelled and their respective areas amalgamated to form a single Reserve for Roadside Verge Conservation, and that the Reserve be vested in the Shire of Waroona.
- C53.3 That any management plan for Reserves C31437, C31438 and C31439 be prepared in consultation with the Department of Fisheries and Wildlife.

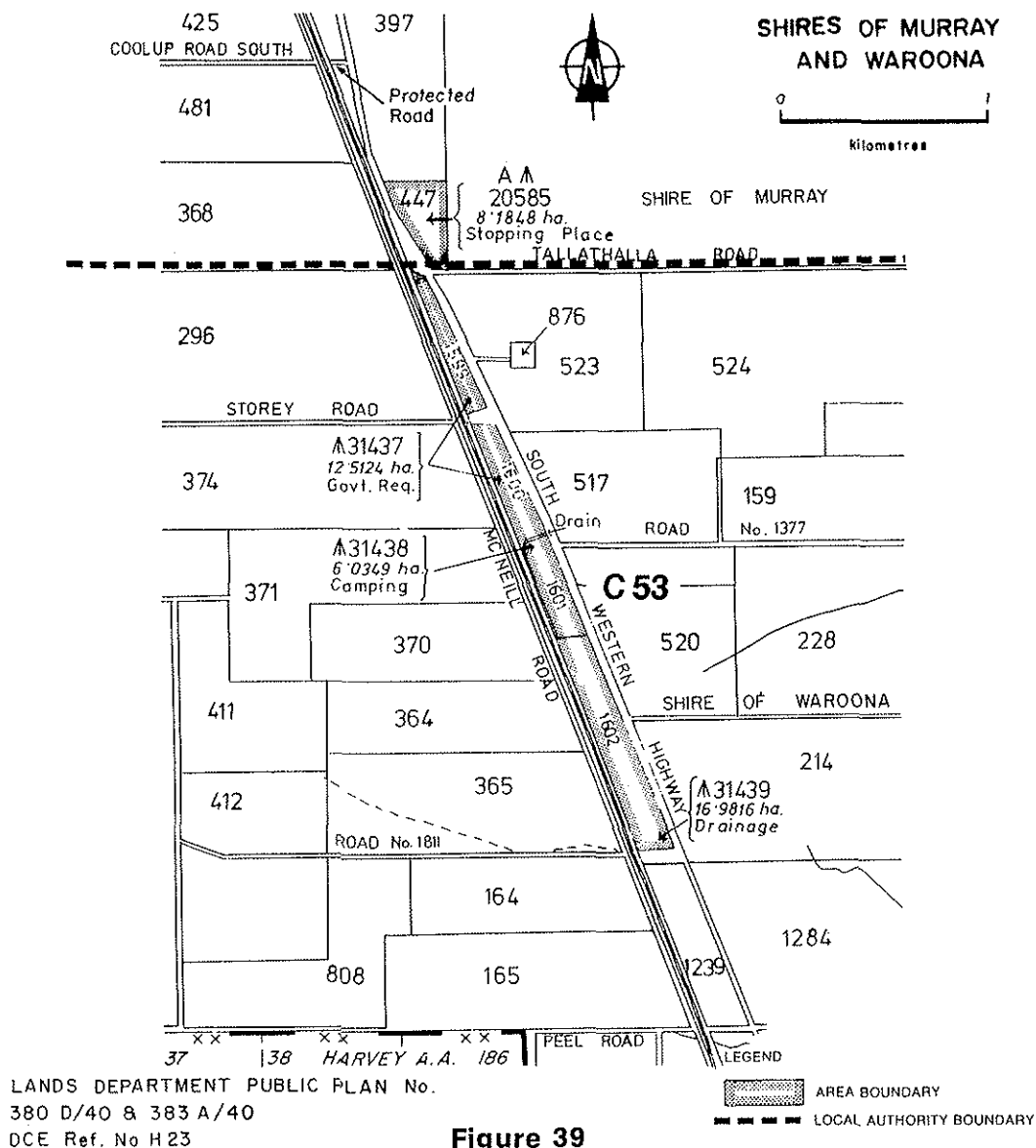


Figure 39

C54 YALGORUP NATIONAL PARK

The recommended area is situated west and south-west of Harvey Estuary and comprises Reserves A11710, A12189, A22057, and C21271, all for National Park, vested in the National Parks Authority; Reserves C28796, C33285 and C33843, all for Public Recreation, not vested; Reserve C32261, for Recreation, not vested; and Reserve C24198, for Camping and Recreation, vested in the Shire of Mandurah (Figures 40A and 40B).

The Park is subject to a number of pressures:

- (i) Grazing of livestock extends to the shores of Lake Preston and is damaging the margins of the lake.
- (ii) There is considerable recreational activity in the coastal area near White Hill and Tims Thicket and on the southern end of Lake Preston, which is used for water skiing.
- (iii) PWD groundwater extraction may affect water levels in the area.
- (iv) There is a proposal for a power station to be sited near the coast to the north and west of Lake Clifton which could involve an area of approximately 200ha, associated with a 2km buffer reserve, access roads and powerlines.
- (v) The area may be affected by a future highway between Perth and Bunbury and by widening of the Old Coast Road.
- (vi) The MRD is interested in obtaining limestone from Reserves C24198 and C21271.
- (vii) Mandurah Shire Council proposes to develop a marina and other recreation facilities at Reserve C24198.
- (viii) Waroona Shire Council has proposed that a reserve be set aside within Lake Preston for extraction of salt for stock use by local farmers.
- (ix) The Mandurah Shire Council's Town Planning Scheme No. 11 may affect land exchanges involving Reserve A11710 immediately south of White Hill Road along the Old Coast Road.

Yalgorup National Park includes Lakes Clifton and Preston. It contains vegetation types which are poorly represented in conservation reserves. Woodland of tuart is the commonest vegetation in the Park, with wattle and peppermint in the understorey. In some areas slender banksia, bull banksia and sheoak are prominent as are jarrah and marri in the north-eastern section of the Park. Closed-forest of paperbark fringes the lakes and a small stand of Rottnest tea-tree, which is rare on the mainland, occurs on an island in Lake Preston. Reserve C24198 (Tims Thicket) contains vegetation ranging from open-heath to tall open-woodland of tuart and peppermint and is notable for an occurrence of Fremantle mallee, which is rare in System 6. The Reserve includes part of an interesting geomorphological complex which is worthy of conservation. The area supports grey kangaroo, emu and brush wallaby, and a diverse bird population.

The area has considerable recreational value because of the lakes, its proximity to the coast and its accessibility.

The recommended area, together with Peel Inlet (C50), Harvey Estuary (C51), Lakes McLarty and Mealup (C52), Clifton MPA (C55) and McLarty MPA (C56), which includes privately owned freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C50-C52, C55 and C56, requires coordination.

Recommendations:

- C54.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C54.2 That Reserves C28796, C32261, C33285 and C33843 be cancelled and their respective areas added to Reserve A11710.

C55 CLIFTON MANAGEMENT PRIORITY AREA

The recommended area is situated about 25km south of Mandurah and comprises State Forest, being Clifton Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 40A).

The area may be affected by widening of the Old Coast Road and a future highway between Perth and Bunbury.

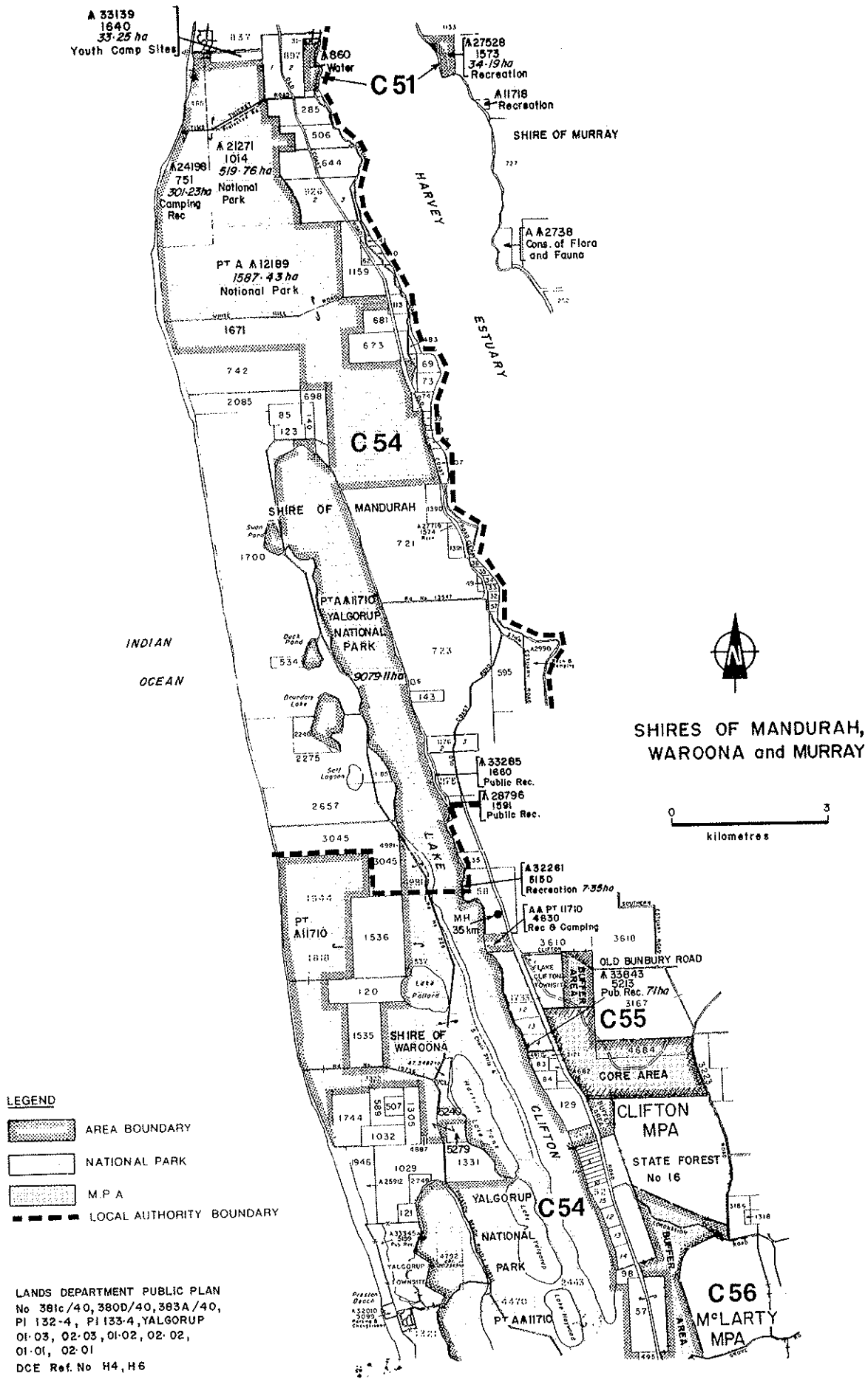


Figure 40A

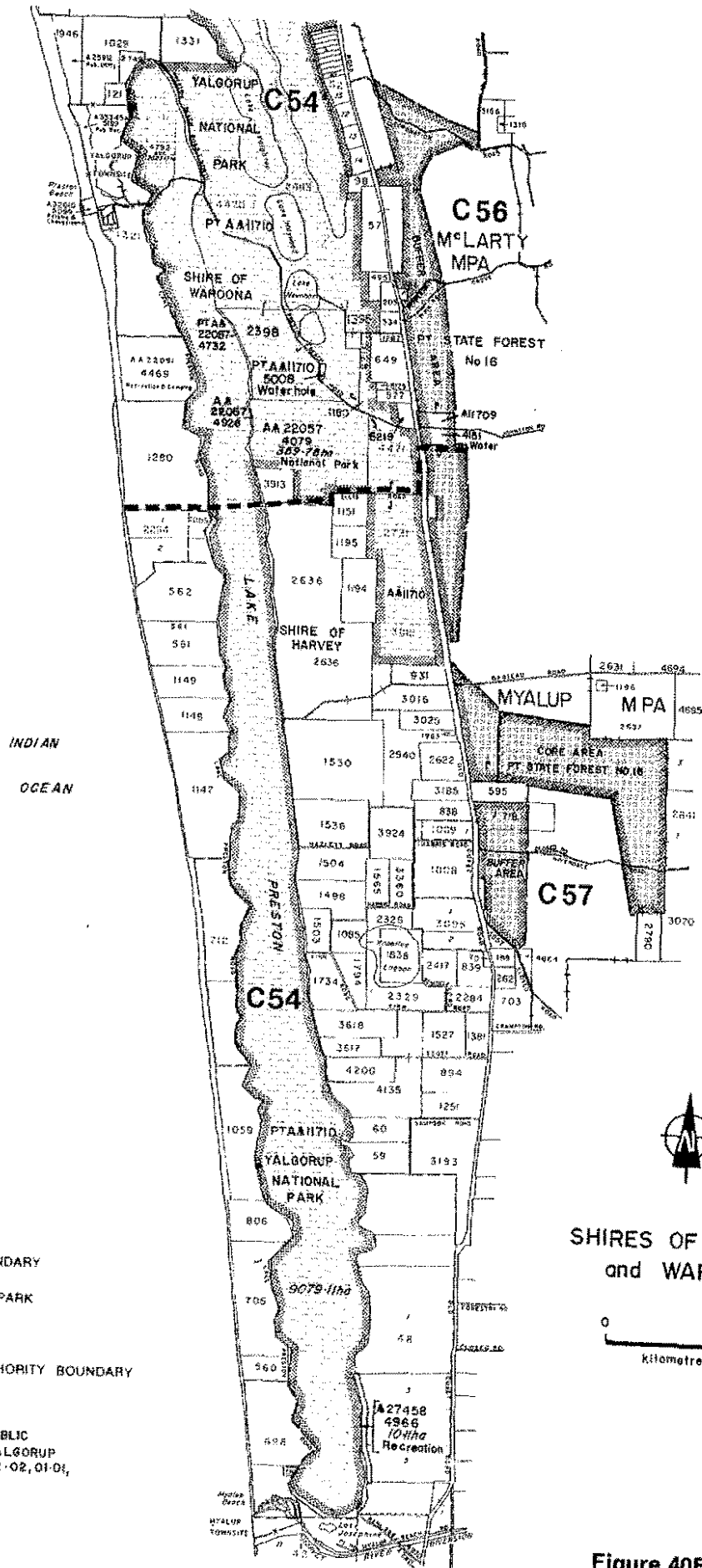


Figure 40B

The MPA contains forest types which are being progressively cleared on the Coastal Plain. Shallower sands overlying limestone carry open-forest of tuart with an understorey of peppermint, while deeper sands carry a mixture of jarrah and slender banksia. There are few extensive stands of tuart and peppermint available for reservation elsewhere in System 6. Also important is the occurrence of woody pear and the fact that the MPA is located alongside the Old Coast Road (a popular tourist route).

The recommended area, together with Peel Inlet (C50), Harvey Estuary (C51), Lakes McLarty and Mealup (C52), Yalgorup National Park (C54), and McLarty MPA (C56), which includes privately owned freehold land, Land Act reserves (including a National Park), and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C50-C52, C54 and C56, requires coordination.

Recommendations:

- C55.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C55.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Clifton MPA.

C56 McLARTY MANAGEMENT PRIORITY AREA

The recommended area is situated between 35km and 45km south of Mandurah on the eastern side of the Old Coast Road and comprises State Forest, being McLarty Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area is Reserve C11709 for Water, not vested, which bisects the southernmost buffer of the MPA (Figure 40B).

The area is subject to a number of pressures:

- (i) The southern portion of the locality has potential for high grade limestone.
- (ii) The Shire of Waroona holds a limestone lease of approximately 3ha to the north of Reserve C11709 and wishes to continue extraction.
- (iii) The Shire of Waroona has also requested that it be given vesting of a 2ha portion of the Reserve itself for the purpose of Sand Pit/Refuse Disposal Site.
- (iv) The MRD has made application for exploratory boring in Reserve C11709.
- (v) The MPA may be affected by widening of the Old Coast Road and construction of a highway between Perth and Bunbury.
- (vi) Dieback spread is likely to be increased if vehicle access is not limited to parking areas off the Old Coast Road.

McLarty MPA comprises a long narrow strip of land containing open-forest of tuart with an understorey of peppermint.

McLarty MPA helps to complement nearby disjointed areas of tuart-peppermint forest contained in Yalgorup National Park, Clifton MPA and Myalup MPA. Together, these areas make up the only extensive stands of tuart and peppermint available for reservation in System 6.

The MPA is also important for its tourist value because much of it lies adjacent to the Old Coast Road (a significant tourist route) and it provides a visual barrier between the road and pine plantations.

The recommended area, together with Peel Inlet (C50), Harvey Estuary (C51), Lakes McLarty and Mealup (C52), Yalgorup National Park (C54), and Clifton MPA (C55), which includes privately owned freehold land, Land Act reserves (including a National Park), and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C50-C52, C54 and C55, requires coordination.

Recommendations:

- C56.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

- C56.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to McLarty MPA.
- C56.3 That Reserve C11709 be cancelled and its area added to State Forest to be managed as part of McLarty MPA.

C57 MYALUP MANAGEMENT PRIORITY AREA

The recommended area is situated about 35km south of Mandurah and comprises State Forest, being Myalup Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 40B).

The western half of the MPA has potential for high grade limestone. The MPA may be affected by widening of the Old Coast Road and by a future highway between Perth and Bunbury.

Myalup MPA conserves a range of vegetation types: the western portion contains open-forest of tuart and jarrah while the eastern portion contains a swampy area dominated by paperbarks. The MPA is important as it provides a corridor for the migration of fauna between Yalgorup National Park and a system of swamps to the east on the Wellesley River flats.

The area's location alongside the Old Coast Road, an important tourist route, makes it of additional significance.

Recommendation:

- C57.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Myalup MPA.

C58 RESERVE A23172, HARVEY RIVER

The recommended area is situated adjacent to the Harvey River, approximately half way between Waroona and the coast and about 40km south of Mandurah, and comprises Reserve A23172, for Camping, vested in the Shire of Waroona (Figure 41).

The northern part of the Reserve has been cleared. In the southern section, near the river, there is woodland of marri, jarrah and paperbark. The understorey has mostly been replaced by grasses. Further from the river the woodland also contains Christmas tree and banksia. The understorey is dense, and includes spearwood, stinkwood and pixie mops. An area on the north side of the Reserve carries closed-heath on grey sandy clay but is dominated by paperbark, associated with swishbush, swamp cypress and *Hakea varia*. This is an unusual association of plants.

Important management considerations for the area include: retaining areas of natural vegetation, with camping catered for on the grasses near the river. There are two other local Reserves, C13987 and C22545, for Camping, which can take some pressure off Reserve A23172.

Recommendation:

- C58.1 That the Waroona Shire Council, in consultation with the Department of Conservation and Environment and the Peel Inlet Management Authority, prepare a management plan for the Reserve.

C59 RESERVE C22199, WAGERUP

The recommended area is situated 7km south-west of Wagerup, and comprises Reserve C22199, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 41).

The Reserve which contains grey sandy soils, is the only large area of its type between Mandurah and Bunbury. It carries woodland of jarrah, marri, bull banksia and sheoak. The understorey is fairly dense, and includes blackboy, zamia, spearwood, Swan River myrtle, pepper and salt and blueboy. In the centre of the Reserve there is a small swamp which is apparently semi-permanent.

Recommendation:

- C59.1 That Reserve C22199 be classified as Class A.

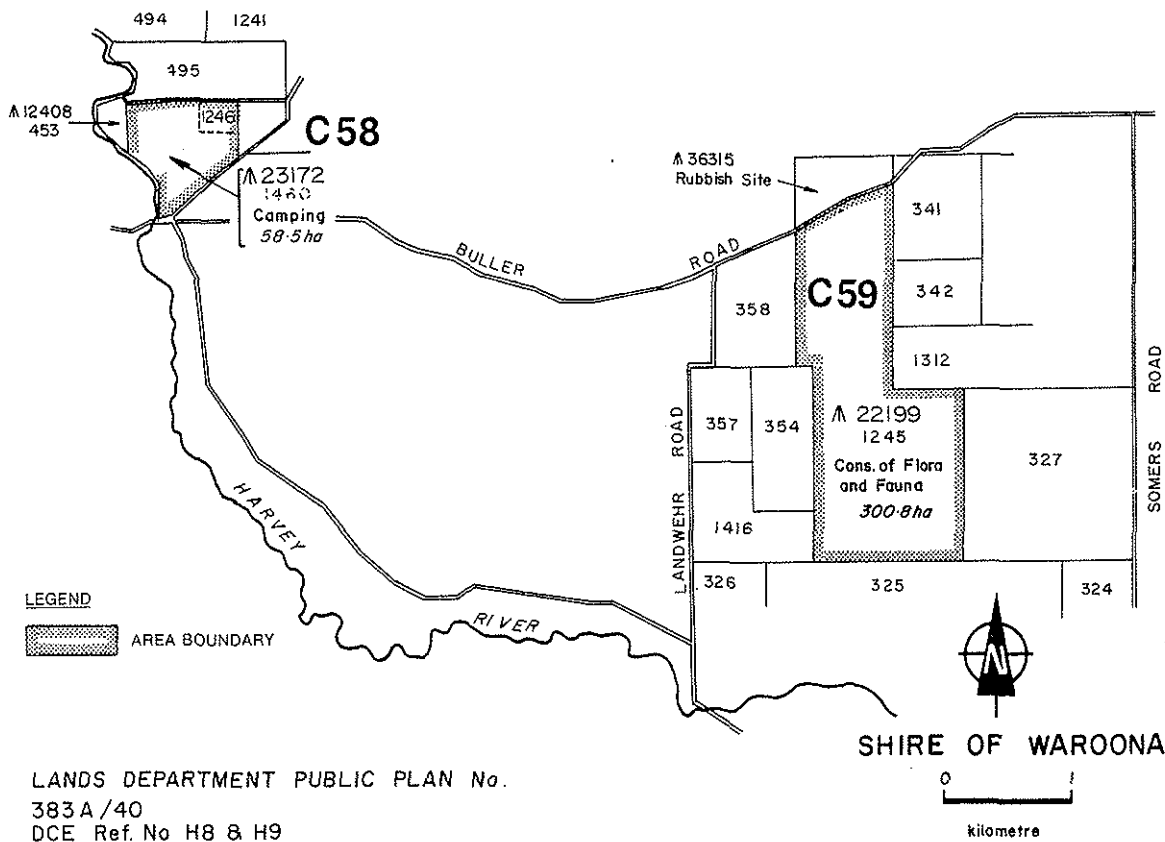


Figure 41

C60 RESERVES C12049 AND C12632, HARVEY

The recommended area is situated about 12km north-west of Harvey and comprises Reserves C12049 and C12632, both for Water and Conservation of Flora and Aquatic Life, both not vested (Figure 42).

Reserve C12049 represents the grey sands of the Coastal Plain. It includes a lake which usually contains water throughout the year. The lakeside vegetation is a low woodland of Moonah paperbark with a dense ground cover of sedges, including jointed twig rush, and the shrubs *Astartea fascicularis* and *Pultenaea reticulata*. Behind this there is open-forest, dominated by jarrah and banksia, with a dense understorey which includes *Adenanthos meissneri*, *Conostephium minus*, *Calytrix fraseri*, and *Anarthria prolifera*, a species which is otherwise found only on the south coast.

Reserve C12632 represents the grey sands and low-lying flats of clay and loam of the Coastal Plain. The flats support closed-heath, species including robin redbreast bush, white myrtle and paperbark. In some areas there are emergent trees and tall shrubs such as swamp paperbark, swishbush and spearwood. There are also sandy rises which carry low open-woodland of jarrah, Christmas tree and banksia. The vegetation is in good condition and should be preserved, particularly the heath vegetation which is unusual in both formation and composition.

Recommendation:

C60.1 That the purpose of Reserves C12049 and C12632 be amended to Conservation of Flora and Fauna, and Water, and that the Reserves be vested in the W.A. Wildlife Authority.

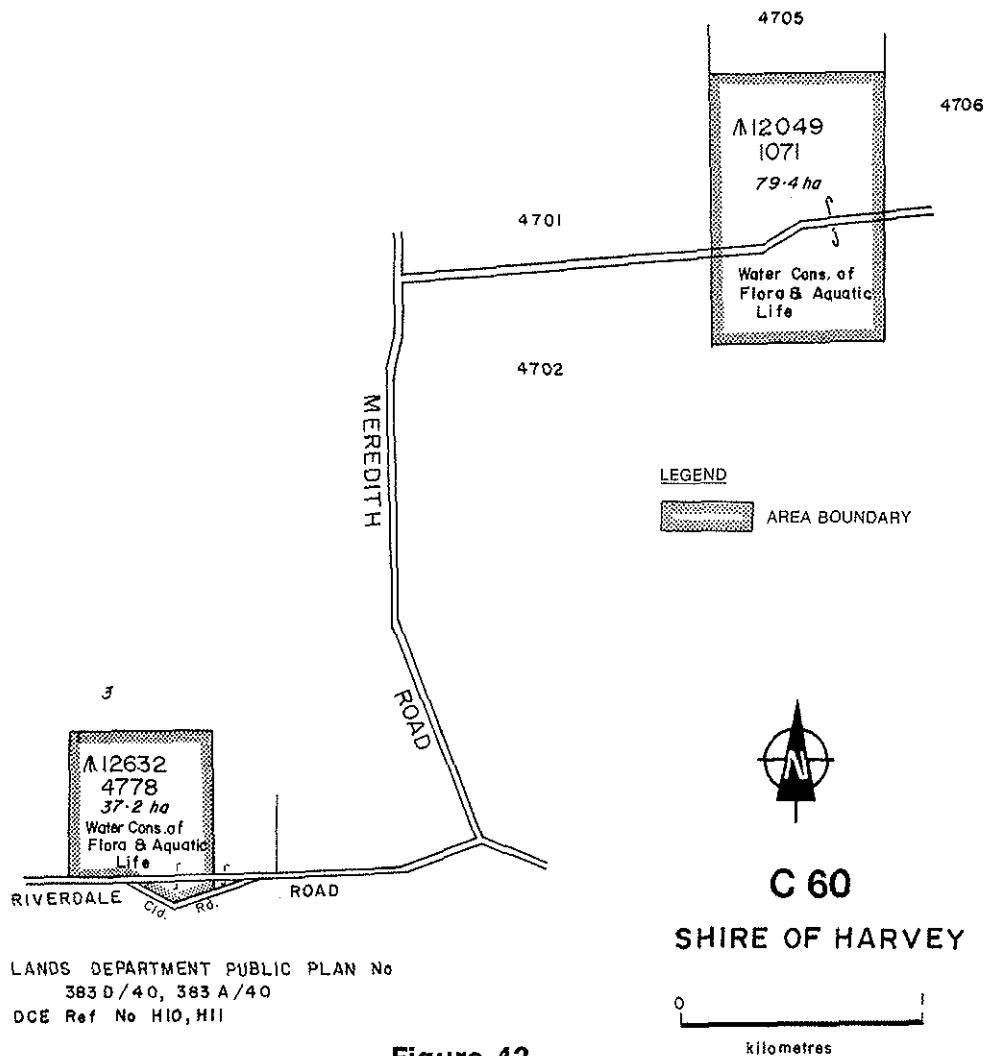


Figure 42

C61 RESERVE C24472, LAKE PRESTON

The recommended area is situated next to the Old Coast Road, about 3km east of Lake Preston, and comprises Reserve C24472, for the Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 43).

The Reserve represents the yellow sands of the Coastal Plain. It is fairly flat, and contains low closed to open-forest of jarrah, banksia and Christmas tree, with an understorey including *Hakea varia* and *Acacia stenoptera*. The vegetation is in good condition and is worth preserving.

Recommendation:

C61.1 That the present purpose and vesting of Reserve C24472 is endorsed.

C62 RESERVE C2547, HARVEY

The recommended area is situated about 8km west of Harvey and comprises Reserve C2547, for Public Utility, not vested (Figure 43).

There is a PWD drain on the southern boundary of the Reserve.

The Reserve is almost flat, and being low-lying, is partly under water in winter. It represents the poorly drained clay flats of the Coastal Plain. The vegetation is low open-woodland dominated by paperbark, peppermint, flooded gum and Christmas tree with tall shrubs such as spearwood and swishbush, and closed to open-heath of grey honeymyrtle, hakea, jacksonia, white myrtle, mountain kunzea and swamp tea-tree, as well as some sedge species. The vegetation is in good condition, and should be retained since it occurs in a region which is mostly freehold and cleared.

Recommendation:

C62.1 That the purpose of Reserve C2547 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

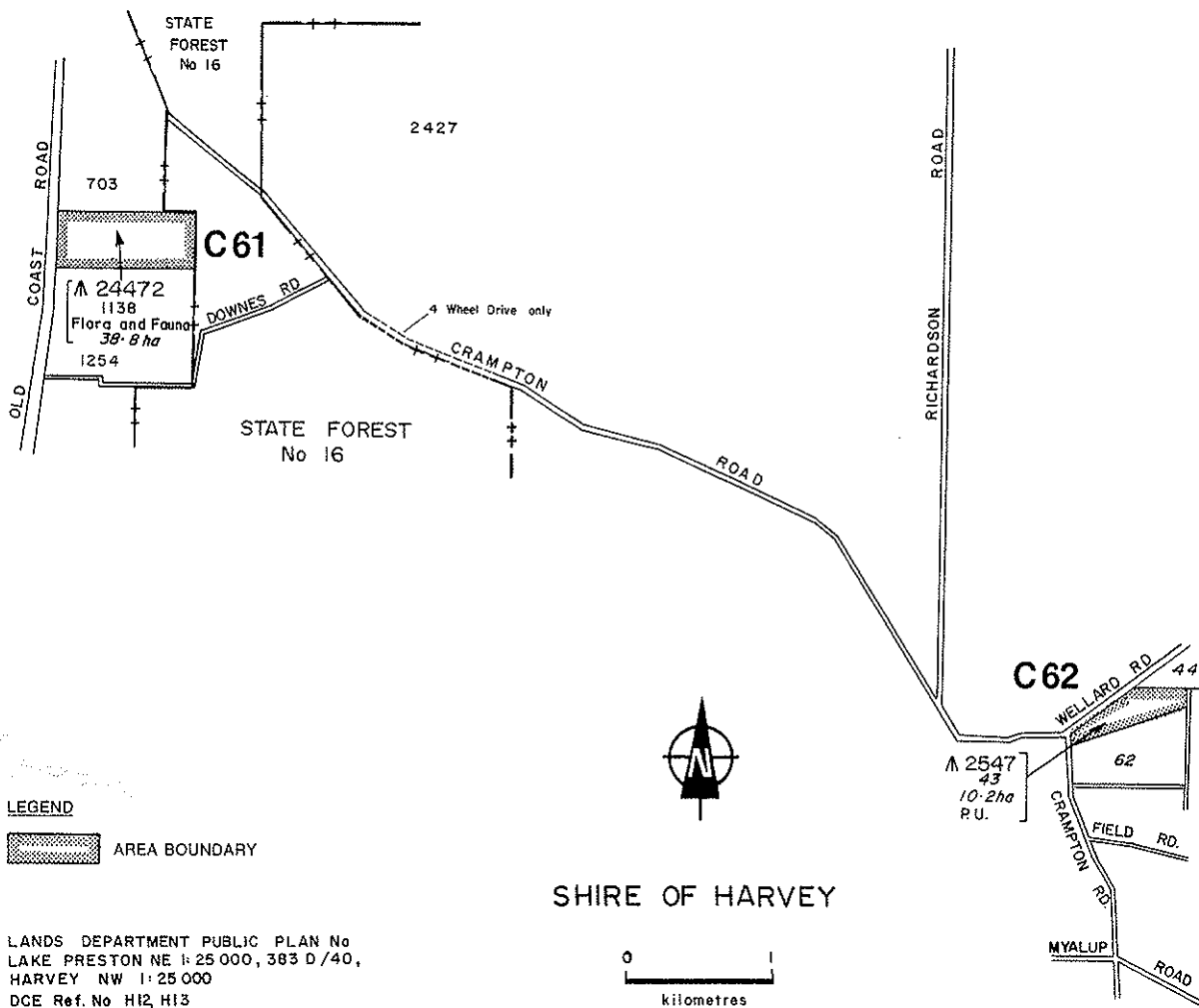


Figure 43

C63 MYALUP SWAMP AND MIALLA LAGOON

The recommended area is situated east of the Old Coast Road about 20km north-east of Bunbury and comprises parts of lots 1,3,4,8,12,17,20 and 21 (Wellington Location 1), part of lot 2 (Wellington Location 48), and other parts of Wellington Locations 48 and 1, all privately owned freehold land (Figure 44).

Myalup Swamp is drained and subject to controlled drainage. Mialla Lagoon is being pumped for drainage purposes. Lots 1 and 6 have been the subject of applications for drainage for agricultural use. The area may be affected by widening of the Old Coast Road and a highway planned between Perth and Bunbury.

The area, which provides essential fresh water for water-birds from Leschenault Inlet and Lake Preston, is essential to the feeding and living cycle for the birds and is an essential part of the Inlet water-bird haven.

Recommendation:

C63.1 That the Department of Fisheries and Wildlife investigate the area's value as a water-bird habitat, with a view to securing its protection through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

C64 RESERVE C2517, HARVEY

The recommended area is situated about 8km south-west of Harvey and comprises Reserve C2517, for Public Utility, not vested but currently leased for grazing (Figure 44).

The Reserve is bisected by Reserve C26999, which contains a PWD drain.

The Reserve contains a very good sample of low closed-heath with a few hectares of swamp paperbark. It is low lying and much of it is wet in winter. The heath contains four species of *Hakea* and three of *Melaleuca*; other shrubs are *Kunzea recurva* and *Astartea fascicularis*. This is an unusual association of species and worthy of conservation.

Recommendations:

C64.1 That the purpose of Reserve C2517 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

C64.2 That the lease on Reserve C2517 not be renewed.

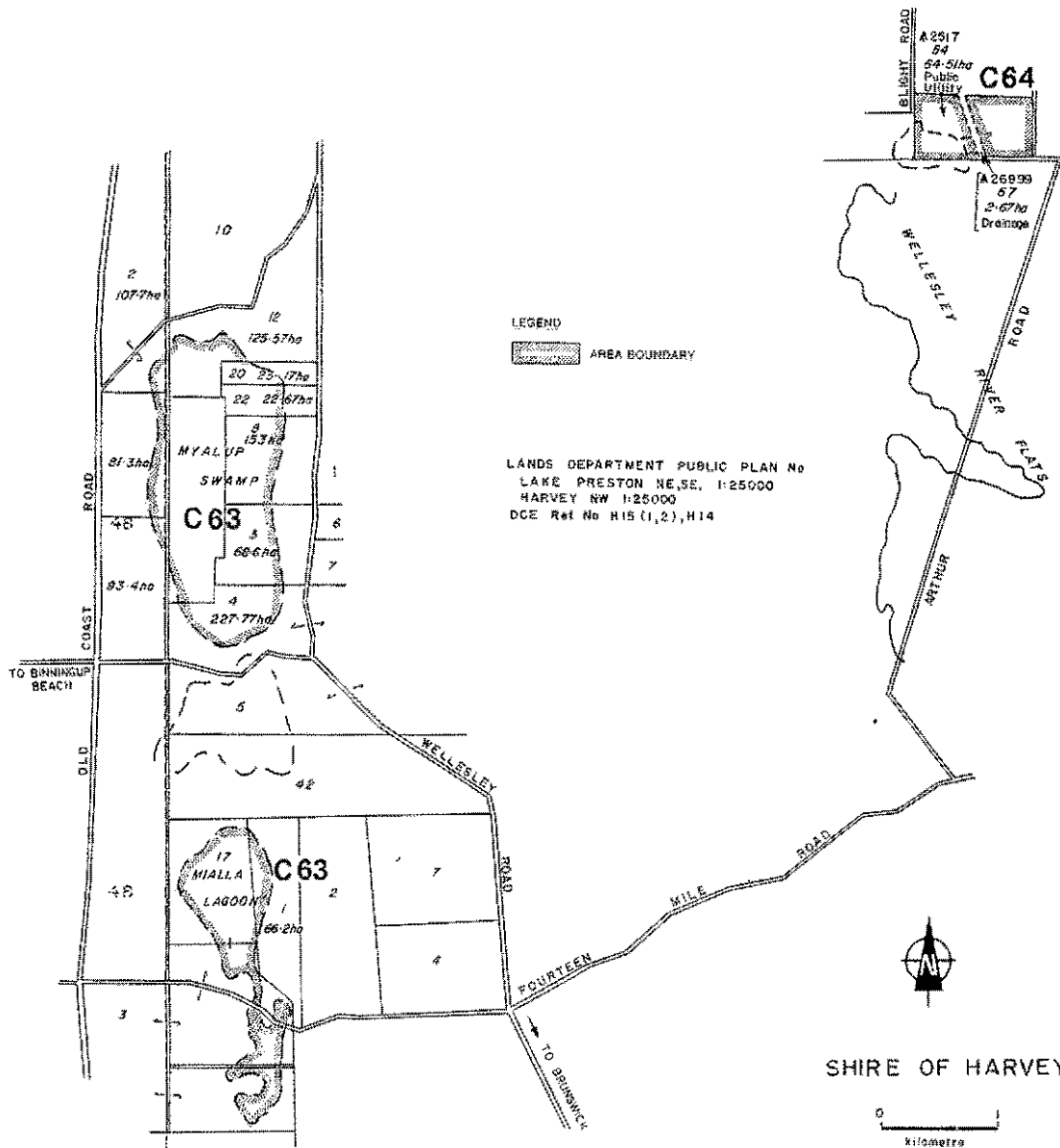


Figure 44

C65 BENGER SWAMP

The recommended area is situated just west of the South Western Highway, about 10km south of Harvey, and comprises Benger Swamp, approximately 90 per cent of which is owned by the Department of Fisheries and Wildlife, the remainder consisting of lots 5(E), 9(E), 10, 12, 12(W), 14(E), 18(W), 19,23,26,27 27(E), 28, 41(W), 42(E), 44(E), 52,59,66,68,69,71,72,74,80,104,105 of Wellington Location 1, privately owned freehold land; and Reserve C34811, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 45).

The Department of Fisheries and Wildlife has been progressively buying the land since 1973.

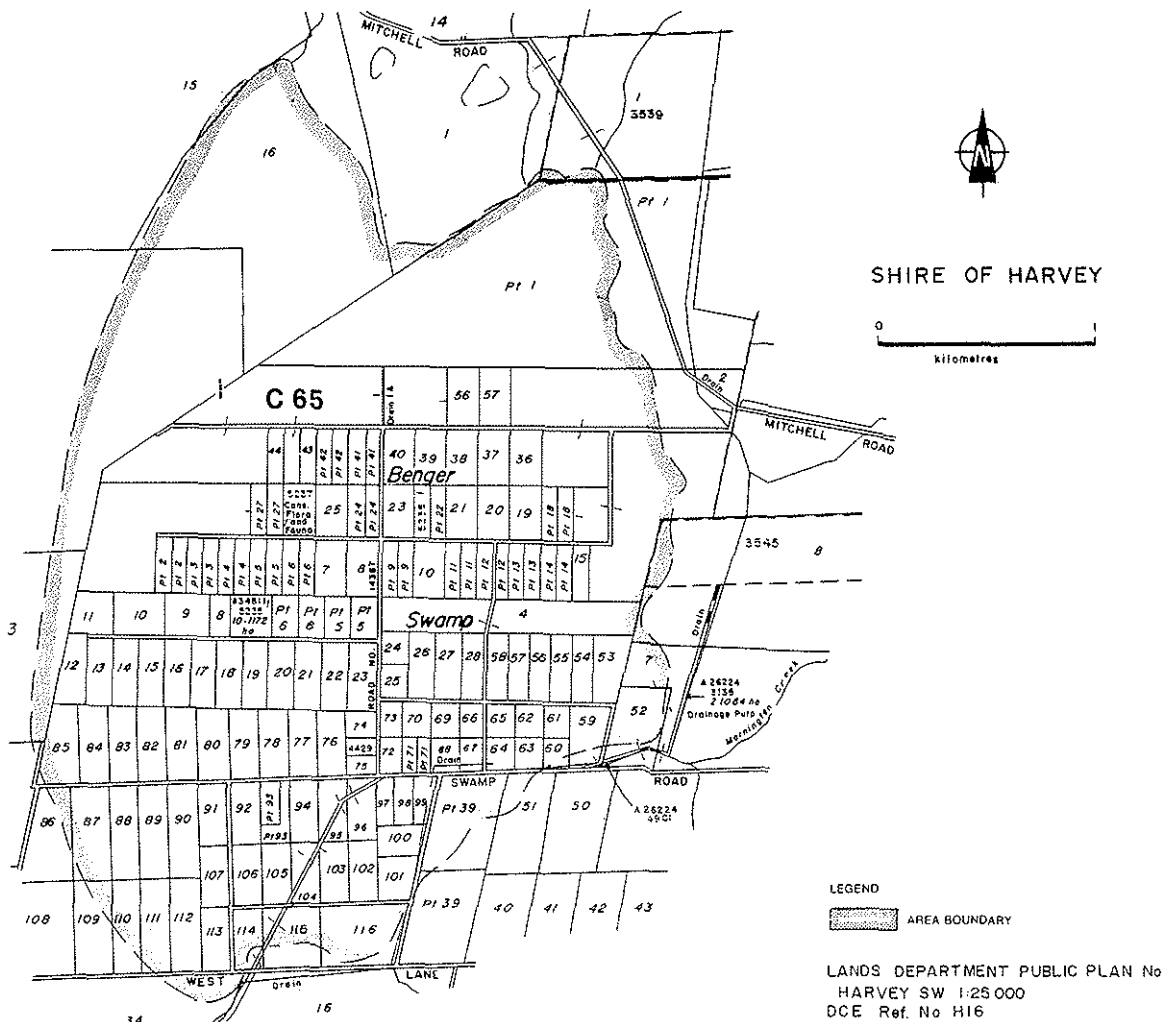
Benger Swamp is surrounded by stands of swamp paperbark, containing dodder-laurel, lesser bottlebrush and other species. There are wide tracts of closed-sedgelands of bulrushes, and some clumps of *Juncus pallidus*. The dominant water plants are *Lemna minor*, *Spirogyra*, and some *Myriophyllum* species. The swamp is a haven for water-birds, and many thousands use it as a drought refuge in early summer. The most common birds include Australian pelican, little pied cormorant and straw-necked ibis. The swamp is also one of the few known areas where one of the world's rarest water-fowl, the freckled duck, breeds and rears its young. Benger Swamp has a long tradition of use by naturalists, tourists and duck-shooters, and is known throughout Western Australia as a prime water-fowl habitat.

When all of Benger Swamp has been acquired the Department will manage it as a water-bird habitat, keeping a balance between open water and vegetated areas so as to accommodate as many species as possible, and allowing a longer period of flooding each year to increase its value as a drought refuge.

Recommendations:

C65.1 That Reserve C34811 be classified as Class A.

C65.2 That the land owned by the Department of Fisheries and Wildlife be added to Reserve C34811.



C66 LESCHENAULT INLET

The recommended area is situated between Australind and the Indian Ocean, a few kilometres north of Bunbury, and comprises Reserves A18414, for Stopping Place, not vested, and C13531, for Camping and Picnic Ground, vested in the City of Bunbury; vacant Crown land; a temporary Reserve; all of the Leschenault Inlet north from the mouth of the Collie River; lot 1 (part of Wellington Locations 18 and 24), lots 2, 3 and 4 (Wellington Location 24), and Wellington Locations 7, 14 and part of 22, all privately owned freehold land. Egret Swamp on the south-east side of the recommendation area is on land owned by Laporte Titanium (Australia) Pty. Ltd. The strip of land on the Inlet's east shore comprises a large number of small unvested recreation reserves and numerous small freehold lots, mostly owned by the Harvey Shire (Figure 46).

The whole area is under increasing pressure from urban development, recreation and industrial development. The area may also be affected in the future by underground pipelines and a widening of the Old Coast Road.

The area is dealt with by several regional studies including the Bunbury Region Study, the Leschenault Inlet Management Authority's Draft Management Programme and indirectly by the Mandurah and Districts Planning Study, all of which have yet to be finalised, and also the Laporte Factory Effluent Disposal report by the Laporte Effluent Disposal Committee.

The southern sector of Leschenault Peninsula has already been committed for long-term use by the Public Works Department as an area for industrial effluent disposal and currently contains disposal lagoons for acid/iron effluent, making public access to the area dangerous. The Laporte Effluent Disposal Committee has proposed a northward extension of the effluent disposal area along the Peninsula.

The Environmental Protection Authority in its report, "Evaluation of Disposal Options for Effluent from Laporte Titanium Dioxide Manufacturing Plant" (D.C.E. Bulletin No. 137, May 1983), has concluded that the Leschenault Peninsula, Inlet and offshore areas are of high conservation, recreation and commercial fishing value and that continued disposal, either under the existing practice or the Laporte Effluent Disposal Committee's proposed strategy, is environmentally undesirable. The Authority, as part of its Report recommendations has, in brief, recommended that the disposal of effluent be phased out as soon as a suitable alternative method is available; that an Environmental Review and Management Programme be produced on the chosen effluent disposal strategy; and that a detailed environmental management programme for rehabilitation and restoration of the Leschenault Peninsula be produced. The Leschenault Inlet Management Authority has also concluded that seepage of effluent from the Leschenault Peninsula could result in the degradation of the health of the estuary's biota and that continued disposal of highly acid waste on the dunes or into the aquifer adjacent to the Inlet is not in the interests of good estuarine management.

The Leschenault Peninsula contains a beach ridge system on the western side, mobile and fixed dunes over most of its surface, and predominantly vegetated dunes and woodland plains on its eastern side. Wind and wave erosion are prevalent and are dominant processes in developing the coastal geomorphology. For example, the coastal shoreline retreat is estimated to be in the region of one or more metres per year and the coastline can therefore be considered fragile. The quality of the groundwater under the Peninsula has been drastically affected by effluent disposal in the vicinity of disposal lagoons.

The area is of high conservation value because the northern portion carries a very extensive area of samphire surrounded by closed-sedgeland, which is bordered by low woodland of salt water paperbark. On slightly higher ground is closed-forest of swamp paperbark which, in the swampy land to the north of the estuary, is surrounded by woodland of Moonah paperbark and flooded gum. Remnants of tall open-forest of tuart occur on the higher ground. The Leschenault Peninsula carries low closed-forest of peppermint and some open-forest of tuart, and also contains a small area of the rare white mangrove.

The Inlet is of considerable importance as a water-bird habitat. More than fifty species have been recorded, a number of them with populations in excess of a thousand. The estuary is an important summer refuge for water-fowl such as the black duck, grey teal, musk duck and black swan. The most important areas of water-fowl habitat are at the northern end and a section of the western shore opposite Australind where most of the swan population move during mid and late summer. The Inlet has the largest populations of pelicans of all the estuaries between Perth and Esperance, and also provides an important habitat for two species of wading bird, the migratory greenshank and the pied stilt. Laporte Egret Swamp, on the south-eastern shore of the recommended area, supports one of the few Western Australian breeding colonies of the white egret.

The shallower waters of the Inlet are an important nursery area for commercial species of fish, including whiting, cobbler, mullet, bream, tailer, garfish, flathead, flounder and also the blue manna crab.

The area is of high recreation value and includes a wide range of terrestrial, estuarine and ocean recreation resources. Recreation activities include the use of the sheltered waters of the estuary for swimming, boating, sailing, crabbing and fishing; and use of the ocean for beach activities and the shore of the Inlet for picnicking, camping and sightseeing. The whole area provides wide scenic vistas. At present there is no public access permitted in the Laporte effluent disposal area on the Peninsula.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination. Important management considerations include: rehabilitation and restoration of dunes, particularly in those areas containing effluent disposal lagoons and associated works; maintaining the water-bird and fish habitats, particularly the Laporte Egret Swamp; monitoring the effects of effluent disposal; allowing only passive recreation; and recognising the fragility of the dune system of the Peninsula region. It is essential that future decisions on disposal options should include a commitment to an environmental management programme including rehabilitation of the Peninsula.

Recommendations:

- C66.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C66.2 That the vacant Crown land be made a Class C Reserve for Conservation of Flora and Fauna, and that the Reserve be vested in the W.A. Wildlife Authority.
- C66.3 That Reserve A18414 be vested in the Shire of Harvey.
- C66.4 That urban development be prevented on the Leschenault Peninsula and only allowed in other areas if associated with deep sewerage systems which do not lead to pollution of the Inlet.
- C66.5 That the effluent disposal area is not to extend northwards beyond the existing disposal area boundary, and that the disposal of effluent on the existing area be phased out as soon as possible.
- C66.6 That the Public Works Department, in consultation with the Department of Conservation and Environment, produce a programme for the restoration of the effluent disposal area on the Peninsula.

C67 BRUNSWICK, COLLIE AND WELLESLEY RIVERS

The recommended area comprises the Brunswick River downstream from Brunswick Junction, the Wellesley River downstream from about 1km north of its intersection with Wellesley Road, and the Collie River from its mouth in the Leschenault Inlet to approximately 4km upstream. The rivers flow mainly through privately owned freehold land (Figure 46).

There are SEC lines in the area, and future lines are planned. The area may be affected by the proposed Perth-Bunbury highway and by widening of the Old Coast Road. Also bridging of the Brunswick and Wellesley Rivers will be required by the Bunbury Ring Road system and this may affect the area. The PWD is vested with powers to control waterflow, and to initiate irrigation and drainage works.

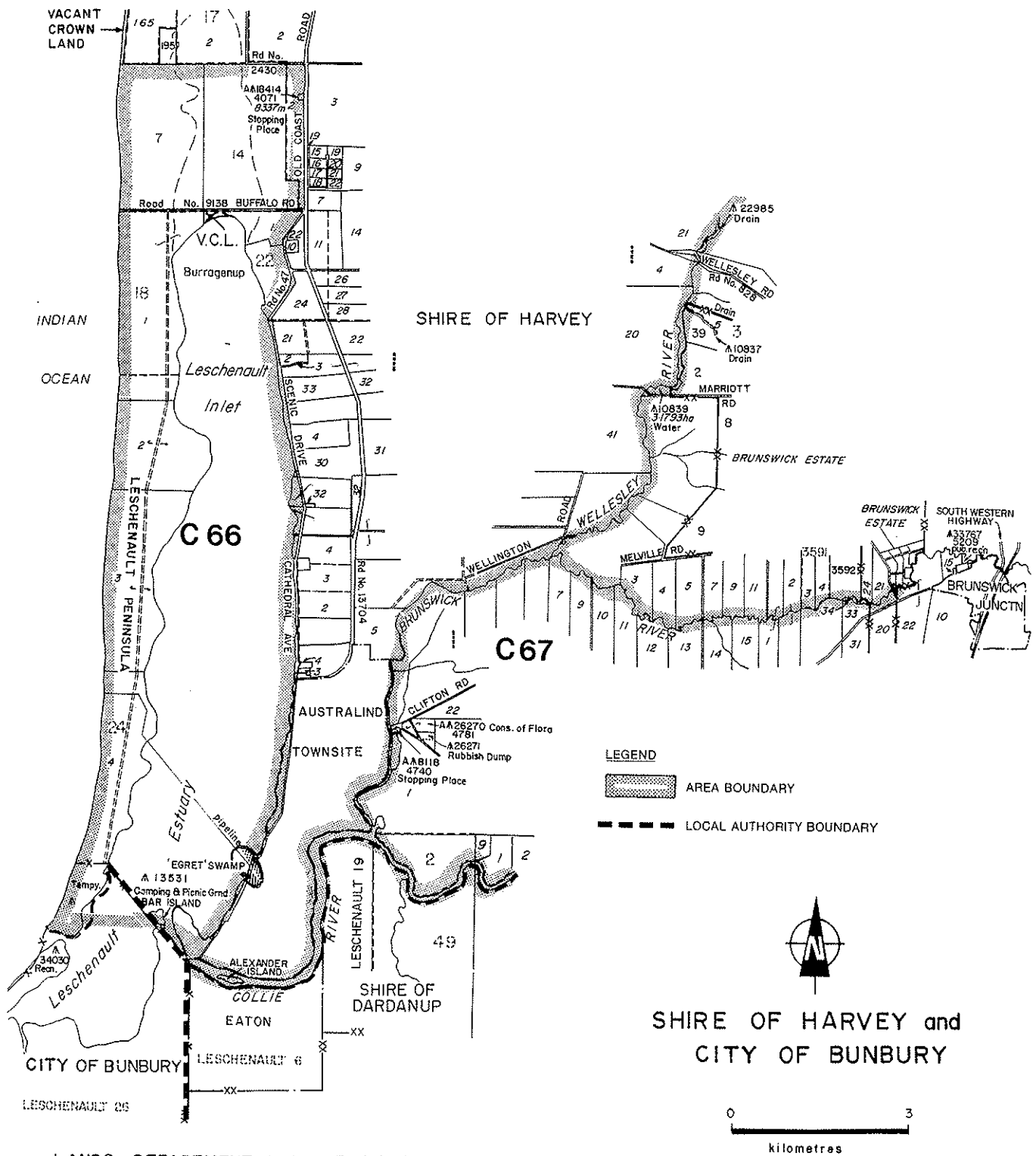
The area is dealt with in LIMA's draft Leschenault Inlet Management Programme.

The rivers are lined with flooded gum and provide very peaceful surroundings for passive recreation. Demand for use of the rivers is likely to increase as the population of Bunbury grows: river-side footpaths and picnic areas would be most suitable in catering for this.

The recommended area contributes to a larger area of open space of regional significance (see Figure 1, Chapter 4) which includes the Leschenault Inlet and the upper and middle reaches of the Collie River. The area is of regional significance because of its high conservation and recreation values and its proximity to Bunbury and Collie and neighbouring rural districts. Not all land under the various tenures within this area has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination. Important management considerations include the preservation of the local indigenous flora and natural features, and allowing only passive recreation.

Recommendation:

- C67.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).



LANDS DEPARTMENT PUBLIC PLAN No
 B 54-4, B 55-4, B 71-4, 411A/40
 PRESTON SE 1:25000,
 BRUNSWICK JUNCTION, AUSTRALIND;
 DCE Ref. No H17, H18, H19,

Figure 46

C68 ANGLESEA ISLAND

The recommended area is situated immediately to the north of Bunbury and comprises Reserve A12636, for Recreation; part of Reserve C28033, for Caravan Park, Camping, Beach Resort, Recreation and Aquatic Sports, part of Reserve C28034, for Recreation, all vested in the City of Bunbury; and vacant Crown land (Figure 47).

Cable Sands Pty. Ltd. has an agreement with Bunbury City Council to deposit tailings on part of Reserve C28034. Anglesea Island and its surrounding waters may be affected by PWD works, necessary to control flooding of nearby low-lying residential land. There are SEC lines in the area, and it may be affected by future SEC lines and underground gas pipelines, and by port and industrial developments.

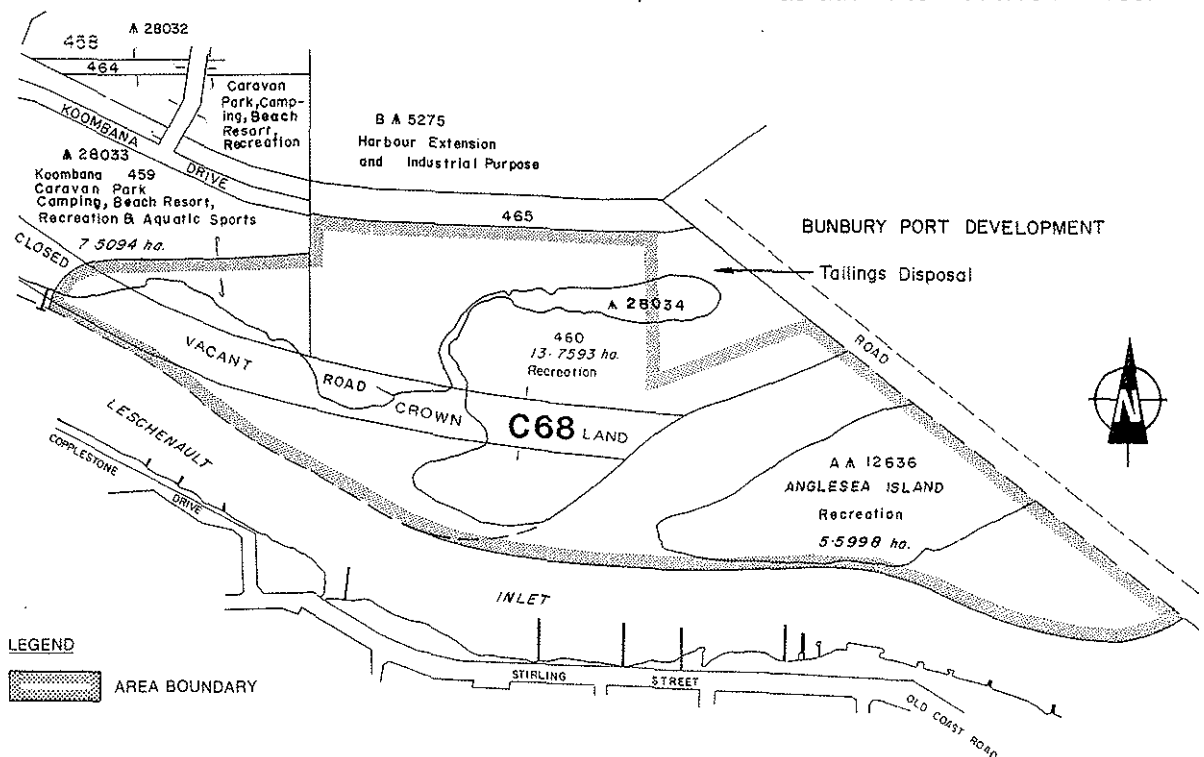
Apart from a very small stand in the north of the Leschenault Estuary, this is the only area south of Shark Bay where the white mangrove occurs. It is an unusual plant, believed to be a relic of an earlier tropical period. There are associated salt marsh plants such as samphire, and an occasional swamp sheoak.

Anglesea Island has pools of permanent water and low-lying samphire flats which provide good feeding and roosting areas for many water-birds, including greenshank, white-faced heron, white egret and common sandpiper. Some of these species migrate annually from the northern hemisphere, and in all, over fifty species have been recorded here. One of this area's greatest values is that it has a complete range of the estuary's major water-bird species, right next to Bunbury. Therefore it rates highly from the points of view of conservation, scientific interest and recreation.

The mudflats adjacent to Koombana Park and Anglesea Island provide large numbers of worms, molluscs and crustacea, which are essential for most of the wading birds. The tidal flats are also nursery areas for commercial and angling species of fish.

Recommendations:

- C68.1 That the purpose of Reserve A12636 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C68.2 That the vacant Crown land and the area of water, as shown in Figure 47, be added to Reserve A12636.
- C68.3 That the southern portion of Reserve C28033 and all but the north-eastern portion of Reserve C28034 be excised and their respective areas added to Reserve A12636.



LANDS DEPARTMENT PUBLIC PLAN No
Bunbury BG 30/02-33, BG 30/02-32
OCE Ref. No H 20

CITY OF BUNBURY

Figure 47

C69 BIG SWAMP, SOUTH BUNBURY

The recommended area is situated about 3km south of Bunbury, and comprises Reserve C31988, for Government Requirements (Public Works Department), vested in the Minister for Works; lots 1, 28, 36, 222, 224 to 230, 235 to 238, 241 to 244, 247 to 257, 262 to 265, 308 to 310, and parts of lots 7, 13 (Tuart Street), 13 to 21, 61, 100, 189, 190, 239, 240, 259 to 261 (Leschenault Location 26), privately owned freehold land (Figure 48).

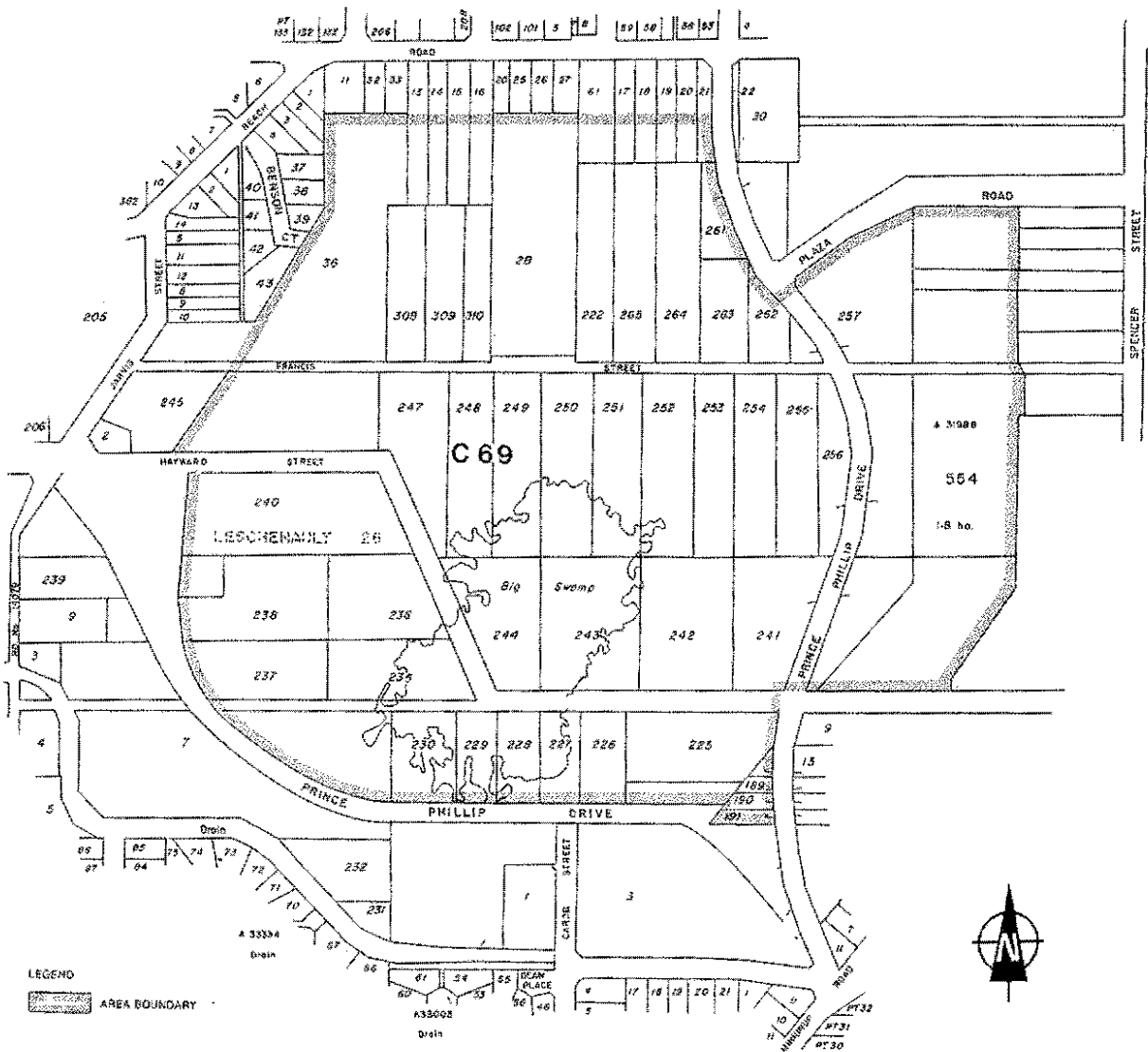
The Bunbury City Council has prepared plans to develop the area for passive and active recreation, though aquatic recreation should not be permitted as this would interfere with conservation of the wetland habitat.

The area may be affected by future groundwater extraction and associated works. Sanitary landfill in the swamp has ceased and future disposal is unlikely to occur.

Big Swamp has a very wide range of birds, as many as seventy species having been recorded. The area is excellent for study by school and other groups.

Recommendation:

C69.1 That Big Swamp be managed by the Bunbury City Council for conservation of flora and fauna, and recreation.



LANDS DEPARTMENT PUBLIC PLAN No
 BUNBURY 86 30/01 30, 01/31
 DCE Ref. No H21

CITY OF BUNBURY

0 100
 METRES

Figure 48

C70 SOUTH BUNBURY COASTAL LAND

The recommended area is situated about 5km south of Bunbury and comprises part of Reserve C670, for Endowment for Bunbury City, vested in the City of Bunbury; and parts of lots 301 to 304 (Leschenault Location 26), freehold land, owned by the City of Bunbury (Figure 49).

The Bunbury City Council's proposed District Town Planning Scheme No. 6 deals with this area. The area may be affected by future groundwater extraction and associated works. The area's dunes have been badly affected by off-road vehicles and this activity will eventually result in blowouts unless it is controlled.

The coastal land which forms part of Reserve C670 has vegetation ranging from open-heath to tall open-forest. There are high sand dunes which offer extensive views and which support open-heath, dominated by myrtle, acacia and cottonhead around their tops, with some low closed-forest of peppermint on their sides. In the valleys and to the east of the dunes there is tuart. This forms tall open-forest and tall woodland, with occasional jarrah and marri, with an understorey dominated by peppermint and slender banksia, and a very diverse groundstorey including buttercup, wild sarsaparilla and greenhood orchid. "The Maidens" is one area of high conservation value.

Important management considerations for this area include: the siting of Public Open Space so as to protect the coast and provide a buffer between the beach and residential development at South Bunbury; controlling access to the beach by appropriate placement of car parks and pedestrian pathways; siting roads so that they do not run parallel to and continuously near the coast; and prohibiting or restricting access to sensitive areas.

Recommendation:

C70.1 That areas of Public Open Space, containing attractive and important features such as "The Maidens" and important stands of tuart, be set aside at the time of subdivision of the coastal land south of Bunbury.

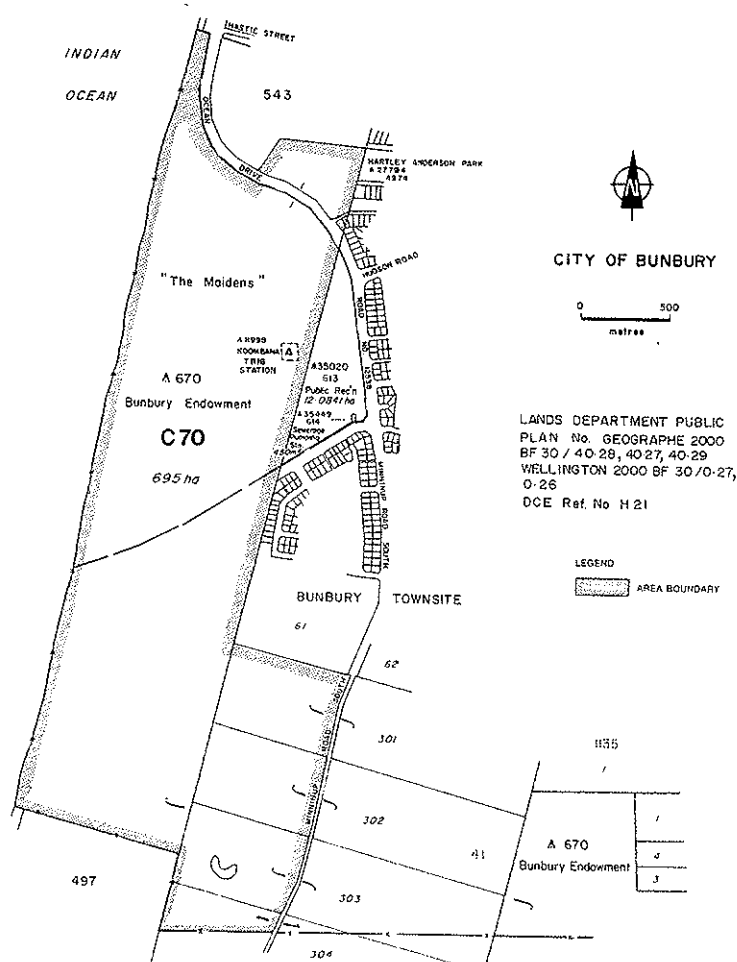


Figure 49

C71 RESERVES NEAR DALYELLUP

The recommended area is situated about 10km south of Bunbury and comprises Reserves A23000, for Travellers, Stopping Place and Caravan Park, and C28825 and C28836, both for Public Recreation, all vested in the Shire of Capel (Figure 50).

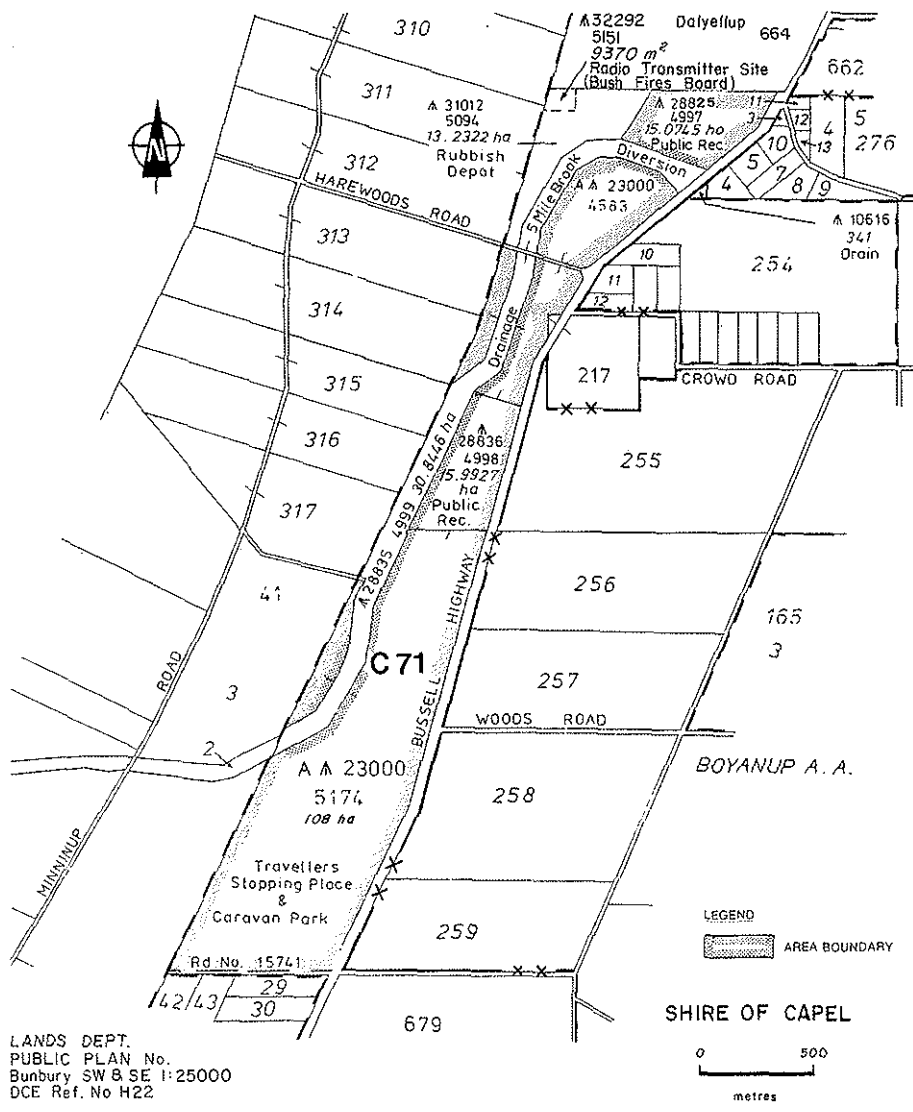
Part of Reserve C28825 has been developed for sporting events. The area may be affected by future groundwater extraction and associated works as well as by road widening and a proposed road interchange. The MRD states that it requires part of Reserve A23000 for sand and limestone.

The area carries open-forest of jarrah, marri, banksia, woody pear, peppermint and snottygobble, with a varied understorey which includes pixie mops, acacia, buttercup and purple flag. During spring the vegetation provides a colourful display beside the Bussell Highway, there being no similar area along the main roads of the district. Consequently, the area has high tourist value.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora, especially along the Bussell Highway; and protecting the brush wallabies in the area.

Recommendations:

- C71.1 That the purpose of Reserve A23000 be amended to Travellers and Stopping Place.
- C71.2 That the Capel Shire Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.



C72 TEESDALE MANAGEMENT PRIORITY AREA

The recommended area is situated about 7km south-west of Dwellingup and comprises State Forest, being Teesdale Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserve A5099, A5100 and A5101, for Parkland and Recreation, all vested in the Conservator of Forests; Reserve A5098, for Parkland and Recreation, not vested; that part of a foreshore reserve along the Murray River between Reserves A5098 and A5099; and Location 1055, privately owned freehold land (Figure 51).

The eastern section of the MPA is within the Murray River Water Reserve, a potential water supply source which may be harnessed by a major dam near Reserve A5101 and coupled with a desalinisation plant further downstream. The area is within the Alcoa Mining Lease but has little significance for bauxite mining. SEC lines affect the area and a demand for road and bauxite conveyor access through it may possibly arise.

Teesdale MPA contains significant areas of upland and valley vegetation which elsewhere are threatened by dieback, mining, agriculture, forestry and flooding for reservoirs. It provides the only area of uncut jarrah forest which is both close to the escarpment and in the high rainfall area. It also contains a substantial area of high-quality open-forest of yarri along the slopes of the Murray Valley.

Recreational use of the area is extensive and likely to increase, with the MPA providing access to the Murray River and containing established barbecue areas and footpaths.

The recommended area, together with Murray Valley MPA (C73), Plavins MPA (C74), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83), Trees MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation value and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C73-C77 and C82-C85, requires coordination. Important management considerations for the area include: including water as a purpose of management; only allowing recreation activities which are compatible with the conservation of flora and fauna; excluding off-road vehicles; establishing walking trails; and recognising that this part of the river course is an important recreational resource.

Recommendations:

- C72.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C72.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Teesdale MPA.
- C72.3 That the purpose of Reserve A5098 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C72.4 That Reserves A5099, A5100 and A5101 be cancelled and their respective areas be added to State Forest to be managed as part of Teesdale MPA.

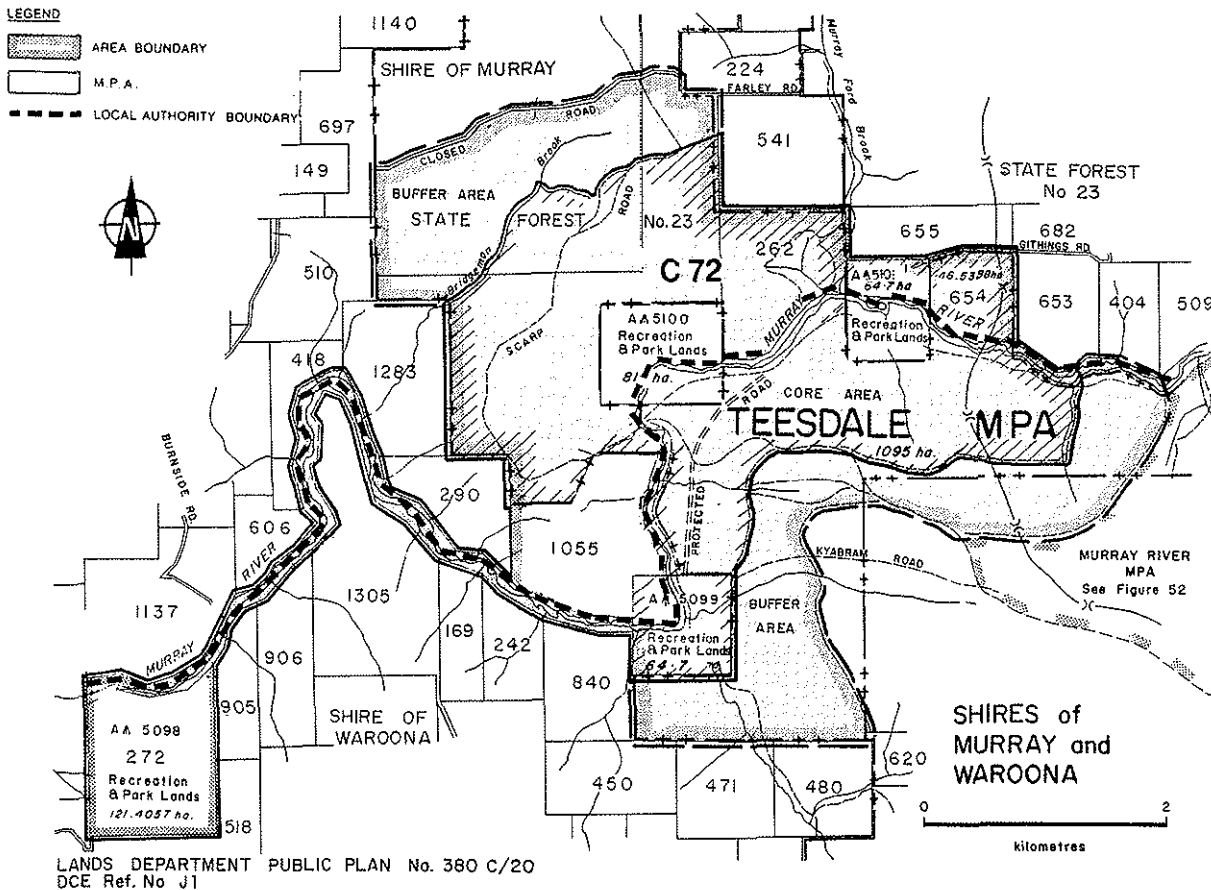


Figure 51

C73 MURRAY VALLEY MANAGEMENT PRIORITY AREA

The recommended area is situated about 10km south of Dwellingup and most of it comprises State Forest, being Murray Valley Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is recreation. Also included in the recommended area are Reserve A5102, for Recreation and Parklands, vested in the Conservator of Forests; and Locations 797 and 841, privately owned freehold land (Figure 52).

The MPA is within the Murray River Water Reserve, and a substantial part of it will be inundated if the river is dammed in the future. It is within the Alcoa Mining Lease and has some bauxite potential in the fringing upland areas. Mining strategies involving transportation of ore across the valley could potentially affect the MPA.

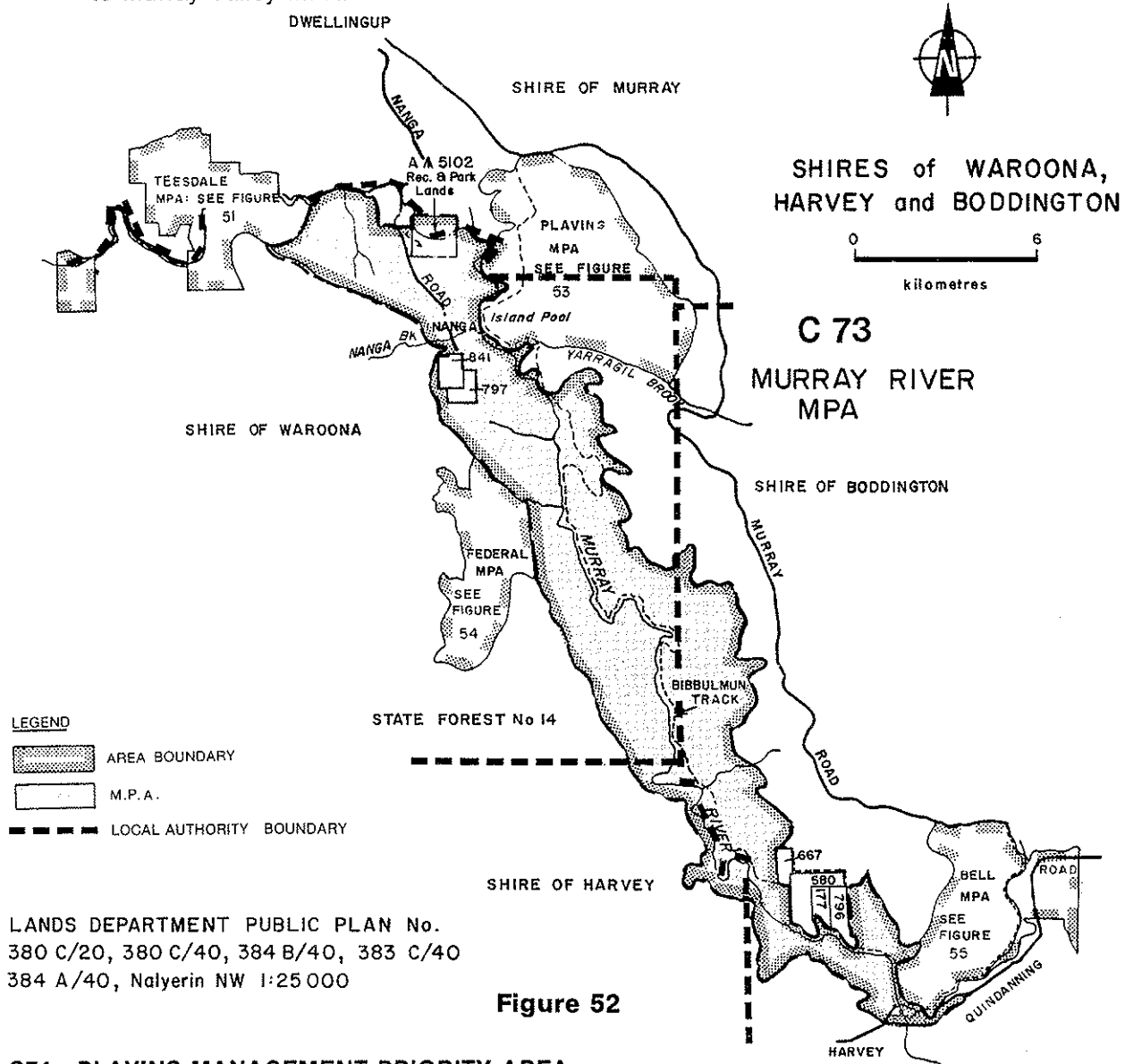
Murray Valley MPA's vegetation includes open-forest of jarrah-marri and yarri-marri-jarrah, woodland of flooded gum and *Melaleuca* on the valley floor, and shrublands and lithic complexes associated with granitic outcrops.

The MPA is of particular value as a recreational area since it contains the last large undammed stream within the day-use zone south of Perth and is readily accessible by road from other urban centres at Pinjarra, Mandurah and Bunbury. The section of the Murray River within the MPA provides opportunities for picnicking, sightseeing, bushwalking and fishing, particularly for maron and trout. Vehicular access in the north of the area is good; there are picnic spots at Nanga, Island Pool and Reserve A5102; and a long section of the Bibbulmun Track traverses the area.

The recommended area, together with Teesdale MPA (C72), Plavins MPA (C74), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83), Trees MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions, and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72, C74-C77 and C82-C85, requires coordination.

Recommendations:

- C73.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C73.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Murray Valley MPA.



C74 PLAVINS MANAGEMENT PRIORITY AREA

The recommended area is situated about 5km south-east of Dwellingup and comprises State Forest, being Plavins Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 53).

The MPA is within the Murray River Water Reserve, a potential water supply source. Part of the MPA will be inundated if a major dam is built on the Murray River or if smaller dams are built on Swamp Oak, Davies or Yarragil Brooks. The area is within the Alcoa Mining Lease and has considerable potential for mining in the medium term. Widening of the Pinjarra-Williams Road may affect the area.

Plavins MPA conserves a range of vegetation typical of the higher rainfall area of the western fringe of the Darling Range, including a large area of high-quality open-forest of jarrah and marri. It also contains, along Swamp Oak Brook, an extensive stand of river banksia, a species which occurs only in localised patches in this higher rainfall area and is endangered by flooding and dieback. The vegetation types of the Murray Valley, one of the last major valleys not yet flooded for water supply, are well represented.

The recommended area together with Teesdale MPA (C72), Murray Valley MPA (C73), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83), Trees

MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation value and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72, C73, C75-C77 and C82-C85, requires coordination.

Recommendations:

- C74.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C74.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Plavins MPA.

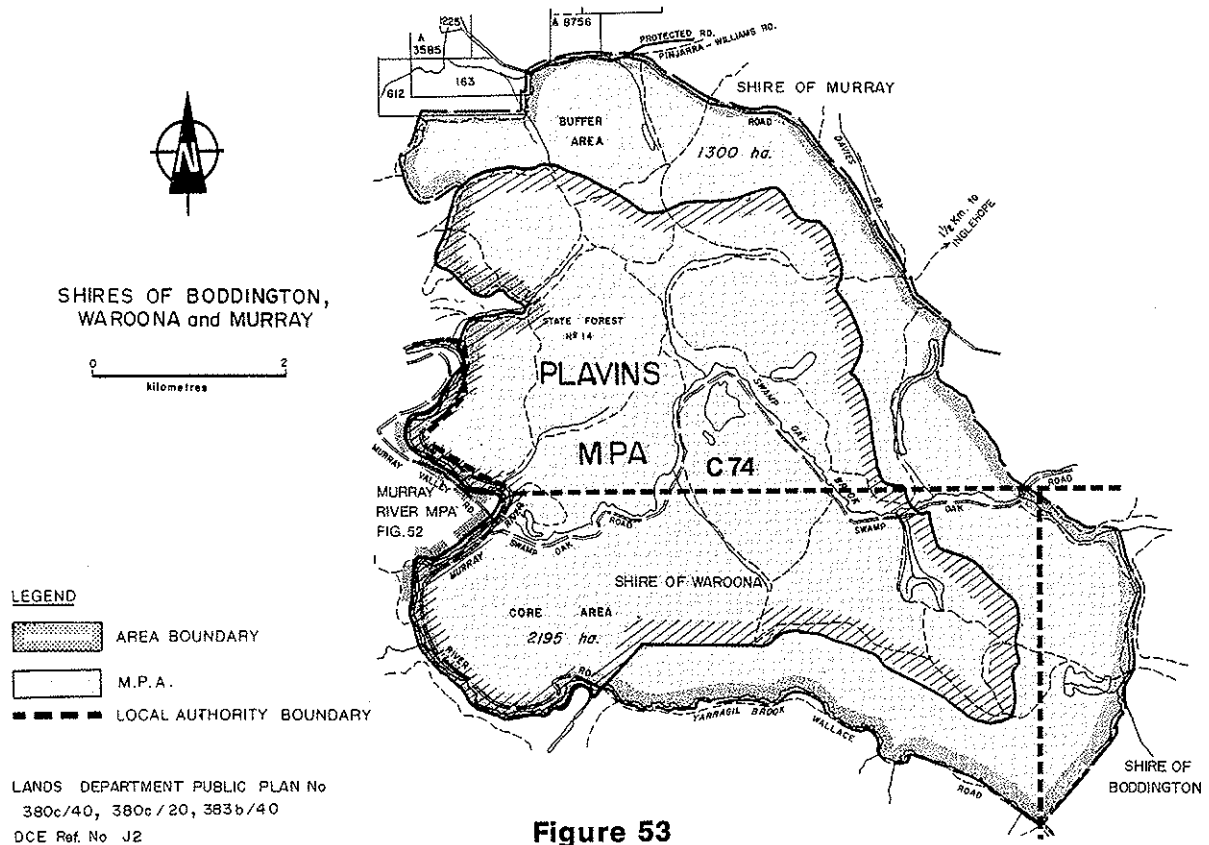


Figure 53

C75 SAMSON MANAGEMENT PRIORITY AREA

The recommended area is situated about 22km south of Dwellingup and comprises State Forest, being Samson Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 54).

Because of the MPA's proximity to Samson Dam which is used for water-based recreation such as fishing and canoeing, it is subject to considerable pressure during some seasons. Uncontrolled access to the core area could pose a risk of dieback spread. The MPA is within the Samson Brook Reservoir Catchment. The area is affected by an SEC line. It is within the Alcoa Mining Lease and has considerable medium-term potential for bauxite mining.

Samson MPA contains a range of vegetation including open-forest of yarri, jarrah and marri, and also extensive stands of bullich which are the best to be found in the Darling Range.

The recommended area together with Teesdale MPA (C72), Murray Valley MPA (C73), Plavins MPA (C74), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83), Trees MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation value and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary manage-

ment objectives: to enhance these values the management structure for this area, together with that for C72-C74, C76, C77 and C82-C85, requires coordination.

Recommendations:

- C75.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C75.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Samson MPA.

C76 FEDERAL MANAGEMENT PRIORITY AREA

The recommended area is situated about 20km south of Dwellingup and comprises State Forest, being Federal Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 54).

The MPA is within the Murray River Water Reserve, a potential water supply source. If a major dam is built on the Murray River public access will be restricted by Catchment Zone regulations. The area is within the Alcoa Mining Lease and has considerable long-term potential for bauxite mining.

Federal MPA conserves open-forest of yarri, marri and jarrah. The yarri stands are particularly significant as this species has been heavily affected elsewhere by agriculture, timber logging and flooding of river valleys. The MPA also contains some valuable stands of river banksia and bullich.

The recommended area together with Teesdale MPA (C72), Murray Valley MPA (C73), Plavins (C74), Samson MPA (C75), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83), Trees MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation value and its proximity to the Perth and Bunbury regions and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72-C75, C77 and C82-C85, requires coordination.

Recommendations:

- C76.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C76.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Federal MPA.

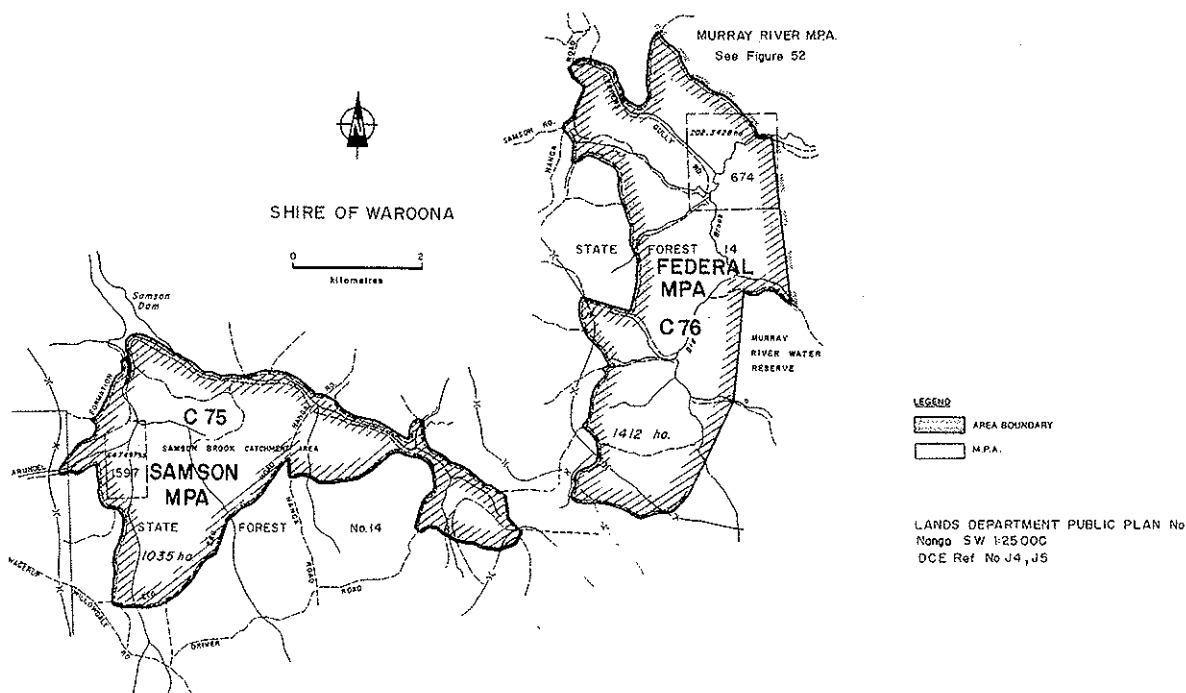


Figure 54

Recommendations:

- C77.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C77.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Bell MPA.

C78 RESERVE C22977, HARVEY

The recommended area is situated on a tributary of the Harvey River, about 2km north-east of Harvey, and comprises Reserve C22977, for Common, vested in the Shire of Harvey (Figure 56). The Reserve incorporates the unique vegetation of the Darling Scarp, including herblands, shrublands and low open-woodland of wandoo and marri. There are a few occurrences of the rare butter gum.

Since the flora of the Scarp varies considerably in composition from north to south, and a large section of the Scarp has already been disturbed by various activities, it is vital that areas should be reserved along the length of the Scarp for conservation.

Because of the area's value for conservation and its location, it contributes to open space of regional significance extending along the Darling Scarp (see Figure 1, Chapter 4).

Recommendations:

- C78.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C78.2 That the purpose of Reserve C22977 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

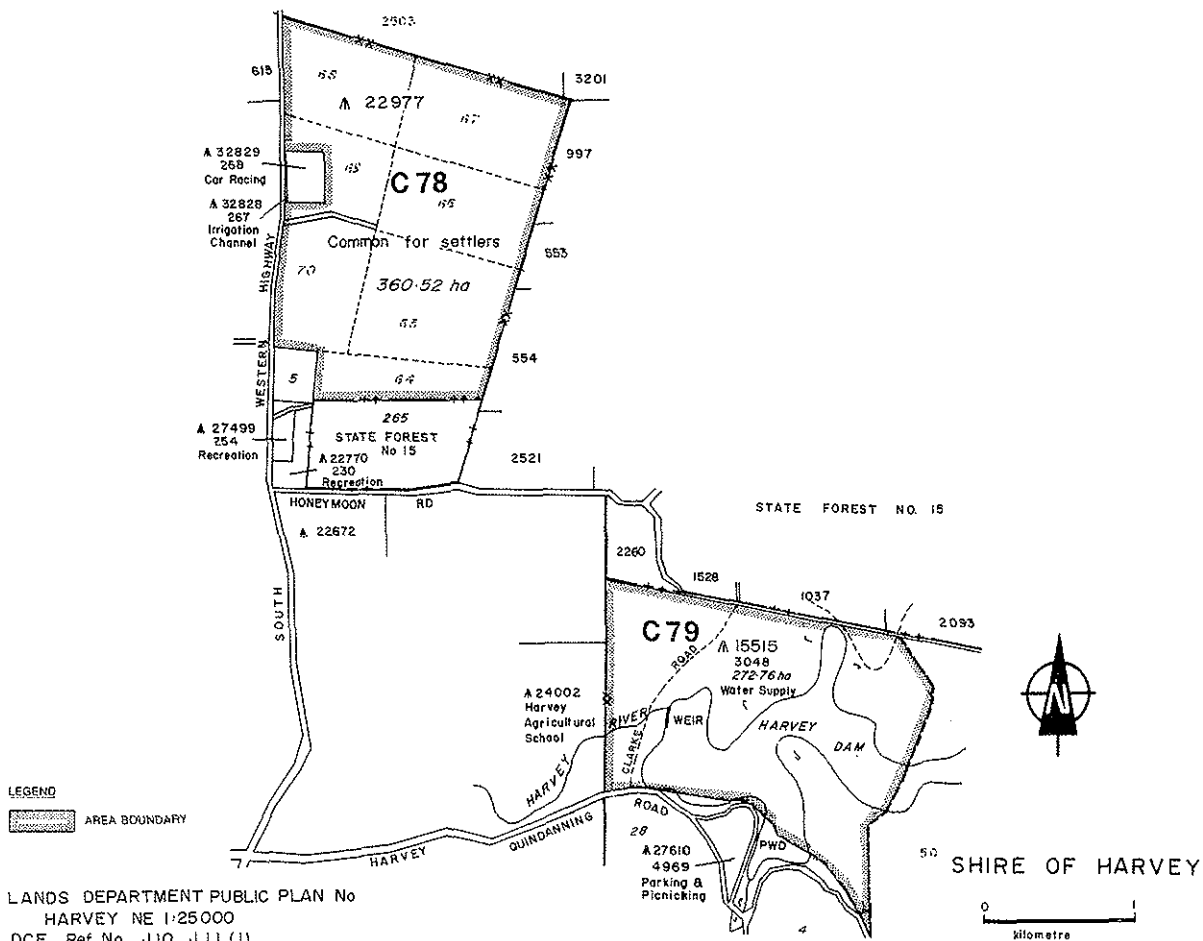


Figure 56

C79 RESERVE C15515, HARVEY

The recommended area is situated about 3km east of Harvey and comprises Reserve C15515, for Water Supply, vested in the Minister for Water Resources (Figure 56).

A large portion of Reserve C15515 could be inundated by a proposed new Harvey Dam. The area is within the Alcoa Mining Lease, but has negligible significance for bauxite mining. Pines have been planted by the Forests Department in the northern part of the Reserve.

The Reserve is largely covered by open-forest of jarrah and marri, with smaller occurrences of yarri in the gullies. An interesting feature is the presence of peppermint in several gullies. Because a large section of the vegetation in the high rainfall areas of the western fringes of the Darling Range is threatened by dieback disease, mining, forestry, recreation and agricultural clearing, it is desirable that conservation of flora and fauna be given consideration in reserves such as this.

Because of the area's value for conservation and its location, it contributes to open space of regional significance extending along the Harvey River and along the Darling Scarp (see Figure 1, Chapter 4).

Recommendations:

C79.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C79.1 That the Public Works Department, in consultation with the Department of Fisheries and Wildlife, ensure that conservation of flora and fauna is given adequate consideration in the management of Reserve C15515.

C80 RESERVES EAST OF HARVEY

The recommended area is situated about 9km east of Harvey and comprises Reserves C10745, for Preservation of Beauty Spot, C14564, for Timber for Settlers, C22797, for Conservation of Flora and Fauna, and C22958 for Public Utility, all not vested (Figure 57).

The area is within the Harvey River Catchment, and public access is restricted by PWD Catchment Zone regulations. It may be affected by a proposed SEC line. The area is within the Alcoa Mining Lease, but has little potential for bauxite mining.

The Reserves support open-forest of jarrah and marri with some yarri in the gullies. The vegetation in the area is poorly represented elsewhere in System 6. Mining, intensive forestry and agriculture, as well as the occurrence of dieback, threaten large sections of the high rainfall area of the western fringe of the Darling Range. Therefore it is important that the area should be reserved for conservation.

Because of the area's value for conservation and its location, it contributes to open space of regional significance extending along the Harvey River (see Figure 1, Chapter 4).

Recommendations:

C80.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C80.2 That Reserve C22797 be vested in the W.A. Wildlife Authority.

C80.3 That Reserve C10745 be cancelled and its area added to Reserve C22797.

C80.4 That the purpose of Reserve C14564 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

C80.5 That Reserve C22958 be cancelled and its area added to Reserve C14564.

C81 RESERVE C25727, HARVEY

The recommended area is situated about 14km south-east of Harvey and comprises Reserves C25727, for Water Supply, vested in the Minister for Water Resources (Figure 57).

Future raising of Stirling Dam may affect the area.

The Reserve is largely covered by open-forest of jarrah and marri, with smaller occurrences of yarri in the gullies. An interesting feature is the presence of peppermint in several gullies. Because much of the vegetation in the high rainfall areas of the western fringes of the Darling Range is threatened by dieback disease, mining, forestry, and agricultural clearing, it is desirable that conservation of flora and fauna be given consideration in reserves such as this.

Pines have been planted by the Forests Department in the southern part of the Reserve.

Because of the area's value for conservation and its location, it contributes to open space of regional significance extending along the Harvey River (see Figure 1, Chapter 4).

Recommendations:

C81.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C81.2 That the Public Works Department, in consultation with the Department of Fisheries and Wildlife, ensure that conservation of flora and fauna is given adequate consideration in the management of Reserve C25727.

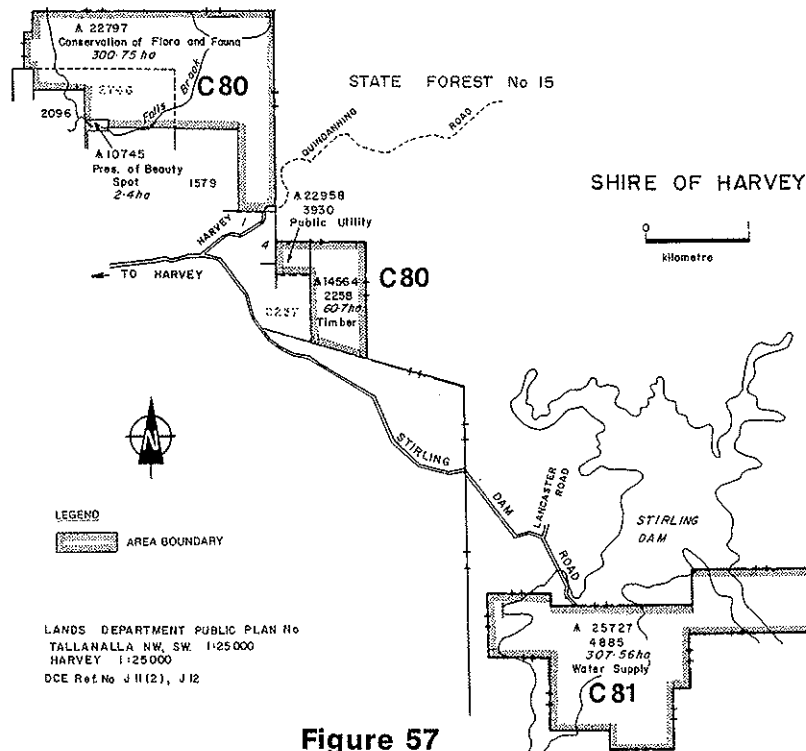


Figure 57

C82 SURFACE MANAGEMENT PRIORITY AREA

The recommended area is situated about 25km north-east of Collie and most of it comprises State Forest, being Surface Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Locations 935 and 2827, privately owned freehold land (Figure 58).

Most of the area is within the catchments of the Harris and Bingham Rivers, the northern section being within the catchments of Bell and Chalk Brooks. If a major dam is built on the Murray River or a pipehead dam on Chalk Brook, MWA by-laws will apply. Also construction of a dam on the Harris River could affect the area. There are SEC lines in the area and more are proposed. The MPA is within the Alcoa Mining Lease but has relatively low potential for bauxite mining. Western Collieries Ltd. has lease applications covering part of the area.

Surface MPA supports a large range of vegetation types. Open-forest of jarrah and marri occurs on the lateritic uplands, while a remarkable feature of the MPA is its extensive area of swamp vegetation which is associated with the valley floors and includes sedgelands, shrublands and open-woodland of banksia. Swamp cypress and woody pear, also occurring in the swamps, are uncommon and poorly represented in State Forest on the Darling Plateau. These swamps, together with those of the adjacent Nalyerin and Trees MPAs, provide an excellent refuge for wildlife of the low, medium and high rainfall areas. The MPA contains the largest remaining area of uncut jarrah forest north of the Blackwood River.

The recommended area, together with Teesdale MPA (C72), Murray Valley MPA (C73), Plavins MPA (C74), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Nalyerin MPA (C83), Trees MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions, and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72-C77 and C83-C85, requires coordination.

Recommendations:

C82.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C82.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Surface MPA.

C83 NALYERIN MANAGEMENT PRIORITY AREA

The recommended area is situated about 55km east of Harvey and comprises State Forest, being Nalyerin Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 58).

The northern section of the MPA is within the Murray River Water Reserve and the southern section within the Harris River Catchment.

PWD by-laws apply and MWA by-laws would apply in the event of a major dam being constructed on the Murray River or a pipehead dam on Bell Brook. There are SEC lines in the area and more are proposed. The MPA is within the Alcoa Mining Lease and has long-term potential for bauxite mining.

Nalyerin MPA conserves a range of vegetation types because of its variety of soils and variation in rainfall. It contains a swamp complex ranging from sedgeland to open-woodland of paperbark and swamp banksia; open-forest of jarrah occurs widely; also there is a stand of limestone marlock, a species not occurring widely in the Darling Range. The MPA contains Lake Nalyerin, a major seasonal lake which is important to native fauna.

The recommended area, together with Teesdale MPA (C72), Murray Valley MPA (C73), Plavins MPA (C74), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Trees MPA (C84) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions, and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72-C77, C82, C84 and C85, requires coordination.

Recommendations:

C83.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C83.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Nalyerin MPA.

C84 TREES MANAGEMENT PRIORITY AREA

The recommended area is situated about 55km east of Harvey and most of it comprises State Forest, being Trees Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserves A4555 and A7675, both for Resting Place for Travellers and Stock, and C6902, for Water, all not vested; and also Locations 500, 1561, 1562, 1582, 1583, 2599, 2699, 2700, 3154, 3155, 3160, 3170, 3616 and 4178, freehold land owned by the PWD (Figure 58).

The area is within the catchments of the Williams and Bingham Rivers. PWD Catchment Zone regulations apply. There are SEC lines in the area and more are proposed. The MPA may be affected by future widening or realignment of the Collie-Williams Road. It is within the Alcoa Mining Lease and has some long-term potential for bauxite mining. Western Collieries Ltd. has lease applications covering part of the area.

Trees MPA is particularly significant for its relatively undisturbed areas of uncut jarrah forest. It is also valuable for its range of vegetation types: the lateritic uplands contain open-forest of jarrah and marri and an understorey including white myrtle, honeybush and *Hakea* species, while the valleys contain sedgelands, shrublands, open-woodland of paperbark and swamp banksia and woodland of wandoo.

The significant features of the area comprising the PWD land and Reserves A4555 and A7675 are the open-forest of jarrah and marri on the uplands which is characteristic of the drier, eastern side of the Darling Plateau; the extensive stands of wandoo; and the swamp vegetation.

The recommended area, together with Teesdale MPA (C72), Murray Valley MPA (C73), Plavins MPA (C74), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83) and Stene MPA (C85), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions, and neighbouring rural districts. Not

all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72-C77, C82, C83 and C85, requires coordination.

Recommendations:

- C84.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C84.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Trees MPA.
- C84.3 That Reserves A4555, A7675 and C6902 be cancelled and their respective areas added to State Forest to be managed as part of Trees MPA.
- C84.4 That the freehold land owned by the Public Works Department be included in State Forest at the conclusion of the Department's reforestation trials.

C85 STENE MANAGEMENT PRIORITY AREA

The recommended area is situated about 40km north-east of Collie and comprises State Forest, being Stene Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 58).

The MPA is within the catchments of the Williams and Bingham Rivers and PWD Catchment Zone regulations apply.

It is within the Alwest Agreement Area but the bauxite potential has yet to be assessed in detail.

Stene MPA is covered mainly by wandoo woodland and open-forest of jarrah. Particularly significant features of the MPA's vegetation are the occurrence of rock sheoak and the representation of the eastern valley systems, which are poorly represented elsewhere in System 6 as a result of agricultural development.

The recommended area, together with Teesdale MPA (C72), Murray Valley MPA (C73), Plavins MPA (C74), Samson MPA (C75), Federal MPA (C76), Bell MPA (C77), Surface MPA (C82), Nalyerin MPA (C83) and Trees MPA (C84), which includes private and Government freehold land, Land Act reserves and State Forest, constitutes open space of regional significance (see Figure 1, Chapter 4). The area is of regional significance because of its high conservation and recreation values and its proximity to the Perth and Bunbury regions, and neighbouring rural districts. Not all land under the various tenures within the area has conservation and recreation as primary management objectives: to enhance these values the management structure for this area, together with that for C72-C77, C82-C84, requires coordination.

Recommendations:

- C85.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C85.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Stene MPA.

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

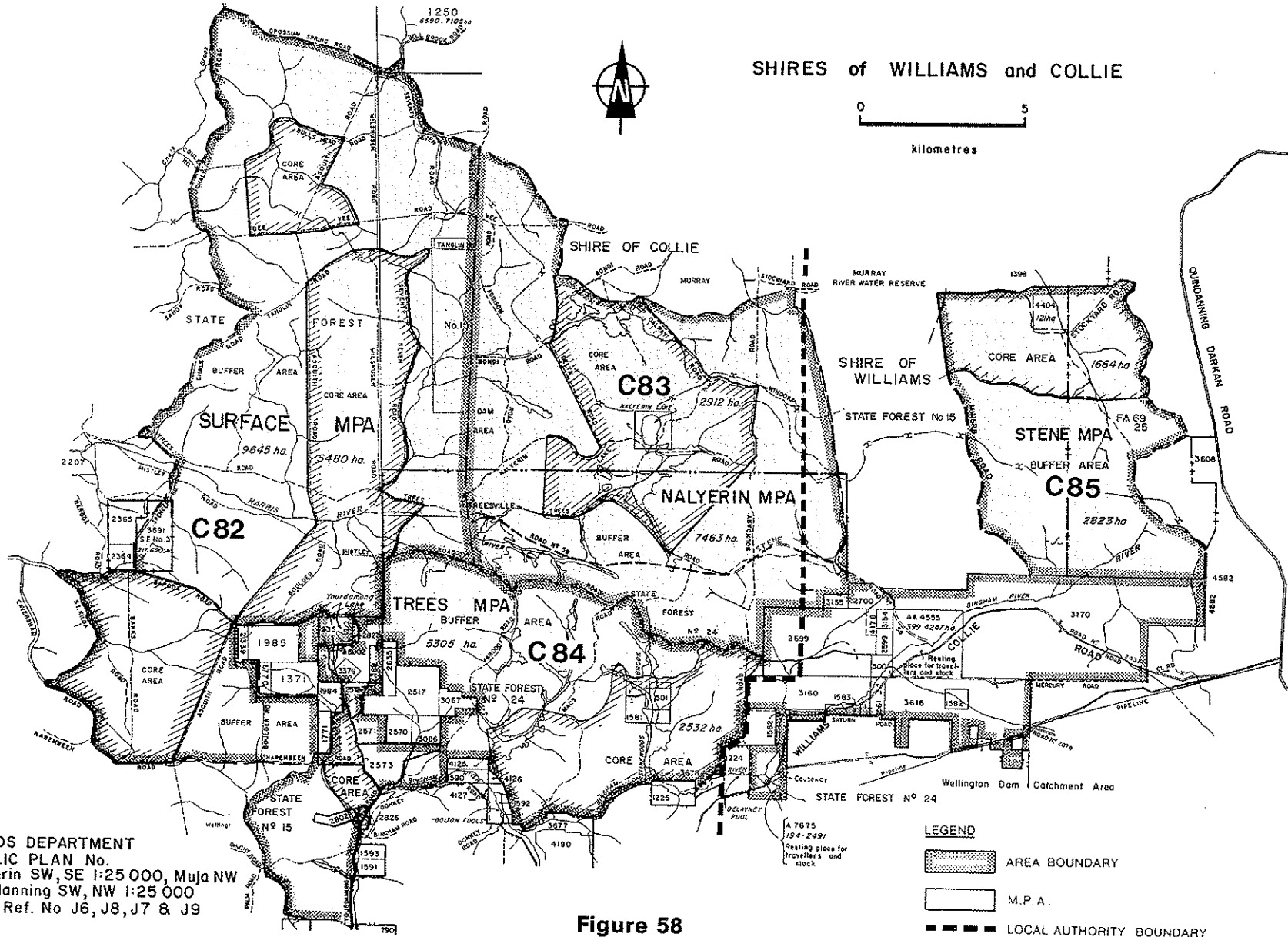


Figure 58

C86 DARDANUP MANAGEMENT PRIORITY AREA

The recommended area is situated about 6km south-east of Dardanup and most of it comprises State Forest, being Dardanup Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area is Reserve C2029, for Quarries, not vested (Figure 59).

A small area in the south of the MPA may be affected by a proposed reservoir on Crooked Brook. The western third of the MPA has potential for gravel and mineral sands and is covered by several mineral claims. Reserve C2029 is currently leased on an annual renewable basis for grazing.

Dardanup MPA conserves a range of vegetation associated with the northern extension of the Donnybrook Sunland. Some of these vegetation associations are unique. Open-forest of jarrah and marri and woodland of banksia and paperbark are dominant, with some yarri, bullich and swamp banksia occurring in moister areas. The MPA also contains the only extensive stands of mountain gum in System 6.

Recreational use of the area is not significant at present but there is a potential for increased usage in the future.

The area contributes to open space of regional significance extending along the Darling Scarp because of its value for conservation and recreation (see Figure 1, Chapter 4).

Recommendations:

- C86.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C86.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Dardanup MPA.
- C86.3 That Reserve C2029 be cancelled and its area added to State Forest to be managed as part of Dardanup MPA.

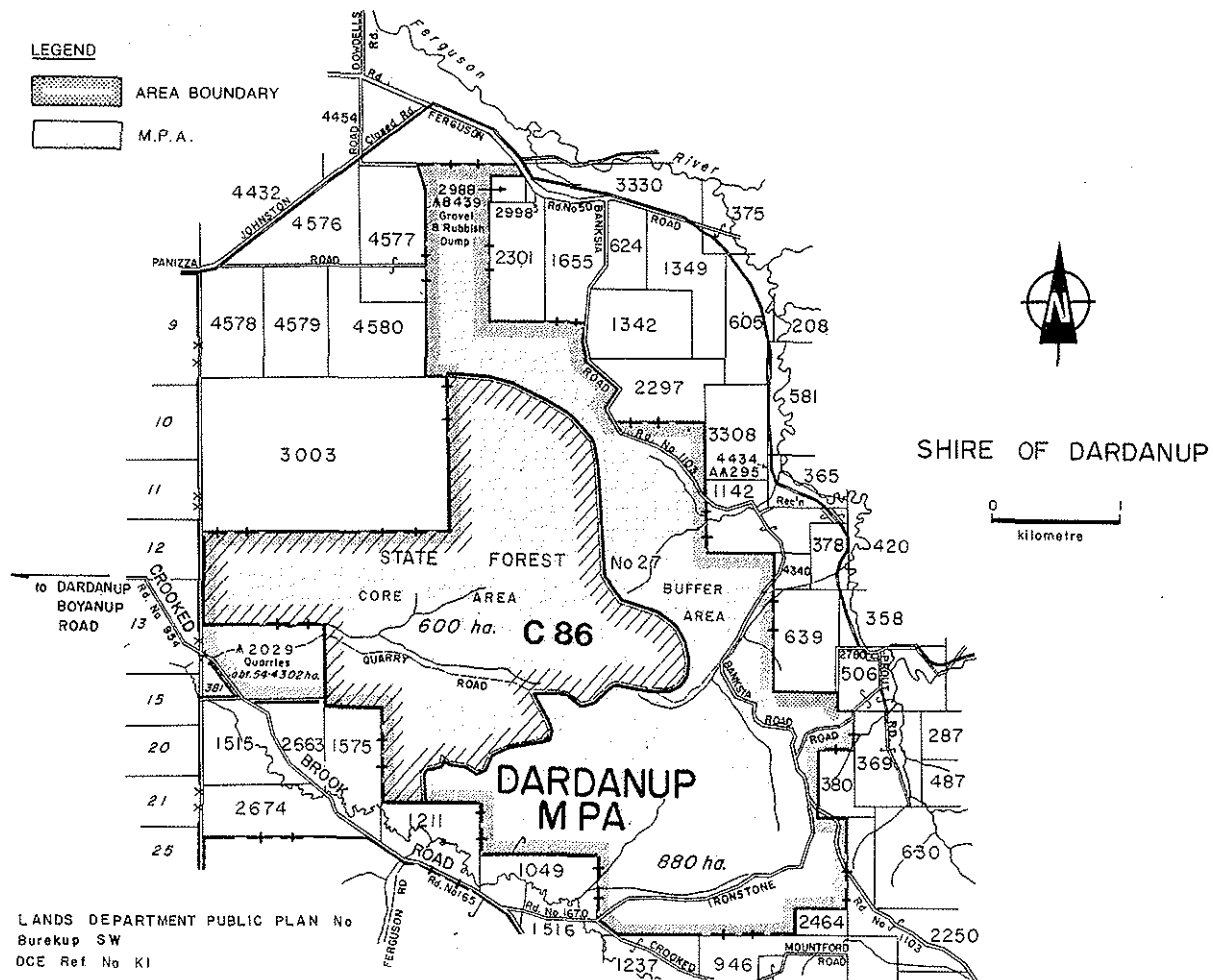


Figure 59

C87 LENNARD MANAGEMENT PRIORITY AREA

The recommended area is situated about 18km west of Collie and most of it comprises State Forest, being Lennard Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area is Reserve C19641, for School Site, not vested (Figure 60).

The area has been used for army training. It would be affected in part by construction of a dam on the Collie River at Burekup, in which case Catchment Zone regulations would restrict public access. PWD pipelines affect the area. Realignment of the Roelands-Lake King Road may also affect the area. It is within the Alcoa Mining Lease but has relatively low long-term potential for bauxite mining. The Collie River and land adjacent to it is within the boundaries of responsibility of the Leschenault Inlet Management Authority.

The characteristic vegetation of this western high rainfall area is forest of yarri, jarrah and marri. An outstanding feature of the MPA is the good representation of yarri, peppermint and river banksia whose occurrence elsewhere has been eliminated or reduced by damming of rivers, agricultural clearing and pine plantations.

The Lower Collie Valley provides a valuable recreation area for people from the Collie-Bunbury area, and its terrain, river bed and fringing vegetation are particularly attractive. Recreation use of the area is fairly extensive and includes canoeing, marroning and trailbike riding, with some bushwalking. Some footpaths and scenic drives have been constructed.

The area contributes to open space of regional significance along the Lower Collie Valley (see Figure 1, Chapter 4) because of its conservation and recreation value and its proximity to the Bunbury and Collie regions.

Recommendations:

- C87.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C87.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Lennard MPA.
- C87.3 That Reserve C19641 be cancelled and its area added to State Forest to be managed as part of Lennard MPA.

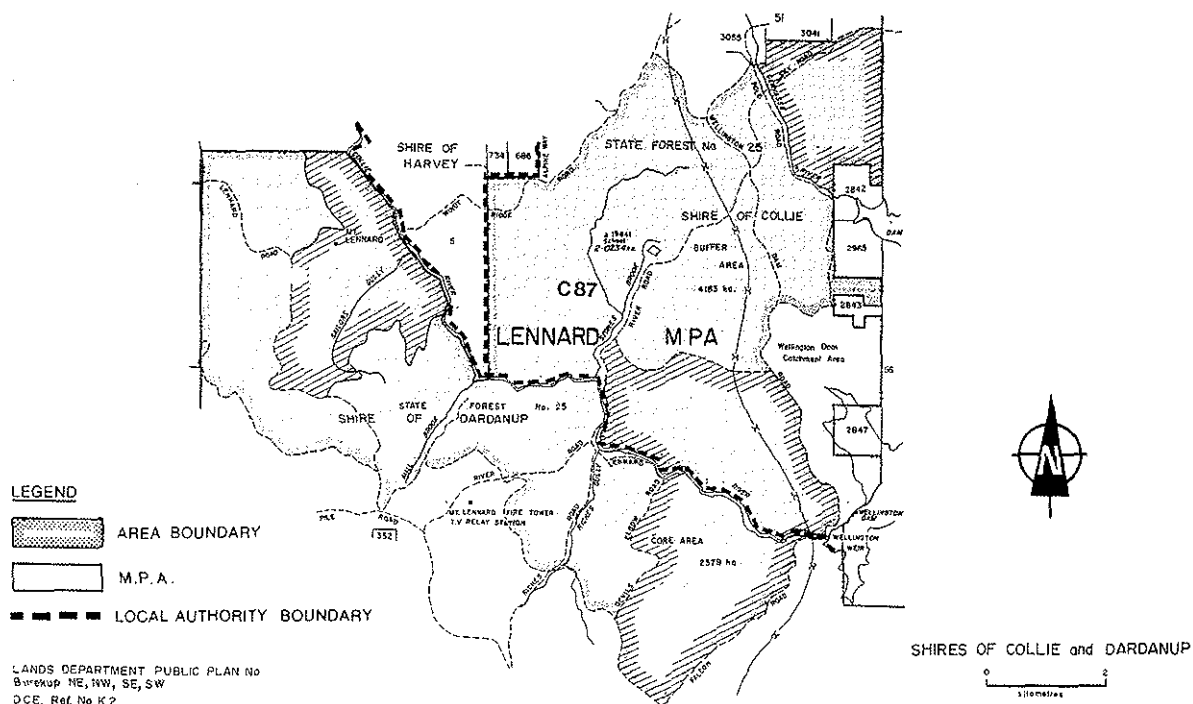


Figure 60

C88 WESTRALIA MANAGEMENT PRIORITY AREA

The recommended area is situated immediately west of Collie, abutting the Collie River upstream from Wellington Dam. Most of it comprises State Forest, being Westralia Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserves A6911, for Sanitary Depot, and C22690, for Native Flora, both not vested; Reserve C10014, for Rifle Range, also not vested but leased to the Commonwealth for that purpose; and Wellington Location 3675, privately owned freehold land (Figure 61).

There are SEC lines in the area and more are proposed. The area may be affected by realignment of the Roelands — Lake King Road. It is within the Alcoa Mining Lease but has relatively low long-term potential for bauxite mining. The area has potential for coal and is subject to several mining claims.

The lateritic uplands which make up most of the area support principally open-forest of jarrah and marri, with the valley vegetation consisting mainly of a mixture of yarri, jarrah and marri. The banks of the Collie River support a small though important area of fringing woodland, and the northern portion of the MPA comprises an important sandy area containing holly-leaved banksia and woody pear, species which are rare elsewhere on the Darling Plateau.

The MPA is also valuable for recreation. Scenic drives wind through it and the area is popular for picnicking and bushwalking.

The recommended area contributes to open space of regional significance extending along the Lower Collie Valley (see Figure 1, Chapter 4) because of its high conservation and recreation values and its proximity to the Bunbury and Collie regions. Land tenure in the area is varied and not all of the land has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination.

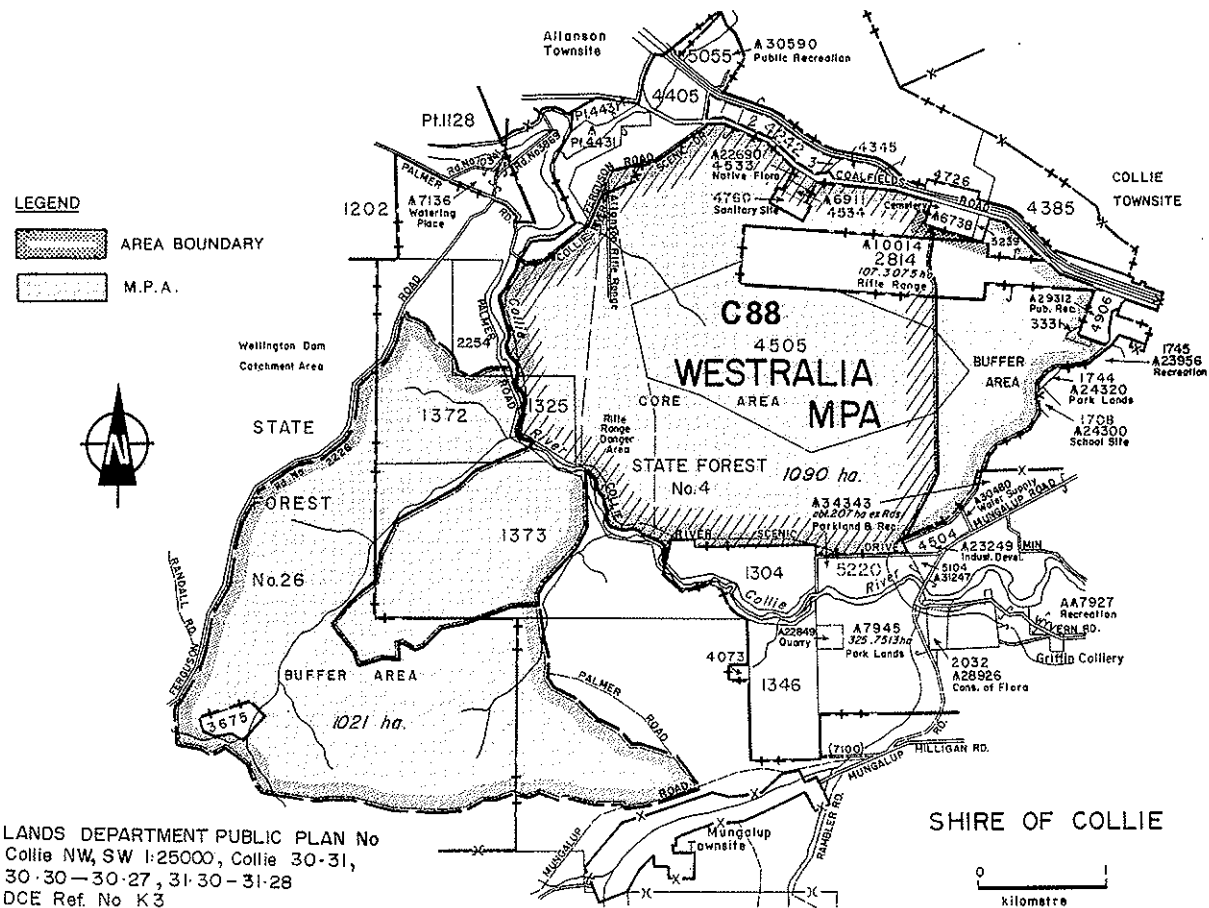


Figure 61

Recommendations:

- C88.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C88.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Westralia MPA.
- C88.3 That Reserves C6911 and C22690 be vested in the Conservator of Forests and managed as part of Westralia MPA.
- C88.4 That the Department of Lands and Surveys negotiate the cessation of the Commonwealth of Australia's lease on Reserve C10014, and that the Reserve be cancelled and its area added to State Forest to be managed as part of Westralia MPA.

C89 DONNYBROOK RESERVES

The recommended area is situated to the east of Donnybrook and comprises Reserves C2013 and C26238, both for Timber, C7859 and part of C2052, both for Government Requirements, all not vested; C22860, for Quarry (Sand), vested in the Shire of Donnybrook-Balingup; Timber Reserve 153/25; Preston A.A. lots 30, 31 and 33, and Location 447, all vacant Crown land; and Locations 430 and 431, privately owned freehold land (Figure 62).

The area may be affected by future realignment of the Donnybrook-Kojonup Road. The Main Roads Department has permission to extract gravel from Reserve C2013 and requires Reserve C22860 for sand supplies. Reserve C2052 is zoned Industrial in the Donnybrook Town Planning Scheme and a light industrial area has been established in the Sandhills Road area of the Reserve. A dam has been constructed in the extreme north-west corner of Reserve C26238 and it is possible that a portion of the Reserve may be excised.

The undulating landscape of the lateritic uplands dominates the area. Their gravels and sands support open-forest of jarrah and marri, the understorey containing bull banksia, woody pear and Christmas tree. The larger, north-eastern section comprises the eastern extension of the Donnybrook Sunkland into the lower reaches of the Preston River Valley. This section is unique and warrants reservation for the Conservation of Flora and Fauna. Previous disturbances have not significantly influenced the condition of most of the area, but dieback has badly affected various sections, lowering conservation values.

Although recreation has been restricted to localised areas, it is likely that it will increase. Owing to the special value of the north-eastern section only passive recreation such as bushwalking should be allowed there. The section to the south-west of the highway, which is less significant biologically, should accommodate most of the recreation.

Recommendations:

- C89.1 That the purpose of Reserve C2013 be amended to Recreation and that the Reserve be vested in the Shire of Donnybrook-Balingup.
- C89.2 That Reserve C7859 be cancelled and its area added to Reserve C2013.
- C89.3 That the portion of Reserve C2052 containing the current industrial subdivision and its hinterland (as shown in Figure 62) be excised, and that this portion be made a Class C Reserve for the purpose of Industry, the Reserve to be vested in the Shire of Donnybrook-Balingup.
- C89.4 That the purpose of Reserve C2052 be amended to Conservation of Flora and Fauna, and that the Reserve be vested for a limited term of 10 years in the Shire of Donnybrook-Balingup (see Recommendations 7-12 inclus., Chapter 3), to be managed in consultation with the Forests Department under a published management plan.
- C89.5 That the present vesting of Reserve C22860 is endorsed.
- C89.6 That the vacant Crown land at Location 447 be declared a Class C Reserve for the Conservation of Flora and Fauna and that the Reserve be vested for a limited term of 10 years in the Shire of Donnybrook-Balingup (see Recommendations 7-12 inclus., Chapter 3), to be managed in consultation with the Forests Department under a published management plan.
- C89.7 That ways and means of protecting the conservation value of Locations 430 and 431 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.
- C89.8 That Reserve C26238 and Timber Reserve 153/25 be vested in the Conservator of Forests and managed by the Forests Department for conservation of flora and fauna.

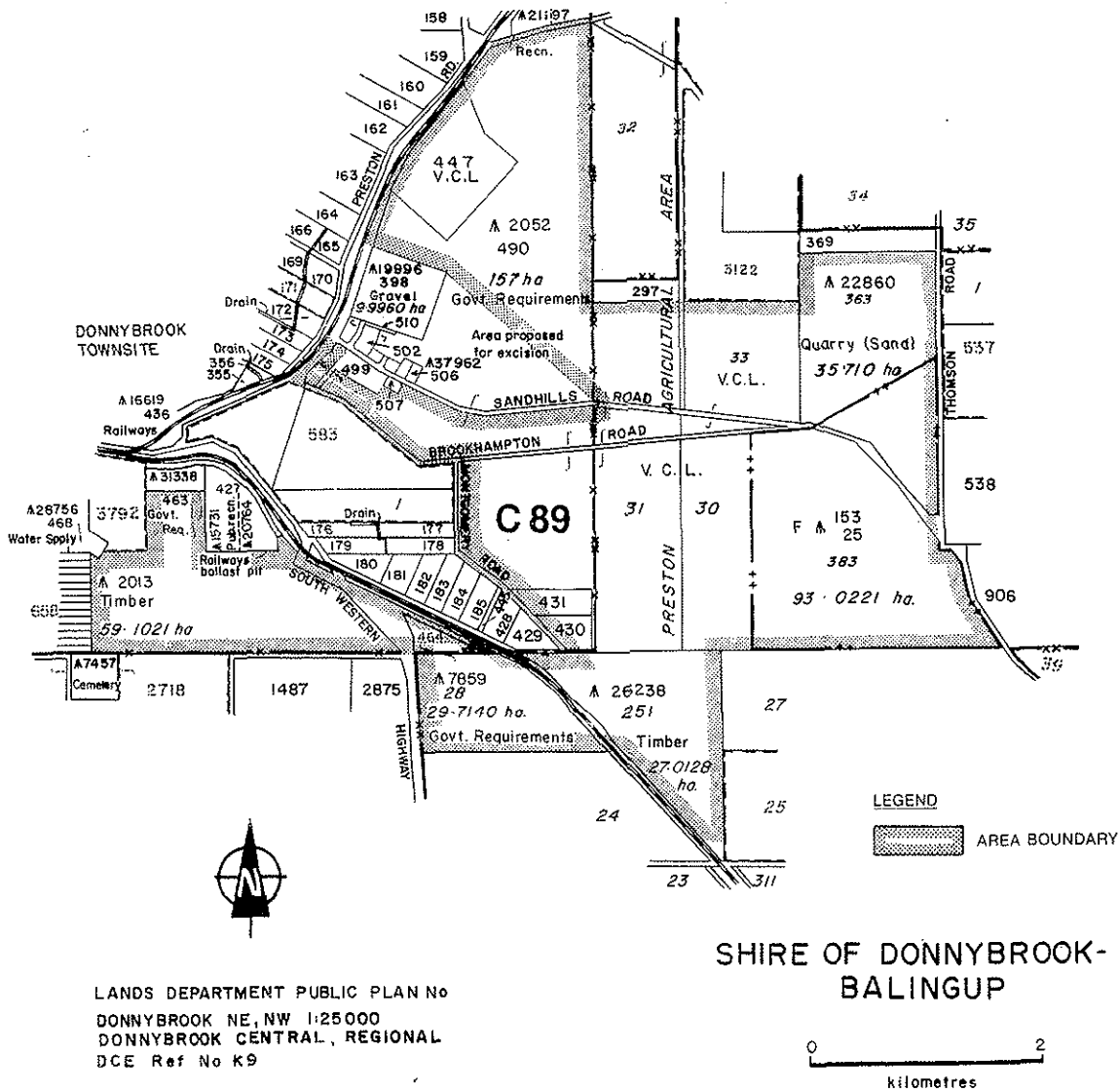


Figure 62

C90 PRESTON MANAGEMENT PRIORITY AREA

The recommended area is situated about 30km south of Collie and comprises State Forest, being Preston Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 63).

The MPA is within the Alcoa Mining Lease but has relatively low long-term potential for bauxite mining.

Most of the area consists of lateritic uplands covered by open-forest of jarrah and marri with an understorey containing bull banksia, snottygobble, sheoak, tassel flower and zamia. Valley vegetation comprises mainly open-forest of yarri, marri and jarrah with an admixture of peppermint and flooded gum. The most important feature of the MPA is a substantial area of uncut jarrah forest in the north-east corner.

Recommendation:

C90.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Preston MPA.

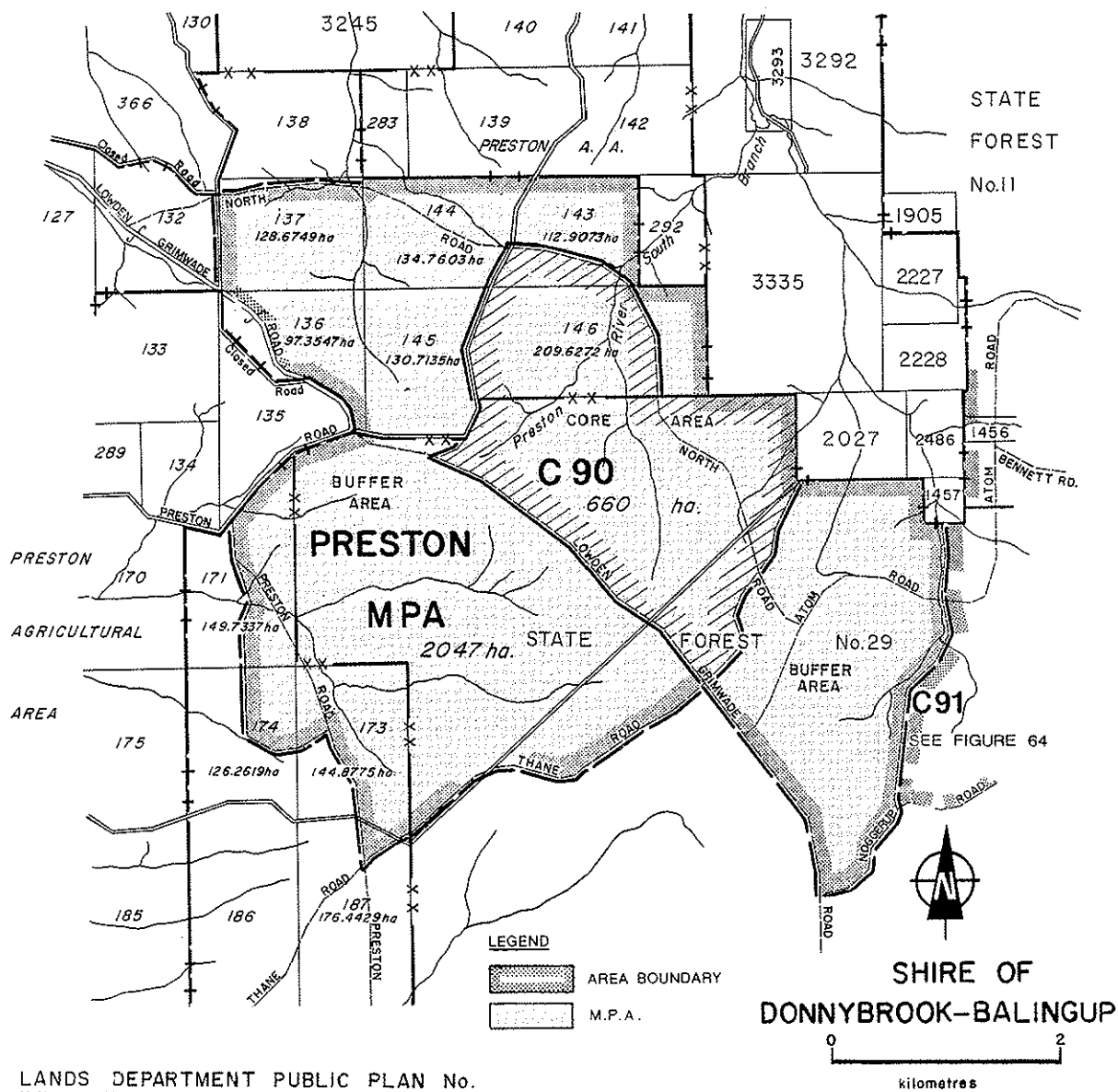


Figure 63

C91 NOGGERUP MANAGEMENT PRIORITY AREA

The recommended area is situated about 25km south of Collie and most of it comprises State Forest, being Noggerup Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area is Reserve 17114, for Railway Water Supply, not vested (Figure 64).

The area is within the Alcoa Mining Lease but has relatively low long-term potential for bauxite mining. The area also has potential for tin and tantalite.

The vegetation in Noggerup MPA consists primarily of open-forest of yarri, marri and jarrah, with an admixture of peppermint and flooded gum in the moister gullies. An important feature of the MPA is the woodland of swamp banksia which occurs on the valley floors.

Recommendations:

- C91.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Noggerup MPA.
- C91.2 That Reserve C17114 be cancelled and its area added to State Forest to be managed as part of Noggerup MPA.

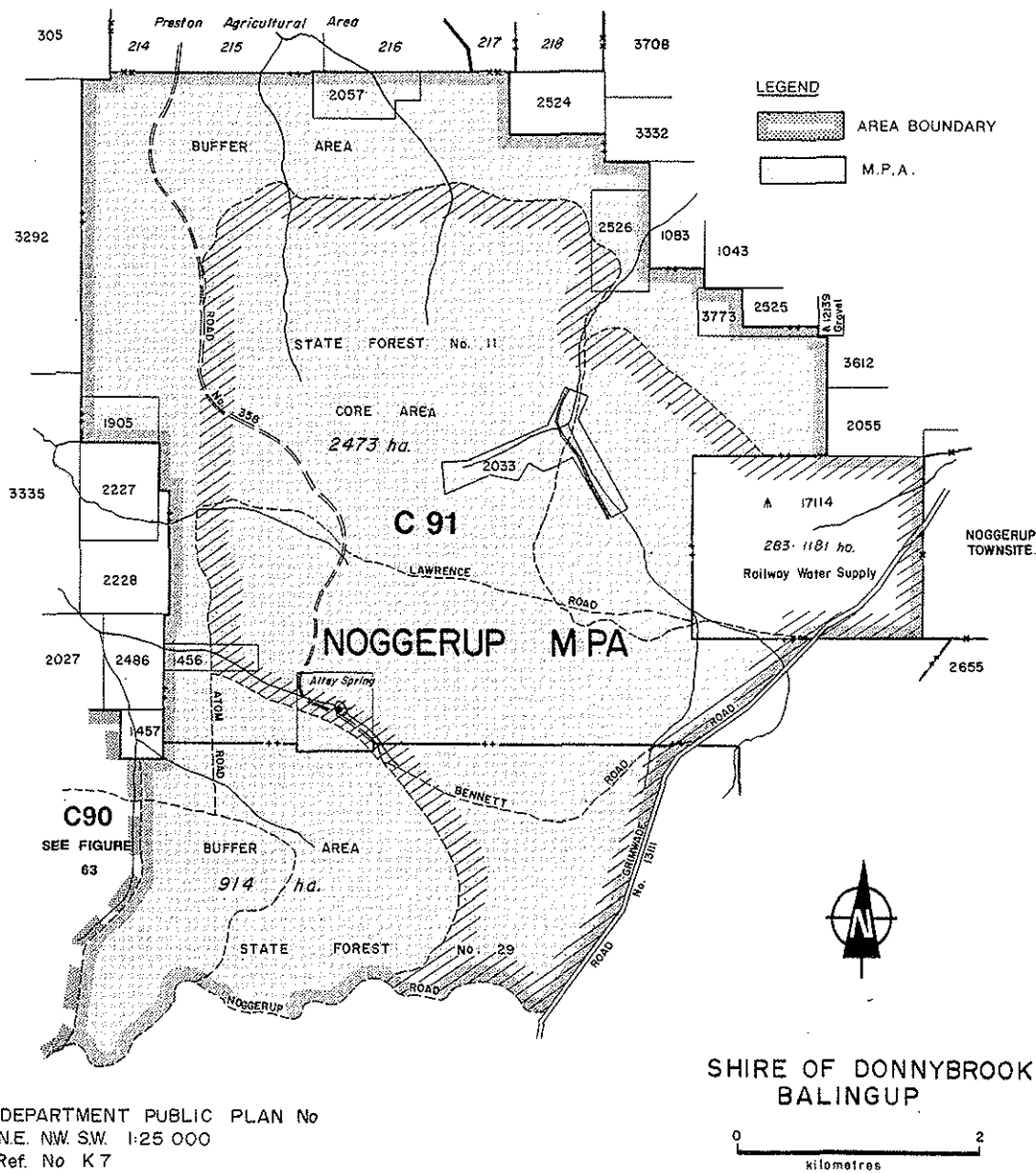


Figure 64

C92 GOONAC MANAGEMENT PRIORITY AREA

The recommended area is situated about 30km south-east of Collie and most of it comprises State Forest, being Goonac Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserves C11683 and C12331, both for Water, not vested; and Special Lease 3116/6751, an annual renewable grazing lease (Figure 65).

There are SEC lines in the MPA. It is within the Alwest Agreement Area but has little potential for bauxite mining.

Goonac MPA conserves a range of vegetation including jarrah and marri, wandoo woodland, open woodland of slender banksia, swamp banksia and paperbark, and shrubland. The dense shrubland in the moister gullies is the most significant as it provides an important refuge for the rare tammar.

Recommendations:

- C92.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Goonac MPA.
- C92.2 That Reserves C11683 and C12331 be cancelled and their areas added to State Forest to be managed as part of Goonac MPA.
- C92.3 That upon annual determination, special lease 3116/6751 be added to State Forest and managed as part of Goonac MPA.

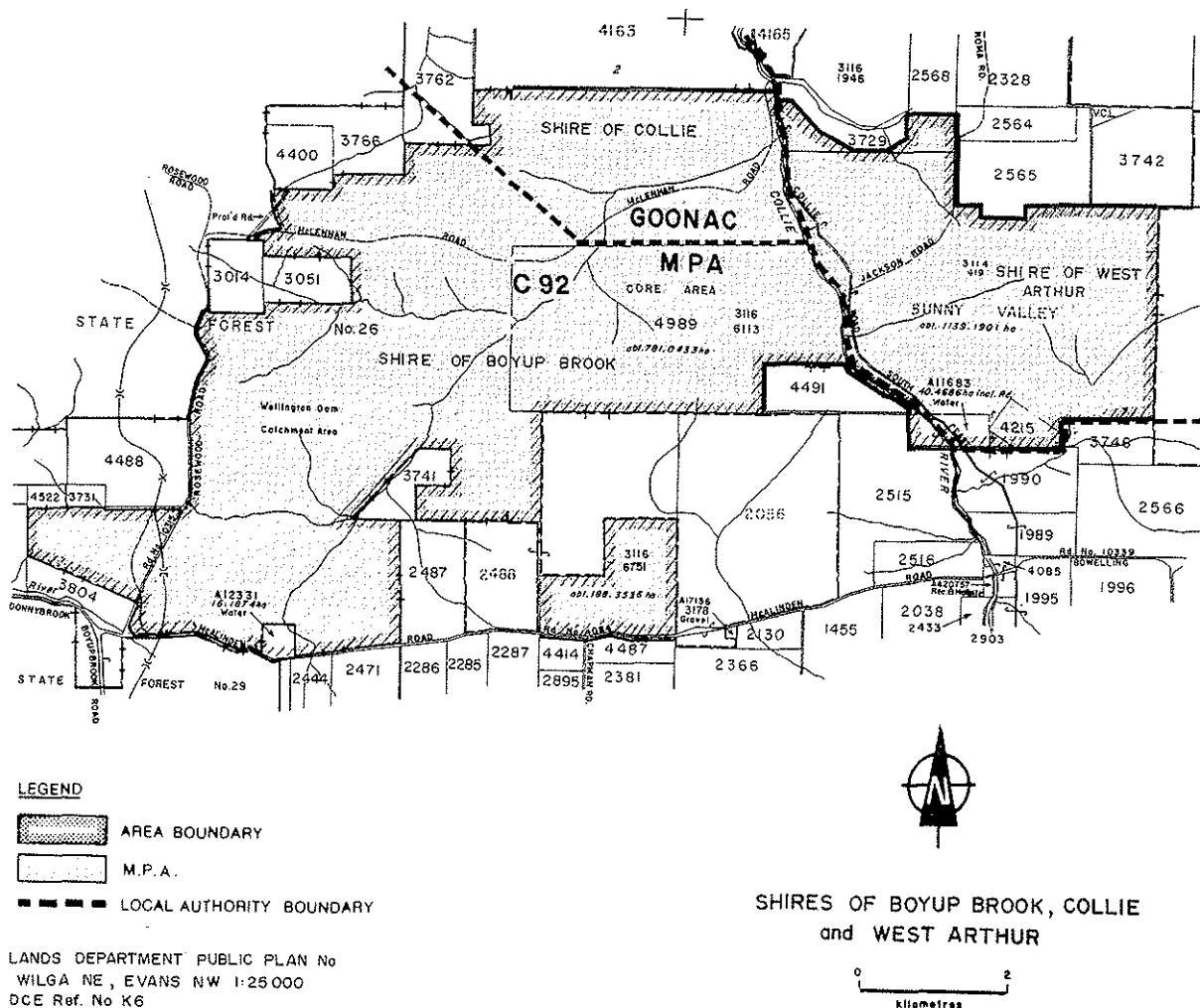


Figure 65

C93 MUJA MANAGEMENT PRIORITY AREA

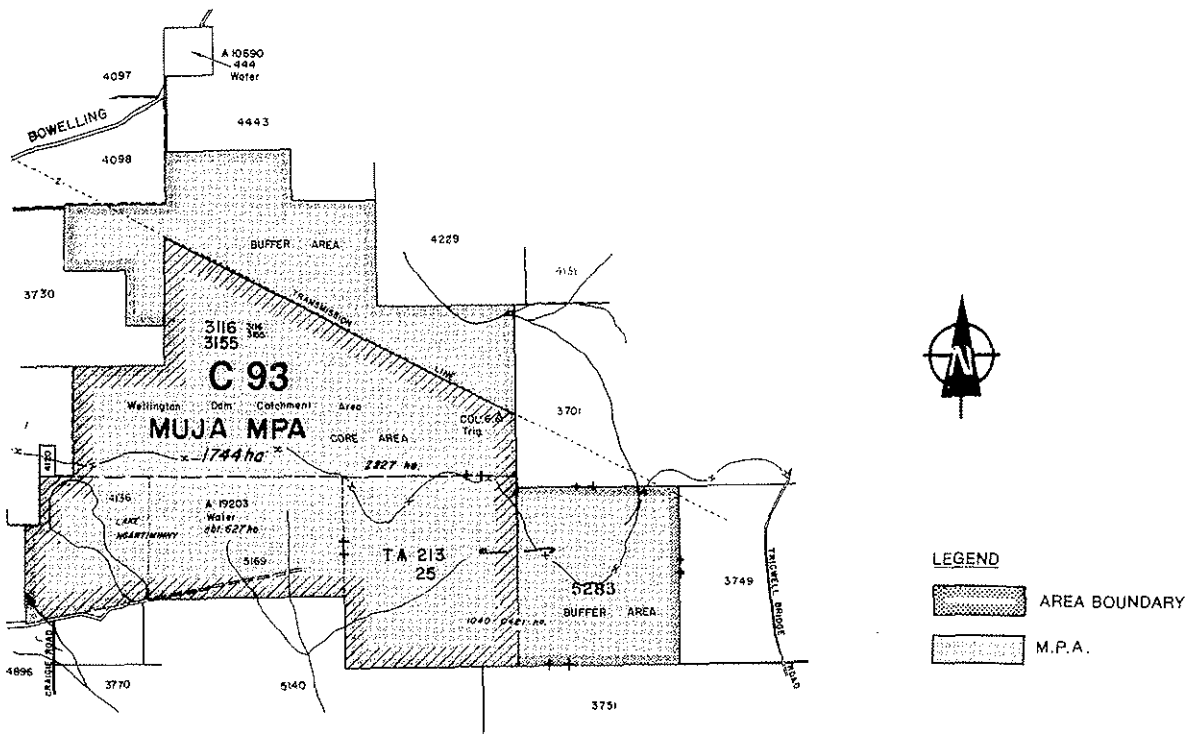
The recommended area is situated outside System 6 in System 4, about 35km south-east of Collie. It comprises Special Lease 3116/3155 (an annual renewable grazing lease), Timber Reserve 213/25 and Reserve C19203 for Water, not vested, being Muja Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 66A).

The area is currently used for duck shooting. Uncontrolled access and shooting could reduce the area's conservation value. The area contains SEC lines and is within the Alwest Agreement Area, but is unlikely to be mined for bauxite.

Muja MPA is comprised of lateritic uplands and flat floored valleys supporting open-forest of jarrah and marri, and woodland-of wandoo and banksia. The area contains some rare and endangered species such as *Casuarina thuyoides*, swamp cypress and *Banksia meisneri*. There is also a wide range of fauna associated with Lake Ngartiminy and other swamps.

Recommendations:

- C93.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Muja MPA.
- C93.2 That Reserve C19203 be cancelled and its area added to State Forest to be managed as part of Muja MPA.
- C93.3 That upon annual determination, Special Lease 3116/3155 be added to State Forest and managed as part of Muja MPA.
- C93.4 That Timber Reserve 213/25 be cancelled and its area added to State Forest to be managed as part of Muja MPA.



SHIRE OF WEST ARTHUR

LANDS DEPARTMENT PUBLIC PLAN No
 DARKAN SW, BLACKWOOD RIVER NW,
 MUJA SE 1:25 000
 DCE Ref. No. K4, K5



Figure 66A

C94 BENNELAKING MANAGEMENT PRIORITY AREA

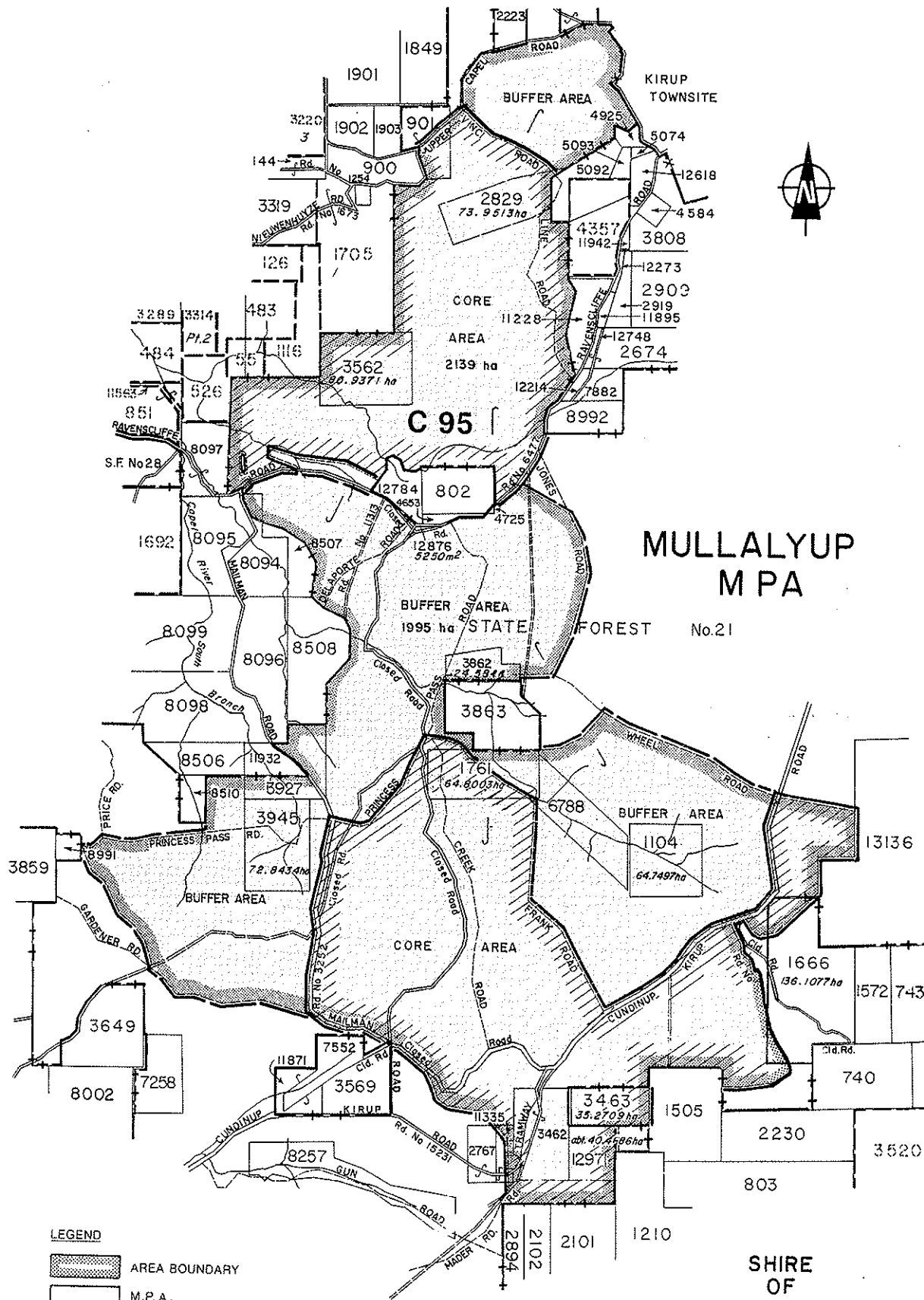
The recommended area is situated outside the boundaries of System 6, within System 4, and about 40km east of Collie. It comprises Reserve C31088, for Water Catchment Area, not vested; two portions of State Forest; and a temporary Water Reserve abutting the south-east corner of Reserve C31088. Except for the western portion of State Forest, the area has been designated in the Forests Department's Working Plan No. 87 as Bennelaking MPA with the management priority being conservation of flora, fauna and landscape (Figure 66B).

The area is within the Alwest Agreement Area, but is unlikely to be mined for bauxite.

Bennelaking MPA contains lateritic uplands supporting open-forest of jarrah and marri; in the valleys the vegetation is dominated by open-woodland of wandoo with a complex of swamp vegetation on the moister sites ranging from shrubland to open-woodland or paperbark. The MPA provides a representative range of vegetation of the eastern portion of the Collie River system, which elsewhere has been cleared for agriculture.

Recommendations:

- C94.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Bennelaking MPA.
- C94.2 That Reserve C31088 and the temporary Water Reserve at the south-east corner of Reserve C31088 be cancelled and their areas added to State Forest to be managed as part of Bennelaking MPA.
- C94.3 That the western portion of State Forest be managed as part of Bennelaking MPA.



LEGEND
 AREA BOUNDARY
 M.P.A.

LANDS DEPARTMENT PUBLIC PLAN No.
 414D /40 Kirup Townsite
 DCE Ref.No K11

SHIRE OF
 DONNYBROOK BALINGUP

0 2
 kilometres

Figure 67

C95.3 That the freehold land held in the name of the Conservator of Forests be managed as if part of Mullalyup MPA.

C96 RESERVE C29121, WILGA

The recommended area is situated about 2km south-east of Wilga and comprises Reserve C29121, for Conservation of Flora, not vested (Figure 68).

The land is flat to gently undulating and mainly lateritic with some pockets of sand. The vegetation of the uplands includes open-forest of jarrah and marri with an understorey of bull banksia that also contains prickly bitter-pea and hairy flag. On the valley slopes, yarri, white myrtle, honeybush, *Dampiera alata* and *Synaphea petiolaris* are present. Flooded gum and swamp banksia occur on the valley floors. Although dieback is present, the Reserve is mostly in good condition and is valuable, despite its small size, since the characteristic valley vegetation is severely affected by dieback elsewhere.

Recommendation:

C96.1 That the purpose of Reserve C29121 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

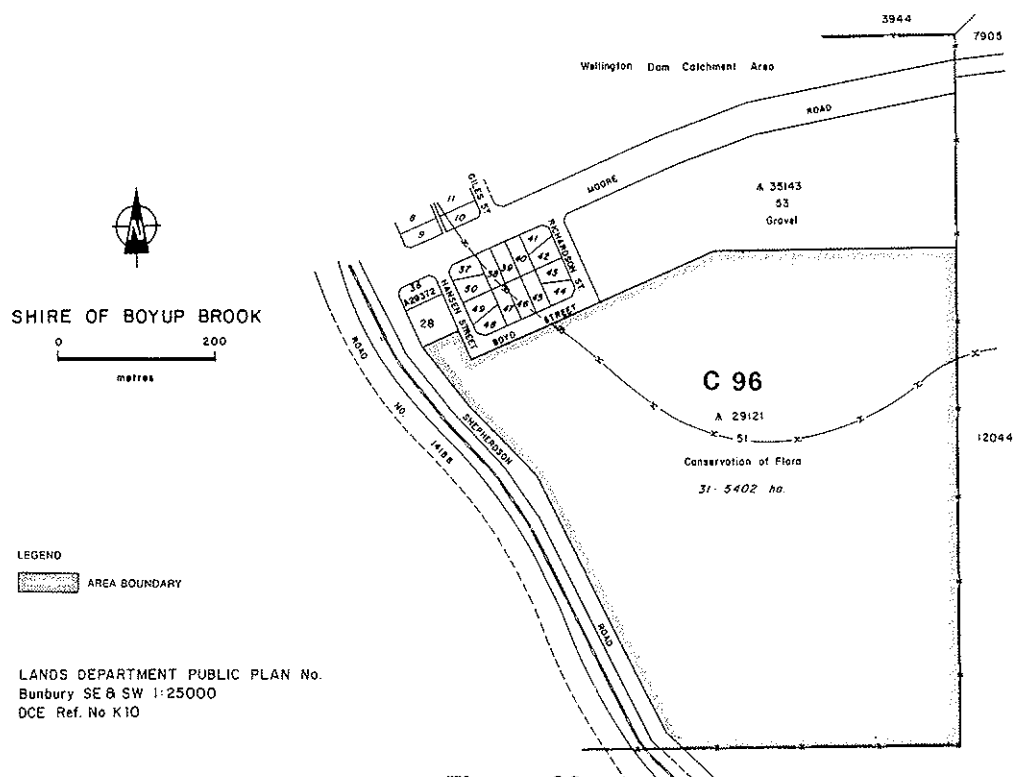


Figure 68

C97 ST. JOHN BROOK MANAGEMENT PRIORITY AREA

The recommended area is situated about 70km south of Bunbury and most of it comprises State Forest, being St. John Brook Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserve C13276, for Road Approach to Ford, not vested; Reserve C13290, for Railway Water Supply, not vested; and Wellington Locations 6881, 8979 and 9946, privately owned freehold land (Figure 69).

The MPA contains a potential dam site and the construction of a reservoir on St. John Brook may be considered in the future by the PWD.

Broad depressions support open-forest of jarrah and marri and open woodland of banksia while the steeper valleys support woodland of paperpark with shrub species including basket flower, semaphore sedge, white myrtle and pineapple bush. The valleys associated with St. John Brook and other tributaries of the Blackwood River support a fringing woodland of flooded gum and yarri. The uplands are covered in open-forest of jarrah and marri with a well-defined second storey of bull banksia, sheoak, snottygobble and woody pear. Because many of the plant species of this area are not found in the Darling Plateau, this region is floristically unique.

The recommended area contributes to open space of regional significance along St. John Brook and the Blackwood River (see Figure 1, Chapter 4) because of its high conservation and recreation values. Not all land under the various tenures in the area has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination. Important management considerations include: the control of wild pigs; and the management of recreation activities.

Recommendations:

- C97.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C97.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to St. John Brook MPA.
- C97.3 That Reserves C13276 and C13290 be cancelled and their area added to State Forest to be managed as if part of St. John Brook MPA.

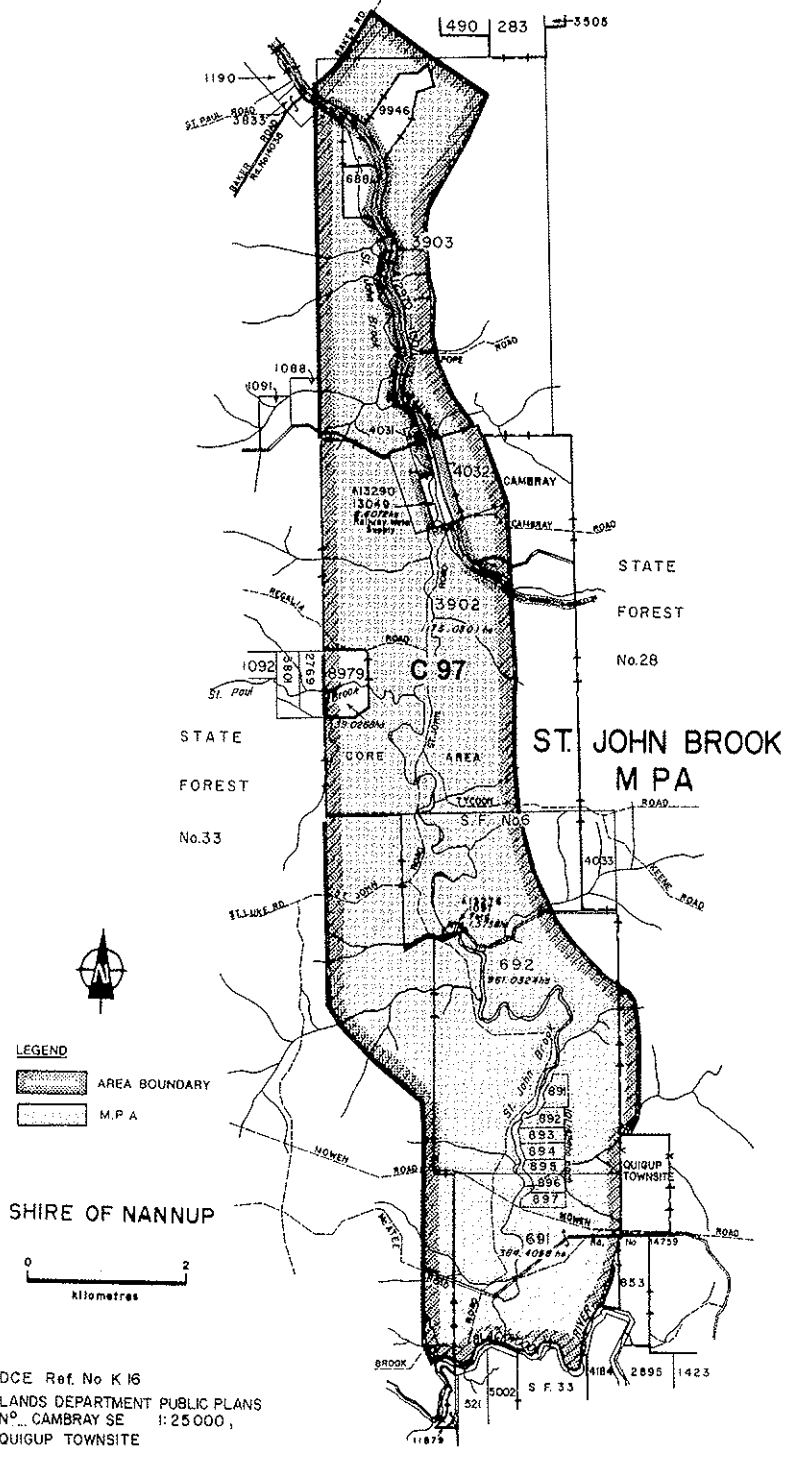


Figure 69

C98 RESERVES A25446 AND A3412, BLACKWOOD RIVER

The recommended area is situated alongside the Blackwood River about 10km south-west of Balingup, and comprises Reserve A3412, for Resting Place for Travellers and Stock, not vested; Reserve A25446, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; and part of Wellington Location 94, freehold land held in the name of the Conservator of Forests (Figure 70A).

Balingup Brook is a potential source of water supply, and water levels may be affected by any dams built upstream. The area may be affected by future requirements of the Balingup-Nannup Road. The northern section is affected by grazing.

Reserve A25446 extends 3.5km along the river and consists mostly of river flats with vegetation comprising *open-forest of flooded gum* with some paperbark. On the valley slopes there is *open-forest of jarrah and marri* with some yarri. There is a seasonal freshwater swamp lying partly within the reserve and partly within Wellington Location 94. Reserve A3412 is situated on the southern side of a bend in the Blackwood River and contains pleasant *open-woodland* with much regrowth of jarrah.

The area is valuable for recreation rather than conservation purposes. A loop track for vehicles leads in from the main road to a picnic and barbecue area, under the management of the Forests Department, on the banks of the river 300m downstream from the road bridge. The area would serve ideally as an overnight camping site or resting place for canoeists and river travellers.

The area contributes to the open space of regional significance which extends along the Blackwood River and Balingup Brook (see Figure 1, Chapter 4), because of its high recreation value and residual conservation value.

Recommendations:

- C98.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C98.2 That Reserve A3412 be vested in the Conservator of Forests and that any management plan for the Reserve be prepared in consultation with the Shire of Donnybrook — Balingup.

C99 GREENBUSHES MANAGEMENT PRIORITY AREA

The recommended area is situated a few kilometres to the south and west of Greenbushes and comprises State Forest, Timber Reserve 155/25 and parts of Locations 947 and 2240, freehold land held in the name of the Conservator of Forests, and has been designated in the Forests Department's Working Plan No. 87 as Greenbushes Management Priority Area. The management priority of the MPA is conservation of flora, fauna and landscape (Figures 70A and 70B).

The MPA has potential for bauxite, tin, tantalite, base metals and pegmatite minerals. It may be affected by future requirements for the South Western Highway.

Greenbushes MPA consists of three quite separate parcels of land, each almost totally surrounded by agricultural development. The MPA is especially important for its areas of uncut forest of jarrah and marri which are representative of the Blackwood region. While the area's vegetation is dominated by *open-forest of jarrah and marri*, this is replaced by yarri in the gullies and woodland of flooded gum and paperbark along the streams.

The recommended area contributes to the open space of regional significance which extends along the Blackwood River (see Figure 1, Chapter 4), because of its high conservation value.

Recommendations:

- C99.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- C99.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Greenbushes MPA.
- C99.3 That Timber Reserve 155/25 be cancelled and its area added to State Forest to be managed as part of Greenbushes MPA.

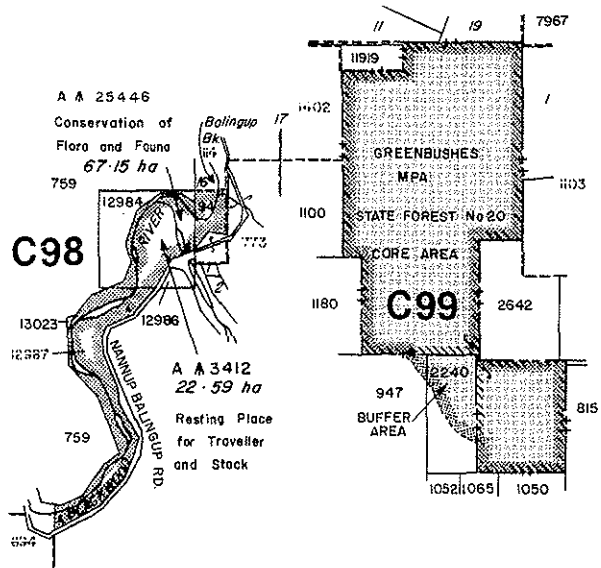


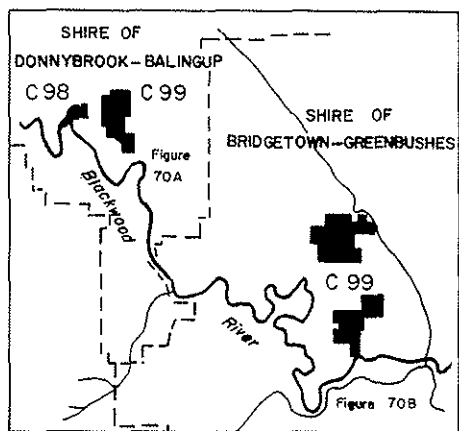
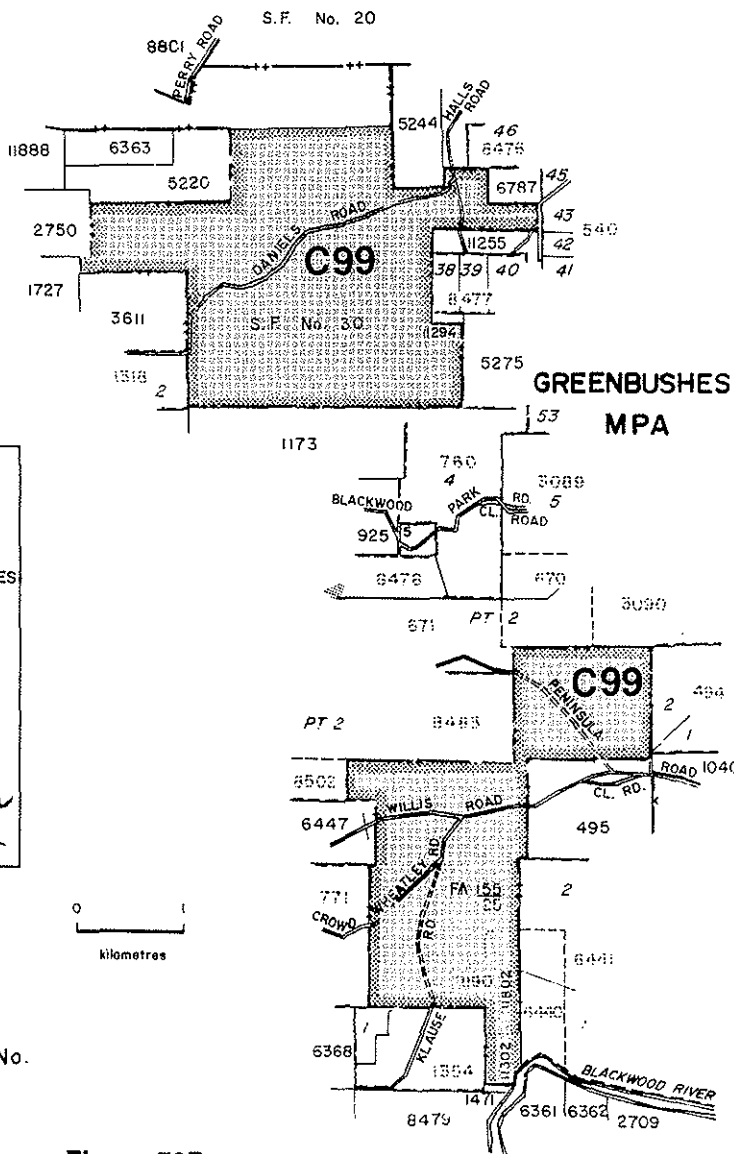
Figure 70A

SHIRES of
BRIDGETOWN - GREENBUSHES
and
DONNYBROOK - BALINGUP



LEGEND

- AREA BOUNDARY
- M.P.A.



LANDS DEPARTMENT PUBLIC PLAN No.
Padbury (10 000) BG 29/6-1, 6-2
Balingup NE (1:25 000)
DCE Ref. No K12 & K13

Figure 70B

C100 DALGARUP MANAGEMENT PRIORITY AREA

The recommended area is situated outside the System 6 boundary, about 16km east of Nannup and within System 2. It comprises State Forest, being Dalgarup Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape (Figure 71).

The MPA's uplands support open-forest of jarrah and marri while the valleys' vegetation ranges from open-forest of yarri, jarrah and marri to tall open-forest of karri. Understorey species include karri-hazel, white myrtle, water bush and bracken. The MPA is notable for containing the northernmost occurrence of karri. The Bibbulmun Track passes along the western boundary of the MPA.

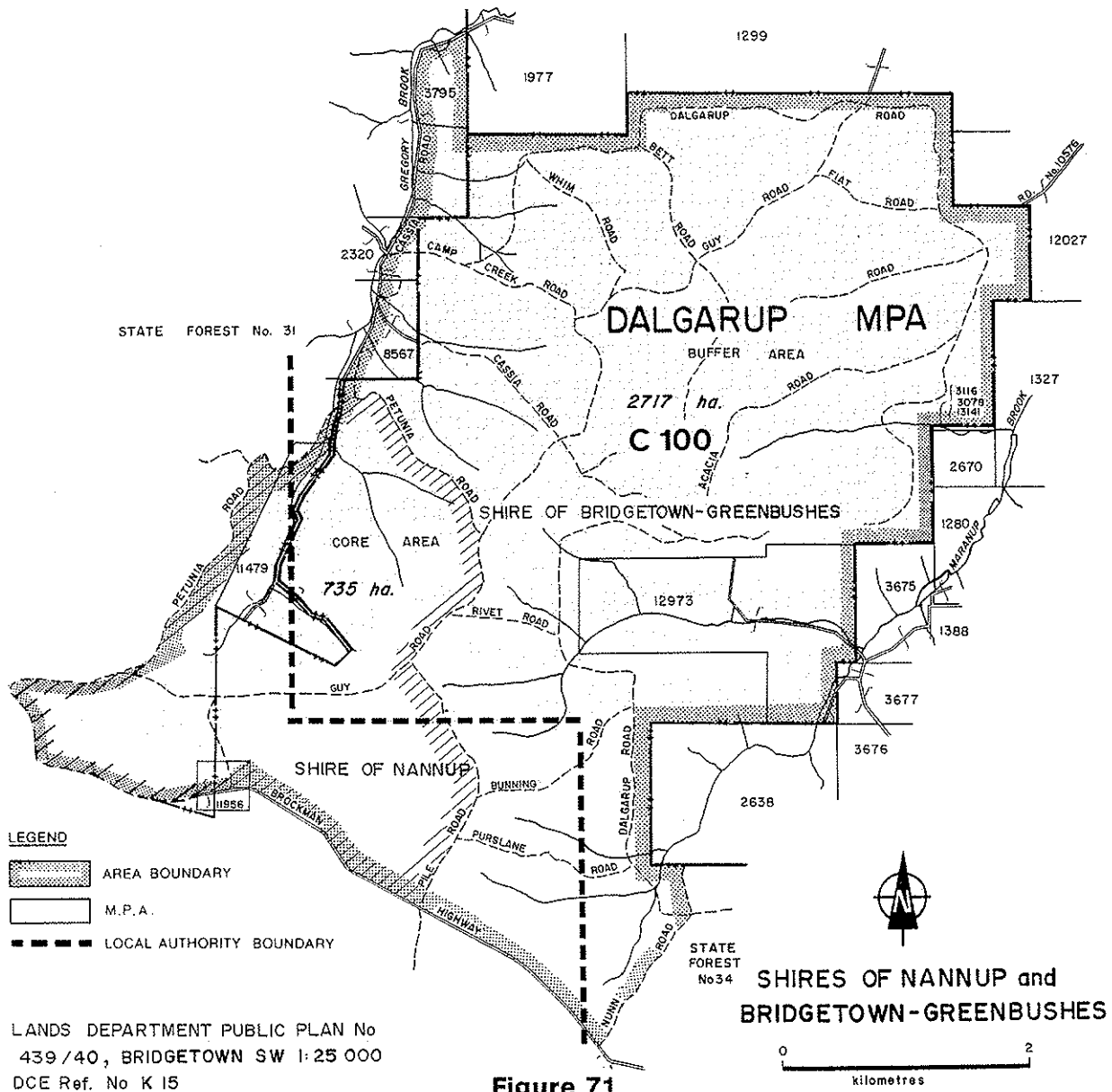
The area was logged during 1930-1950. There is some dieback in the gullies and forest quarantine is needed to reduce its spread. Recreational use of the area would not be appropriate.

The recommended area contributes to open space of regional significance extending along the Blackwood River (see Figure 1, Chapter 4), because of its high conservation value.

Recommendations:

C100.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

C100.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Dalgarup MPA.



Chapter 9

RECOMMENDATIONS FOR METROPOLITAN LOCALITIES

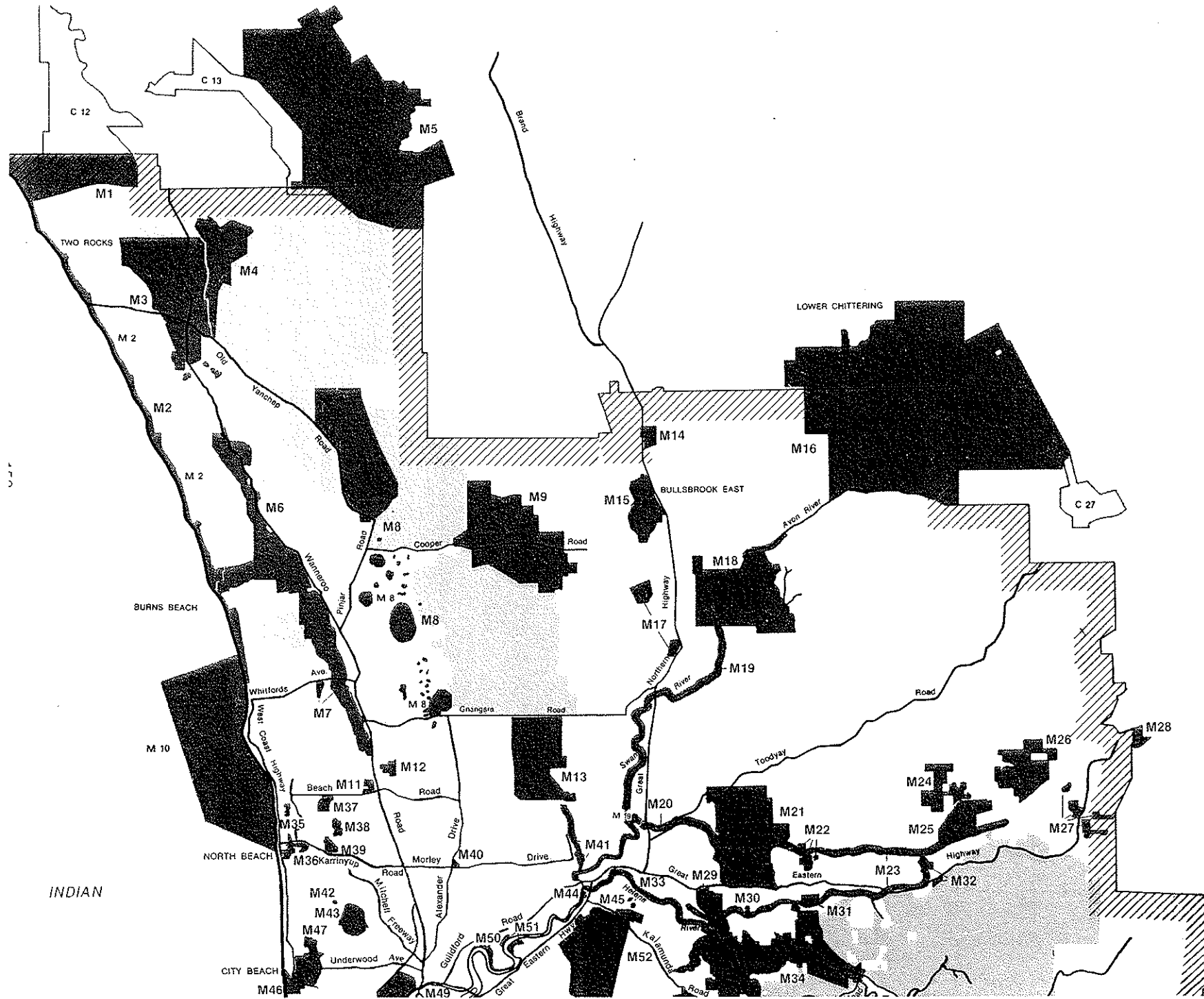
9.1 General

As indicated in Chapter 7, detailed recommendations have been developed for 108 metropolitan localities. Each locality is listed below. Figure 73 shows the distribution of the localities and Table 2 indicates how each metropolitan locality is affected by the general principles and recommendations developed in Part I. Section 9.2 which follows contains specific information and recommendations, including a detailed map, for each locality.

Locality Number	Figure
M1 Two Rocks Open Space	75
M2 Coastal strip from Two Rocks to Burns Beach	75
M3 Yanchep National Park	76
M4 Ridges Mangement Priority Area (MPA 15.2*)	76
M5 Yeal Nature Reserve	77
M6 Neerabup National Park	78
M7 Lakes Joondalup and Goollelal	79
M8 Wanneroo Wetlands — Eastern Chain	80A to C
M9 Melaleuca Management Priority Area (MPA 15.1)	81
M10 Offshore Reefs — Ocean Reef to Trigg	82
M11 Warwick Woodland	83
M12 Reserve A20091, Marangaroo	83
M13 Whiteman Park (Mussel Pool)	84
M14 Reserve C1654, Bullsbrook	85
M15 Pearce Aerodrome	85
M16 Avon Valley National Park	86
M17 Ellen Brook and Twin Swamps Wildlife Sanctuaries, Upper Swan	87
M18 Walyunga National Park	91
M19 Swan River — Guildford to Walyunga National Park	89
M20 Jane Brook	90
M21 John Forrest National Park	91
M22 Reserves A12453 and C12085, Parkerville	92
M23 Reserves along disused Railways — Midland to Chidlow	93A & B
M24 Reserves north-west of Chidlow	94
M25 Lake Leschenaultia	94
M26 Reserves north-east of Chidlow	95
M27 Reserves north of Lake Manaring	96
M28 Reserve C14278, east of Wooroloo	97
M29 Greenmount National Park	98
M30 Reserves A1847 and C31178, Darlington	99
M31 Reserve C32727, Mundaring	100
M32 Reserves C18130 and C34103, Sawyers Valley	101
M33 Helena River — Guildford to Darlington	102
M34 Helena Valley	103
M35 Star Swamp, North Beach	104
M36 Reserves near Karrinyup	105
M37 Carine Swamps	106
M38 Careniup Swamp, Gwelup	107
M39 Lake Gwelup	108
M40 Dianella Open Space	109
M41 Bannett Brook	110
M42 Jackadder Lake, Woodlands	111
M43 Herdsman Lake	112
M44 Swan River Backwater, South Guildford	113
M45 Hazelmere Lakes	114
M46 Swanbourne Beach and Rifle Range	115
M47 Bold Park, City Beach	116
M48 Lake Claremont	117
M49 Kings Park	118

M50	Swan River Foreshore, Maylands	119
M51	Swan River Saltmarshes, Belmont and Maylands	119
M52	Perth Airport	120
M53	Reserve C29880, Forrestfield	121
M54	Foreshore Reserve, Peppermint Grove	122
M55	Buckland Hill, Mosman Park	123
M56	Foreshore Reserves, Mosman Park	124
M57	Minim Cove Foreshore, Mosman Park	125
M58	Blackwall Reach Foreshore, Bicton	126
M59	Point Resolution Foreshore, Dalkeith	127
M60	Aquatic Reserve, South Perth	128
M61	Aquatic Reserve, Attadale	129
M62	Pelican Point, Crawley	130
M63	Harry Sandon Park, Attadale	129
M64	Wireless Hill Park, Ardross	131
M65	Point Heathcote Foreshore, Applecross	132
M66	Mount Henry, Manning	133
M67	Canning River Foreshore, Salter Point to Clontarf	134
M68	Canning River, Riverton Bridge to Nicholson Road Bridge	135
M69	Kenwick Swamp	136
M70	Heathland, Wattle Grove	137
M71	Cantonment Hill, Fremantle	138
M72	Sir Frederick Samson Park, Samson	139
M73	Booragoon Lake	140
M74	Bull Creek	141
M75	Upper Canning and Southern Rivers	142A & B
M76	Mary Carroll Park, Gosnells	143
M77	Reserve C22865, Kalamunda, and Reserve C20641, Bickley	144
M78	Reserve C10601, Carmel	145
M79	Reserve C21172, Canning Mills	145
M80	Darling Scarp	146A to F
M81	Reserves C19662 and C32728, Karragullen	147
M82	Reserve C5704, Wungong	148
M83	Reserve C2457, Mundijong	149
M84	Gooralong Management Priority Area (MPA 8.4)	150
M85	Serpentine National Park	150
M86	Karnet Management Priority Area (MPA 3.8)	150
M87	Serpentine Management Priority Area (MPA 8.7)	150
M88	Land north of Keysbrook	151
M89	Woodland east of Keysbrook	151
M90	Quarantine Station and Explosives Magazine Reserve, Woodman Point	152
M91	Reserve A24309, Coogee	153B
M92	Cockburn Wetlands — Western Chain	153A & B
M93	Cockburn Wetlands — Eastern Chain	154
M94	Jandakot Airport	155
M95	Forrestdale Lake	156
M96	Garden Island	157
M97	Reserve C36110, Wandi	158
M98	Reserve C31874, Casuarina	158
M99	Reserve A25886, west of Byford	158
M100	Reserve C28167, south-west of Byford	158
M101	Cape Peron, Shoalwater Bay and Warnbro Sound	159
M102	Lake Richmond, Rockingham	160
M103	Lakes Coo loongup and Walyungup	161
M104	Reserves C31102 and C33581, Leda	162
M105	Lowlands Property, west of Serpentine	163
M106	Point Kennedy	164
M107	Peelhurst, Singleton and Madora	164
M108	Goegrup Lakes	165

* Forests Department Reference Number



- M1 Two Rocks Open Space
- M2 Coastal strip from Two Rocks to Burns Beach
- M3 Yanchep National Park
- M4 Ridges Management Priority Area (MPA 15.2)
- M5 Yeal Nature Reserve
- M6 Neerabup National Park
- M7 Lakes Joondalup and Goolfeal
- M8 Wanneroo Wetlands - Eastern Chain
- M9 Melaleuca Management Priority Area (MPA 15.1)
- M10 Offshore Reefs - Ocean Reef to Trigg
- M11 Warwick Woodland
- M12 Reserve A20091, Marangaroo
- M13 Whiteman Park (Mussel Pool)
- M14 Reserve C1654, Bullsbrook
- M15 Pearce Aerodrome
- M16 Avon Valley National Park
- M17 Ellen Brook and Twin Swamps Wildlife Sanctuaries, Upper Swan
- M18 Walyunga National Park
- M19 Swan River - Guildford to Walyunga National Park
- M20 Jane Brook
- M21 John Forrest National Park
- M22 Reserves A12453 and C12085, Parkerville
- M23 Reserves along disused Railways - Midland to Chidlow
- M24 Reserves north-west of Chidlow
- M25 Lake Leschenaultia
- M26 Reserves north-east of Chidlow
- M27 Reserves north of Lake Manaring
- M28 Reserve C14278, east of Wooroloo
- M29 Greenmount National Park
- M30 Reserves A1847 and C31178, Darlington
- M31 Reserve C32727, Mundaring
- M32 Reserves C18130 and C34103, Sawyers Valley
- M33 Helena River - Guildford to Darlington
- M34 Helena Valley
- M35 Star Swamp, North Beach
- M36 Reserves near Karrinyup
- M37 Carline Swamps
- M38 Carenlup Swamp, Gwelup
- M39 Lake Gwelup
- M40 Dianella Open Space
- M41 Bennett Brook
- M42 Jackadder Lake, Woodlands
- M43 Herdsman Lake
- M44 Swan River Backwater, South Guildford
- M45 Hazelmere Lakes
- M46 Swanbourne Beach and Rifle Range
- M47 Bold Park, City Beach
- M48 Lake Claremont
- M49 Kings Park
- M50 Swan River Foreshore, Maylands
- M51 Swan River Saltmarshes, Belmont and Maveland

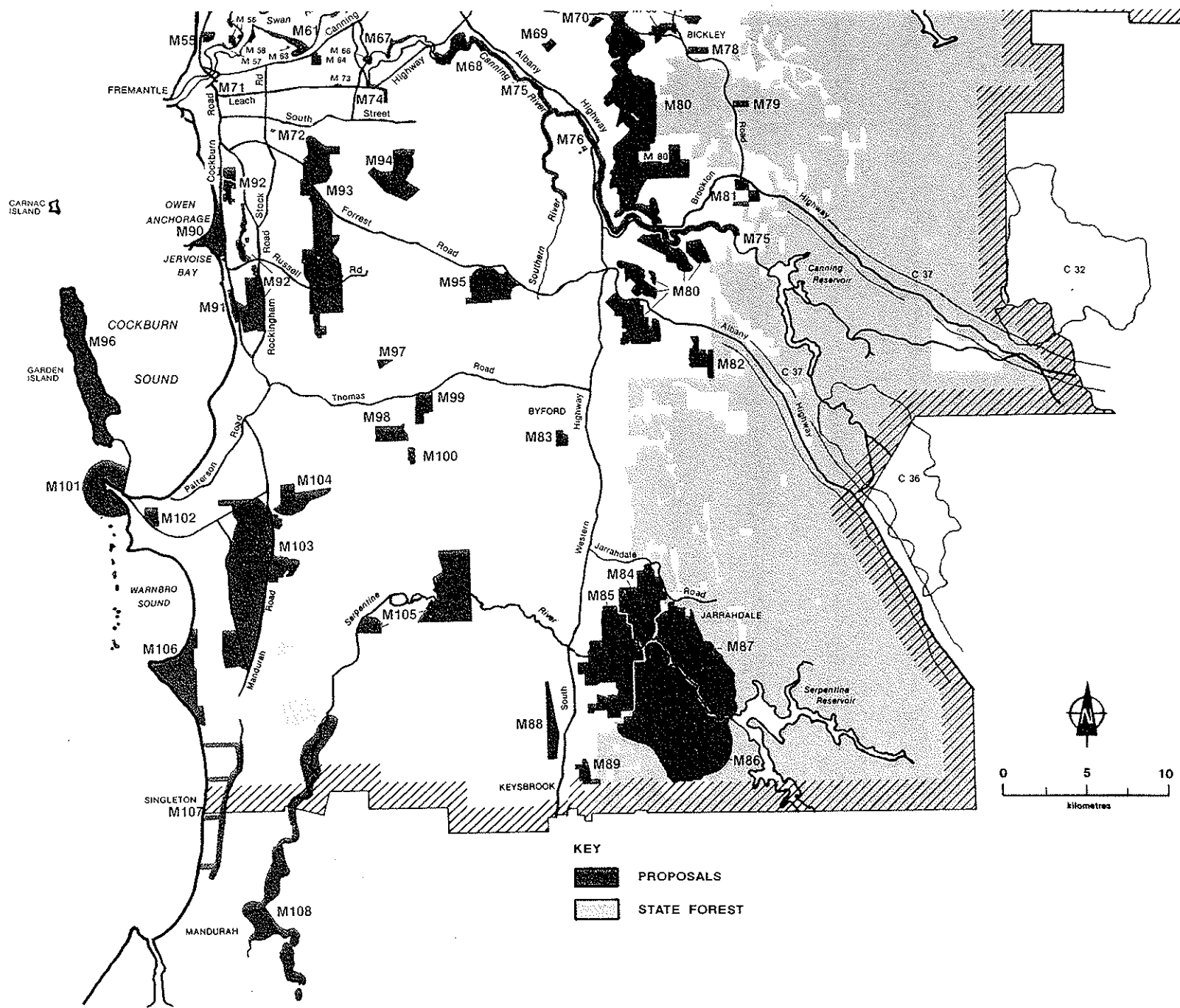


Figure 73 Metropolitan Localities Map.

- M54 Foreshore Reserve, Peppermint Grove
- M55 Buckland Hill, Mosman Park
- M56 Foreshore Reserves, Mosman Park
- M57 Minim Cove Foreshore, Mosman Park
- M58 Blackwall Reach Foreshore, Bicton
- M59 Point Resolution Foreshore, Dalkelth
- M60 Aquatic Reserve, South Perth
- M61 Aquatic Reserve, Attadale
- M62 Pelican Point, Crawley
- M63 Harry Sandon Park, Attadale
- M64 Wireless Hill Park, Ardross
- M65 Point Heathcote Foreshore, Applecross
- M66 Mount Henry, Manning
- M67 Canning River Foreshore, Salter Point to Clontarf
- M68 Canning River, Riverton Bridge to Nicholson Road Bridge
- M69 Kenwick Swamp
- M70 Heathland, Wattle Grove
- M71 Cantonment Hill, Fremantle
- M72 Sir Frederick Samson Park, Samson
- M73 Booragoon Lake
- M74 Bull Creek
- M75 Upper Canning and Southern Rivers
- M76 Mary Carroll Park, Gosnells
- M77 Reserve C22865, Kalamunda, and Reserve C20641, Bickley
- M78 Reserve C10601, Carmel
- M79 Reserve C21172, Canning Mills
- M80 Darling Scarp
- M81 Reserves C19662 and C32728, Karragullen
- M82 Reserve C5704, Wungong
- M83 Reserve C2457, Mundijong
- M84 Gooralong Management Priority Area (MPA 8.4)
- M85 Serpentine National Park
- M86 Karnet Management Priority Area (MPA 3.8)
- M87 Serpentine Management Priority Area (MPA 8.7)
- M88 Land north of Keysbrook
- M89 Woodland east of Keysbrook
- M90 Quarantine Station and Explosives Magazine Reserve, Woodman Point
- M91 Reserve A24309, Coogee
- M92 Cockburn Wetlands - Western Chain
- M93 Cockburn Wetlands - Eastern Chain
- M94 Jandakot Airport
- M95 Forrestdale Lake
- M96 Garden Island
- M97 Reserve C36110, Wandi
- M98 Reserve C31874, Casuarina
- M99 Reserve A25886, west of Byford
- M100 Reserve C28167, south-west of Byford
- M101 Cape Peron, Shoalwater Bay and Warnbro Sound
- M102 Lake Richmond, Rockingham
- M103 Lakes Cooloongup and Walyungup
- M104 Reserves C31102 and C33581, Leda
- M105 Lowlands Property, west of Serpentine
- M106 Point Kennedy
- M107 Peelhurst, Singleton and Madora
- M108 Goegrup Lakes

153

TABLE 2: STRATEGIES APPLIED TO METROPOLITAN LOCALITIES

This table indicates which of the metropolitan localities are affected by the general principles and recommendations outlined in Part I.

Locality	Land Tenure	Locality consists wholly or in part of an MPA	Recommended to form Regional Park, or part thereof (Rec. 15 and 16)	Includes Reserve(s) proposed for limited-term vesting	Includes Reserve(s) proposed for changes in purpose, vesting or class	Includes proposed new Reserve(s) — Land Act (L), Marine (M) or Aquatic (A)	Includes Reserve(s) proposed for inclusion of "water" in purpose	Preparation of Management Plans recommended	Extension of MRS Parks and Recreation Area recommended	Application of planning controls (Rec. 14) proposed
M1	Fr-pr		*						*	
M2	LAR; Fr-pr		*							
M3	LAR; Fr-pr		*						*	
M4	SF	*	*					*		
M5	vCI; LAR; Fr-C/With			*	*	L	*	*		
M6	LAR; Fr-pr		*		*		*		*	
M7	LAR; Fr-MRPA; Fr-pr; vCI; Lease		*						*	
M8	LAR; Fr-pr		*						*	
M9	SF; Fr-pr	*	*					*		
M10	No ownership		*			M		*		
M11	Fr-MRPA				*			*		
M12	LAR		*		*			*		
M13	Fr-pr; Fr-MRPA		*		*			*		
M14	LAR			*	*			*		
M15	Fr-C/With				*			*		
M16	LAR; vCI; Fr-pr		*	*	*	L		*		
M17	LAR									*
M18	LAR; Fr-pr; Fr-Crown		*					*		
M19	LAR; Fr-pr		*					*		
M20	LAR; Fr-pr							*		
M21	LAR; Fr-pr; Fr-MRPA		*		*			*		
M22	LAR				*			*		
M23	LAR				*			*		
M24	LAR		*		*			*		
M25	LAR; SF		*		*			*		
M26	LAR				*			*		
M27	LAR				*			*		
M28	LAR				*			*		
M29	LAR; Fr-MRPA		*					*		
M30	LAR				*			*	*	
M31	LAR; vCI				*	L		*		
M32	LAR				*			*		
M33	Fr-pr; LAR		*					*		
M34	LAR; vCI; Fr-MRPA; Fr-pr; SF		*		*	L	*	*		
M35	LAR; Fr-SHC; Fr-City of Stirling				*			*		
M36	LAR; Fr-MRPA				*			*		
M37	Fr-MRPA							*	*	
M38	Fr-pr							*		
M39	Fr-MRPA; LAR							*		

Table 2 (continued)

M40	Fr-MRPA; LA; Fr-pr									
M41	Fr-pr; LAR		*							
M42	Fr-City of Stirling; LAR									
M43	LAR; vCI; Fr-MRPA; Fr-pr; Lease	*						*		
M44	Fr-pr; Fr-MRPA		*					*	*	
M45	Fr-pr									*
M46	LAR; Fr-City of Perth; vCI; C/With Lease		*			L		*		
M47	Fr-City of Perth		*							
M48	Fr-Town of Claremont							*		
M49	LAR		*							
M50	LAR; Fr-pr; Fr-MRPA		*					*		
M51	LAR; Fr-MRPA; Fr-pr		*					*		
M52	Fr-C/With							*		
M53	LAR; Fr-pr								*	
M54	LAR		*					*		
M55	LAR; Fr-C/With							*		
M56	LAR; vCI		*			L		*		
M57	LAR; vCI		*			L		*		
M58	LAR		*		*			*		
M59	LAR		*		*			*		
M60	No ownership		*			A				
M61	No ownership		*			A		*		
M62	LAR		*		*	A		*		
M63	LAR				*			*		
M64	LAR							*		
M65	LAR		*					*		
M66	Fr-pr		*					*		
M67	LAR; Fr-pr		*					*	*	
M68	LAR; Fr-MRPA; Fr-pr		*		*			*		
M69	Fr-UWA					L		*		*
M70	Fr-pr									*
M71	Fr-City of Fremantle							*		
M72	Fr-City of Fremantle; LAR				*			*		
M73	LAR				*					
M74	LAR; vCI				*	L		*		
M75	LAR; Fr		*						*	
M76	LAR; Fr-pr				*					*
M77	LAR; Fr-MRPA				*			*		
M78	LAR				*		*	*		
M79	LAR						*	*		
M80	LAR; Fr-MRPA; Fr-pr; vCI		*			L			*	
M81	LAR				*					

KEY TO LAND TENURE

LAR — LAND ACT RESERVE (S)
 SF — STATE FOREST
 TR — TIMBER RESERVE(S)
 vCI — VACANT CROWN LAND

Fr — FREEHOLD LAND OWNERSHIP:
 pr — private
 MRPA — Metropolitan Region Planning Authority
 CF — Conservator of Forests
 C/With — Commonwealth of Australia
 Crown — Crown (State)
 MWA — Metropolitan Water Authority
 PWD — Public Works Department
 SEC — State Energy Commission
 DFW — Department of Fisheries and Wildlife

Table 2 (continued)

Locality	Land Tenure	Locality consists wholly or in part of an MPA	Recommended to form Regional Park, or part thereof (Rec. 15 and 16)	Includes Reserve(s) proposed for limited-term vesting	Includes Reserve(s) proposed for changes in purpose, vesting or class	Includes proposed new Reserve(s) — Land Act (L), Marine (M) or Aquatic (A)	Includes Reserve(s) proposed for inclusion of "water" in purpose	Preparation of Management Plans recommended	Extension of MRS Parks and Recreation Area recommended	Application of planning controls (Rec. 14) proposed
M82	LAR				*		*			
M83	LAR				*					
M84	SF; LAR; Fr-Crown; Fr-pr	*	*		* also LAR can. and added to SF					
M85	LAR; Fr-Crown; Fr-MWA; Fr-SEC; Fr-pr		*		*					
M86	SF; Fr-MWA; Fr-pr	*	*							
M87	SF; Fr-prF	*	*							
M88	Fr-pr									*
M89	Fr-pr; SF		*							*
M90	LAR; Fr-Crown		*		*					
M91	LAR		*					*		
M92	LAR; Fr-MRPA; Fr-pr		*						*	
M93	LAR		*							*
M94	Fr-C/With									
M95	LAR; Fr-pr		*							
M96	Fr-C/With									
M97	LAR			*	*		*			
M98	LAR				*		*			
M99	LAR									
M100	LAR									
M101	LAR; vCI		*		*	L, M		*		
M102	LAR, VCI, Fr-pr				*	L		*		
M103	LAR; Fr-MRPA; Fr-pr		*							
M104	LAR; vCI; Fr-pr			*	*	L				*
M105	Fr-pr		*							*
M106	LAR; vCI; Fr-pr		*						*	
M107	LAR; Fr-pr				*					*
M108	LAR; Fr-pr		*		*					

KEY TO LAND TENURE

LAR — LAND ACT RESERVE (S)
 SF — STATE FOREST
 TR — TIMBER RESERVE(S)
 vCI — VACANT CROWN LAND

Fr — FREEHOLD LAND OWNERSHIP:
 pr — private
 MRPA — Metropolitan Region Planning Authority
 CF — Conservator of Forests
 C/With — Commonwealth of Australia
 Crown — Crown (State)
 MWA — Metropolitan Water Authority
 PWD — Public Works Department
 SEC — State Energy Commission
 DFW — Department of Fisheries and Wildlife

LEGEND





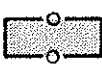
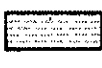

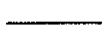
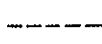
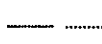
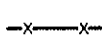
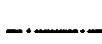
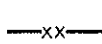
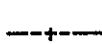
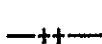

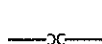


	AREA BOUNDARY
	SYSTEM 6 BOUNDARY
	METROPOLITAN REGION BOUNDARY
	LOCAL AUTHORITY BOUNDARY
	METROPOLITAN REGION SCHEME (M.R.S.) PARKS AND RECREATION RESERVE BOUNDARY
	NATIONAL PARK
	MANAGEMENT PRIORITY AREA (M.P.A.)
	SURVEYED BOUNDARY
	UNSURVEYED BOUNDARY
	GROUPED LOTS OR LOCATION BOUNDARY
	TOWNSITE BOUNDARY (under Land Act)
	TOWNSITE BOUNDARY (under Land Govt. Act)
	AGRICULTURAL AREA OR ESTATE BOUNDARY
	LAND DISTRICT BOUNDARY
	STATE FOREST BOUNDARY
	SUBDIVIDED CROWN LOT OR LOCATION BOUNDARY
	CATCHMENT AREA BOUNDARY
3517	LOCATIONS, TOWN OR SUBURBAN LOTS
2624	SUBDIVIDED LOCATIONS, TOWN OR SUBURBAN LOTS
128	AGRICULTURAL AREA, ESTATE AND SUBDIVISIONAL LOTS
	RESERVE SYMBOL
	TRIG. STATION or STANDARD SURVEY MARK

Figure 74 Legend for Boundaries and Symbols shown on Locality Figures.

9.2 SPECIFIC INFORMATION AND RECOMMENDATIONS

The following consists of a description of each locality in terms of land tenure, existing and proposed planning and management aspects, a description of the physical and biological environment and the locality's regional importance and relevant management considerations.

M1 TWO ROCKS OPEN SPACE

The recommended area is situated just north of Two Rocks, about 55km north of Perth and comprises part of lot M1688 (Location 1370), privately owned freehold land (Figure 75).

The MRPA's North-West Corridor Planning Structure proposes that the area be "reserved" in the future for Parks and Recreation under the Metropolitan Region Scheme. Also the area comes within the Wanneroo Shire's proposed Linear Lakes Landscape Enhancement Area.

There are SEC lines in the area, and future gas pipelines, powerlines and service roads for the proposed industrial area at Wilbinga may also affect it. The MRD states that it will require limestone from the area for use on the Perth-Lancelin (Wanneroo) Road. The area is likely to be affected in the long term by the Mitchell Freeway and the extension of the Beechboro-Gosnells Freeway. It may also be affected by future industrial development to the north.

The area contains vegetation of significant conservation value, some of it in a fragile state. The eastern third of the area carries open-woodland of tuart with associated banksias; occurring in small patches are low woodland of pricklybark and woodland of limestone marlock. The western two-thirds of the area carries a similar type of vegetation in the valleys and on the hillsides, while the hilltops are largely covered by open-heath dominated by *Melaleuca acerosa*.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation value and its importance for recreation which is expected to increase as the North-West Corridor develops. Coordinated management of the area is necessary, particularly along the coastal strip where the recreation intensity is at its greatest. Any management plan should give consideration to: encouraging the growth and regeneration of local indigenous flora; constructing beach facilities and access ways in such a way that the fragile dunes are protected; and the area's potential for water and minerals.

Recommendations:

- M1.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M1.2 That the Metropolitan Region Planning Authority's proposal, in the North-West Corridor Planning Structure, to "reserve" the area for Parks and Recreation under the Metropolitan Region Scheme is endorsed.

M2 COASTAL STRIP FROM TWO ROCKS TO BURNS BEACH

The recommended area extends along the coast from Mullaloo to Two Rocks and comprises Reserves C11630, for Camping, Park and Recreation, A12439 and C29694, both for Recreation, part of C20561, for Recreation and Purposes Incidental Thereto, C22915, for Recreation and Parking, C32978, C35890, C33444, C33431, all for Public Recreation, C34601 for Government Requirements, all vested in the Shire of Wanneroo; Reserves C29354 and C29352, both for Public Recreation, C25997, C30959 and C32510, all for Recreation, all not vested; and part of lots 1, 2, 4, 6 to 9, 614, 1010, 1029, M1482, M1503, M1689, M1722 (Location 1370), privately owned freehold land (Figure 75). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The MRPA has recommended in the North-West Corridor Planning Structure that an additional strip of coastal land, between 80m and 1km wide, should be "reserved" for Parks and Recreation under the Metropolitan Region Scheme. Wanneroo Shire Council has proposed that a continual coastal strip, at least 400m wide, should be reserved and that coastal planning policies should apply to a 1km wide coastal zone.

The Environmental Protection Authority has appointed a Coastal Planning and Management Adviser and a Coastal Management Coordinating Committee to develop management guidelines for the Western Australian coast.

There are MWA sewerage and drainage works in the area. The area may also be affected by future MWA works, a proposed regional road, and the construction of boat launching and other recreational facilities. The area south of Burns Beach has potential for sand and limestone, and there are existing mineral claims for limestone.

The area is important in conserving a diverse and relatively undisturbed coastal environment. The fragile sand dunes are important wildlife habitats and contain special features such as

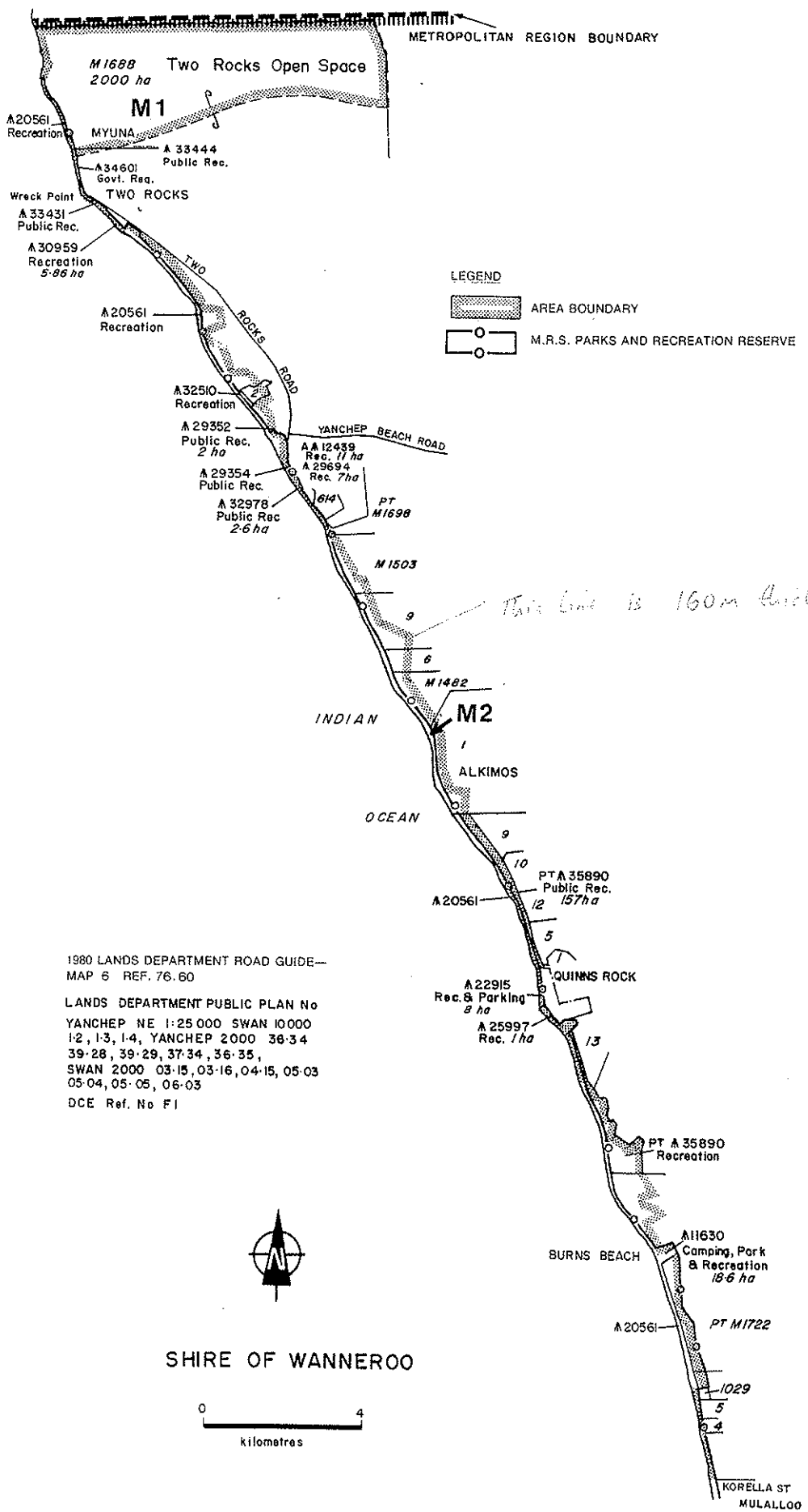


Figure 75

limestone pinnacles, a freshwater swamp and the wreck of the Alkimos. The section of the coastal strip south of Burns Beach is of special conservation value: the picturesque limestone sea cliffs carry some unusual species, one being *Frankenia pauciflora*, and the cliff tops carry closed-heath with the dominant species being *Spyridium globulosum*, rats' tails, quandong, chenille honeymyrtle and sword sedge. In the south, behind breaks in the limestone, there are sandy beaches behind which the foredunes support characteristic species such as *Tetragonia decumbens*, *Cakile maritima* and spinifex. Inland from the cliffs is open-scrub containing parrot bush, acacia and *Scaevola crassifolia*. Beyond the scrub is low woodland of slender banksia and Menzies' banksia with an understorey dominated by zamia, blackboy, prickly moses and buttercups.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation value and its popularity for recreation. Not all the land under the various tenures in the area has conservation and recreation as primary management objectives: to enhance these values the area's management structure requires coordination. Important management considerations include: preventing erosion; providing adequate car parks, boat ramps, life-saving stations and fenced access ways to the ocean; restricting recreation activities to those which are compatible with conservation of flora and fauna; and recognising the area's mineral potential.

Recommendation:

M2.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M3 YANCHEP NATIONAL PARK

The recommended area is situated about 50km north of Perth and comprises Reserve A9868, for Protection and Preservation of Caves and Flora, and for Health and Pleasure Resort, vested in the National Parks Authority; lot 1 (Location 1370), part of lots 3 and 4 (Location 2751), part of Location 2751 and parts of lots M1502, M1503 and M1689, privately owned freehold land (Figure 76). Most of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

There are SEC lines in the area and there are proposals for gas pipelines and construction of a major road, involving extension of the Mitchell Freeway on the west of the Park. The MRD states that it requires limestone from the area. There is an MRD marl pit in Pipidinny Swamp. MWA by-laws are applicable to the area, and minor lowering of groundwater levels could result from future MWA groundwater extraction.

The area is noteworthy for a series of wetlands. Loch McNess, the largest, is a permanent lake containing about 55ha of open water. The fringing vegetation consists of closed sedgeland; adjacent areas carry low open-forest of paperbark, sometimes associated with flooded gum, and beyond this is low woodland of swamp banksia. To the north and west of Loch McNess are areas of open-forest and woodland of tuart, and to the east and south are some woodlands of mixed tuart and jarrah and a few patches of marri. Associated with the eucalypt woodlands are low woodlands of banksia, of greatest extent in the north. Scattered throughout the Park are limestone outcrops carrying closed-scrub and closed- or open-heath, the principal species including parrot bush, spider-net grevillea and blackboy; near the edges of some of these outcrops are pockets of limestone marlock. In the north-western portion of the Park, principally in Swan Location 7953, are sand dunes covered mainly by melaleuca, with a few patches of rigid wattle, and some low woodland of slender banksia and tree smokebush in the valleys.

Of the other wetlands in the Park, Yonderup Lake lies south of Loch McNess and contains fern and sedge interrupted by paperbark and flooded gum and has an area of open water. Wilgarup Lake, which is seasonally inundated, lies further south and is densely covered with sedge and paperbark. Pipidinny Swamp is to the south-west of Wilgarup Lake and most of it has been drained, with meadows of fern and grass occurring in the north-eastern part. Beonaddy Swamp has been largely drained and is used for small agricultural holdings. The MRPA's North-West Corridor Planning Structure proposes that the latter two swamps become part of an Open Space linkage between Yanchep and Neerabup National Parks.

There are more than 100 limestone caves in the Park. Two of them, Crystal Cave and Yonderup Cave, are open to guided tours and are popular with the public: at times over 1,000 people visit them in a day.

Yanchep National Park is by far the most frequently visited National Park in Western Australia, with close to two thousand cars visiting in a peak day. Visitor impact is therefore very high and already a large proportion of the Park has been changed from its natural state to provide facilities. With the major growth of the Metropolitan Region being channelled into areas north of Perth, visitor demand can be expected to increase substantially although this will be difficult to ac-

commodate while the Park is confined to its present size. Addition of land north and south of Swan Location 7953 and the use of adjacent State Forest would help ease this problem.

Yanchep National Park contributes to open space of regional significance (see Figure 1, Chapter 4) because of its high conservation value, its capacity to attract large numbers of people and its relative proximity to the Perth urban area. Management of the Park will need to take account of increased usage and of the need to share some of the pressure of recreational usage with Ridges MPA(M4) to the east.

Recommendations:

- M3.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M3.2 That the Metropolitan Region Planning Authority's proposal in the North West Corridor Planning Structure to "reserve" additional land in this area for Parks and Recreation under the Metropolitan Region Scheme is endorsed.

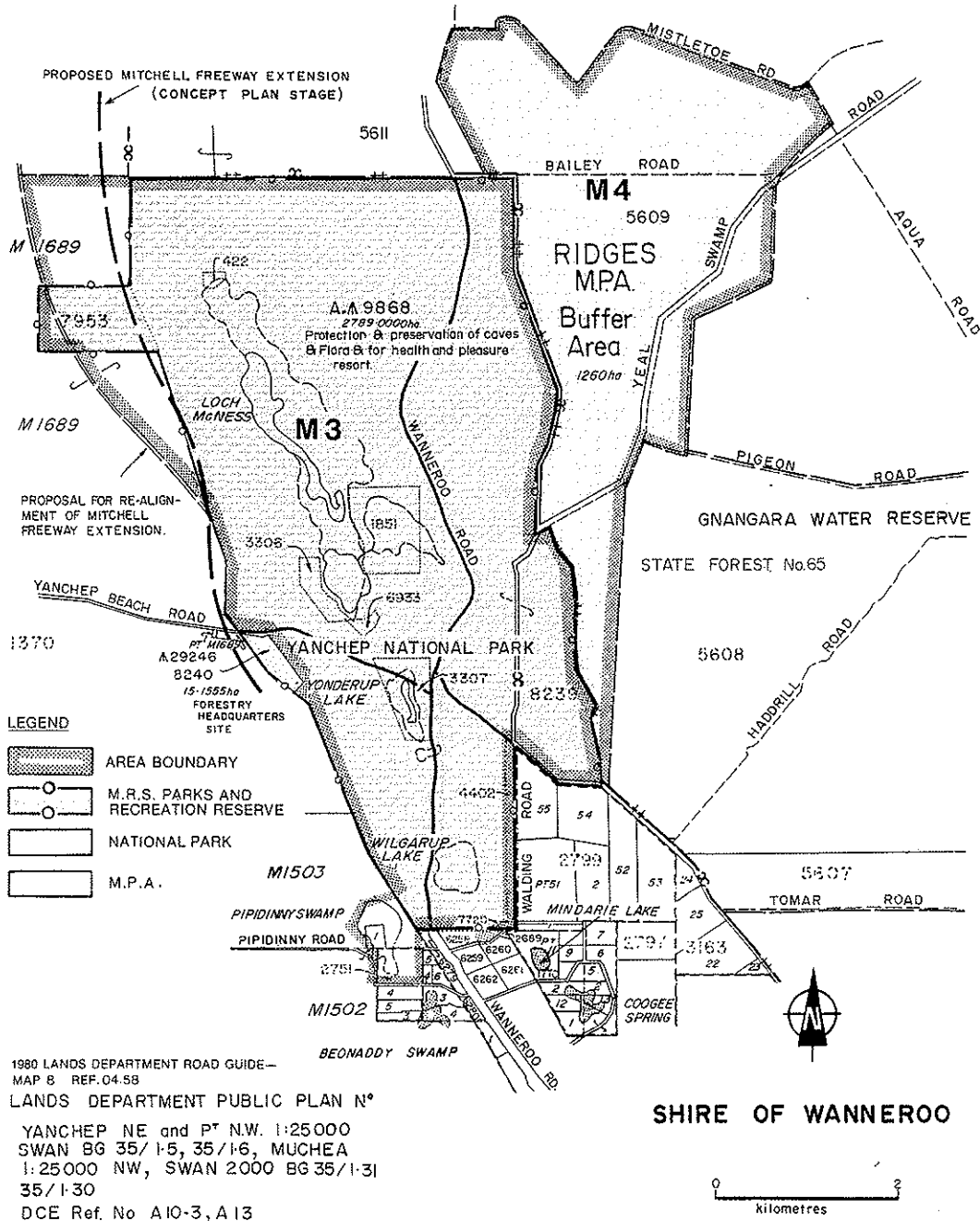


Figure 76

- M3.3 That the Metropolitan Region Planning Authority together with the Wanneroo Shire Council consider realignment of the proposed Mitchell Freeway extension further west so as to retain as much land as possible within both the National Park and Location 1689.
- M3.4 That the National Parks Authority and the Forests Department negotiate on the management of the adjoining areas of Yanchep National Park and Ridges Management Priority Area (M4) with a view to relieving the visitor pressure on the National Park.
- M3.5 That the Wanneroo Shire Council's Landscape Enhancement Area plan give consideration to protection of those wetlands within the recommended area to the south and south-west of Yanchep National Park.

M4 RIDGES MANAGEMENT PRIORITY AREA

The recommended area is situated about 50km north of Perth and abuts the eastern boundary of Yanchep National Park. It comprises State Forest, being Ridges Management Priority Area, and the MPA's priority use as designated in the Forests Department's Working Plan No.87 is conservation of flora, fauna and landscape (Figure 76).

The area is subject to a number of pressures:

- (i) Demand for limestone for road construction and cement manufacture. Swan Portland Cement Ltd. holds mineral claims covering 244ha and expects to begin quarrying within 6-8 years.
- (ii) The MPA is within the Gnangara Water Reserve and the Underground Water Pollution Control Area and Public Water Supply Area: it may be affected in the future by MWA groundwater extraction and Catchment Zone regulations.
- (iii) The Beechboro-Gosnells Freeway may be extended through the MPA.

The MPA consists of sand ridges, coastal limestone, broad sandy flats and swampy depressions, and serves to supplement and buffer Yanchep National Park. Vegetation ranges from heath and scrub through banksia and eucalypt woodland to shrubland and sedgeland. Low woodland of paperbark and holly-leaf banksia occurs in low-lying areas. There has been little impact on the area through logging and dieback.

Access to the area is by the relatively rough Yeal Swamp Road, and there has been little recreational use of the MPA to date. However, there is potential for this to increase in the future.

The recommended area has high conservation and recreation value and contributes to an area of open space of regional significance of which Yanchep National Park (M3) forms the larger part (see Figure 1, Chapter 4). Management of the area should take account of a need to relieve some of the recreational pressure on Yanchep National Park.

Recommendations:

- M4.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M4.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Ridges MPA.
- M4.3 That a joint management plan be prepared by the Forests Department and the National Parks Authority for the adjoining areas of Ridges MPA and Yanchep National Park.

M5 YEAL NATURE RESERVE

The recommended area is situated about 10km south-west of Gingin and comprises mostly vacant Crown land; it also includes Reserve C31241, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; Reserve C33784, for Government Requirements, not vested; and Location 8011 (Gingin Airfield), owned by the Commonwealth of Australia (Figure 77).

The area is within the Gnangara Water Reserve, the Underground Water Pollution Control Area and Public Water Supply Area. Reserve C31241 is within the Gingin Brook Catchment and Reserve C33784 is within the Ellen Brook Catchment. Water levels may be affected by MWA groundwater extraction; the area is close to the lines of pumping wells and MWA by-laws are applicable. There are SEC lines and a gas pipeline in the area and more such service corridors may affect it in the future. There are numerous mineral claims in the area. Mining for diatomite in Yeal Swamp has been approved by the W.A. Wildlife Authority under strict conditions — this would deepen the swamp and possibly minimise the effects of groundwater extraction.

The recommended area is of high conservation value, containing vegetation and soil types not represented in any other reserves. The section north-west of the airfield has deep pale grey sands with low woodland of banksia, Christmas tree and pricklybark, with some stands of jarrah and

marri, and a varied understorey including telegraph sedge and silky bloodflower. On moister sands and peats there is low woodland of holly-leaf banksia and closed-forest of paperbark, sometimes associated with flooded gum. North of the airfield there is woodland and open-woodland of marri, and low woodland of paperbark and swamp banksia. South of the airfield is a swampy tract with an unusual association of plants.

Recommendations:

- M5.1 That the vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna, and Water, vested for a limited term of 10 years in the W.A. Wildlife Authority (see Recommendations 7-12 incl., Chapter 3) and managed under a published management plan.
- M5.2 That access to the new Reserve (recommended in M5.1) for the purposes of exploration and evaluation of mineral potential be permitted where necessary under conditions specified in the vesting order which should be such as to protect the area's conservation value.

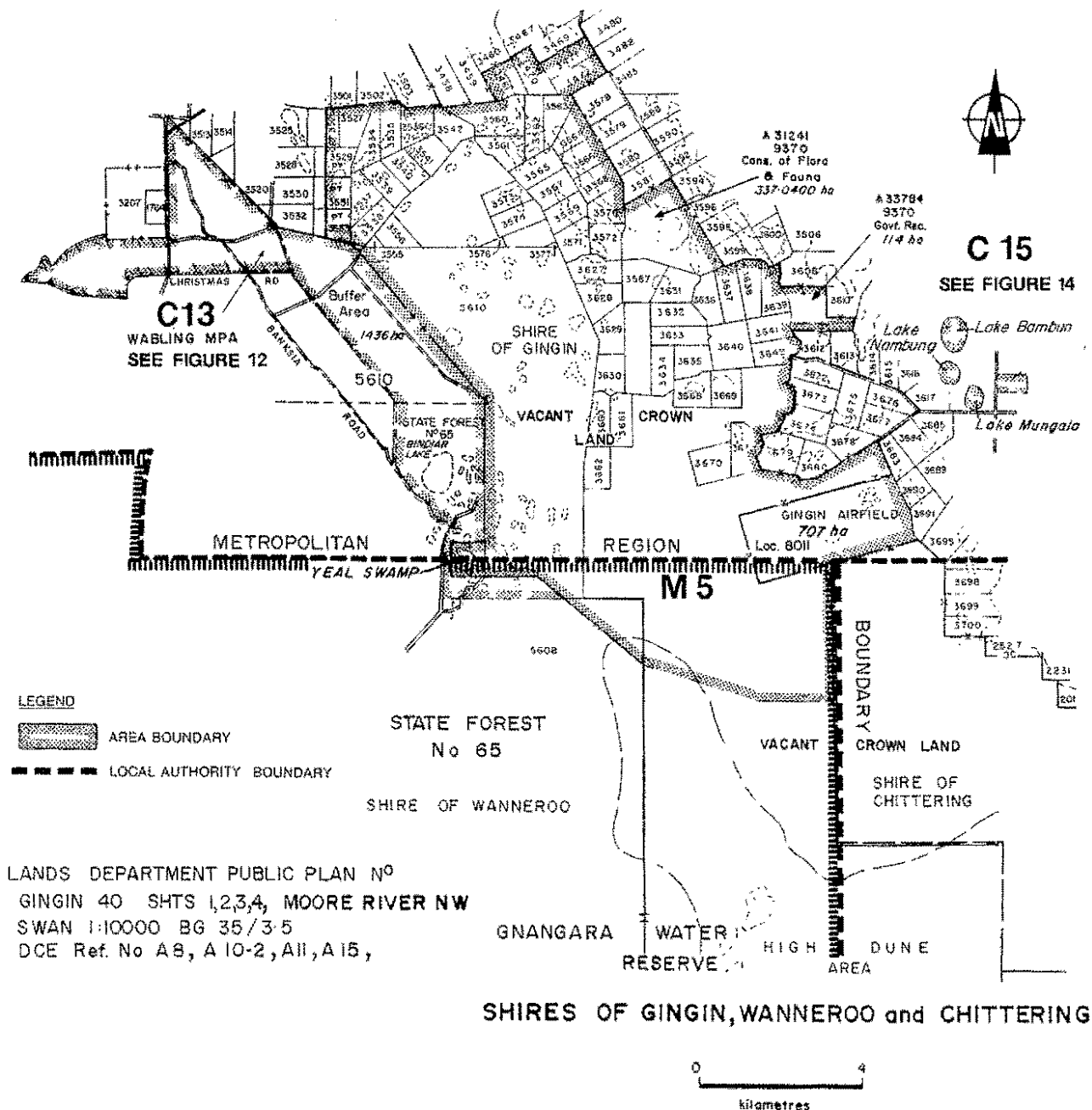


Figure 77

- M5.3 That the purpose of Reserve C33784 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority.
- M5.4 That Reserve C31241 be classified as Class A.
- M5.5 That the Commonwealth of Australia retain as much uncleared land within the Gingin Airfield as possible.

M6 NEERABUP NATIONAL PARK

The recommended area is situated just north of Lake Joondalup, extending along the west side of Wanneroo Road and comprises part of Reserve A27575, for National Park, and A24581, for Sanctuary for Fauna, both vested in the National Parks Authority; C33608, for Government Requirements, vested in the SEC; C21771, for Sanitary Site, not vested; part of Reserve C34537, for Water Supply, vested in the Minister for Water Resources; Reserve C13713, for Camping, and Reserves C25252 and C25253, for Quarry, all vested in the Shire of Wanneroo; Reserve C8398, for Access to Lake Nowergup, not vested; lot 4 and part of lots 1, 2 and 5 (Location 1149), part of Location 1708, lots 12 and 14 (Location 998), lots 18 and 29 and part of lots 2 and 17 (Location 1370), and lot 11 and part of lot 9 (proposed as a caravan park) of Location 107, all privately owned freehold land (Figure 78). Most of the area has been "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Neerabup National Park is close to the Underground Water Pollution Control and Public Water Supply Areas. The coastal strip is a potential source of groundwater supply and future MWA groundwater extraction will probably affect water levels. There are SEC lines in the area, and water mains and gas pipelines are proposed. The proposed Neerabup Reservoir may affect the area. There are proposals to adjust the boundaries of the Park to allow the Mitchell Freeway to run along its western boundary, and in one place it is proposed to build the Freeway within the Park. The proposed south-eastern extension of the Park has high-grade limestone potential and is covered by a number of mineral claims. The south-west area (lot 17) may be affected by a proposed rubbish disposal site which is subject to an Environmental Review and Management Programme. Lot 17 may be suitable for inclusion in the Park if it is properly rehabilitated.

The vegetation in the National Park north of Quinns Road is low woodland and open-woodland of sheoak, banksia, Christmas tree and pricklybark. There are a few patches of jarrah and one of tuart and a very diverse understorey of hakea, scrub sheoak, one-sided bottlebrush and prickly moses. Most of the heath is on an extensive area of limestone hills lying west of Wanneroo Road and comprises mainly wattle, cockies' tongues and blackboy. Reserve A24581 contains Lake Nowergup, the western part being fringed with jointed twig rush with bulrushes occurring on the northern shore. Bordering the sedgeland is woodland of flooded gum and swamp banksia. There is some low open-forest of paperbark, particularly in the south of the Reserve. The eastern and northern banks of the lake contain isolated pockets of seasonally inundated land which form an ideal habitat for birds.

Vegetation in the Park south of Quinns Road is mainly woodland of jarrah associated with sheoak, slender banksia and Menzies' banksia. There is also some open-woodland of tuart, and some limited occurrences of pricklybark and marri.

East of Lake Neerabup land has been acquired by the Crown to protect three sites of scientific and historical importance: Orchestra Shell Cave, Murray Cave, and the remains of Perth's earliest lime pits and kilns.

The area's value as a remnant of the natural landscape is enhanced by its position alongside Wanneroo Road where it is highly visible to passing motorists.

The Park is valuable in providing for recreational activities such as picnicking, walking and nature study. Recreational pressure is likely to increase as urban growth continues, the Park forming a long north-south strip which will be readily accessible to many residents of the North-West Corridor.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation value and its proximity to Perth residential areas.

The long narrow shape of the Park makes management difficult and in particular poses problems in the development of recreational facilities. These problems could be partially alleviated by the addition to the Park of the two areas to the south-east and south-west proposed by the MRPA for "reservation" in the North-West Corridor Planning Structure. The addition of the two areas would also give the Park improved representation of the local ecosystems.

Recommendations:

- M6.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

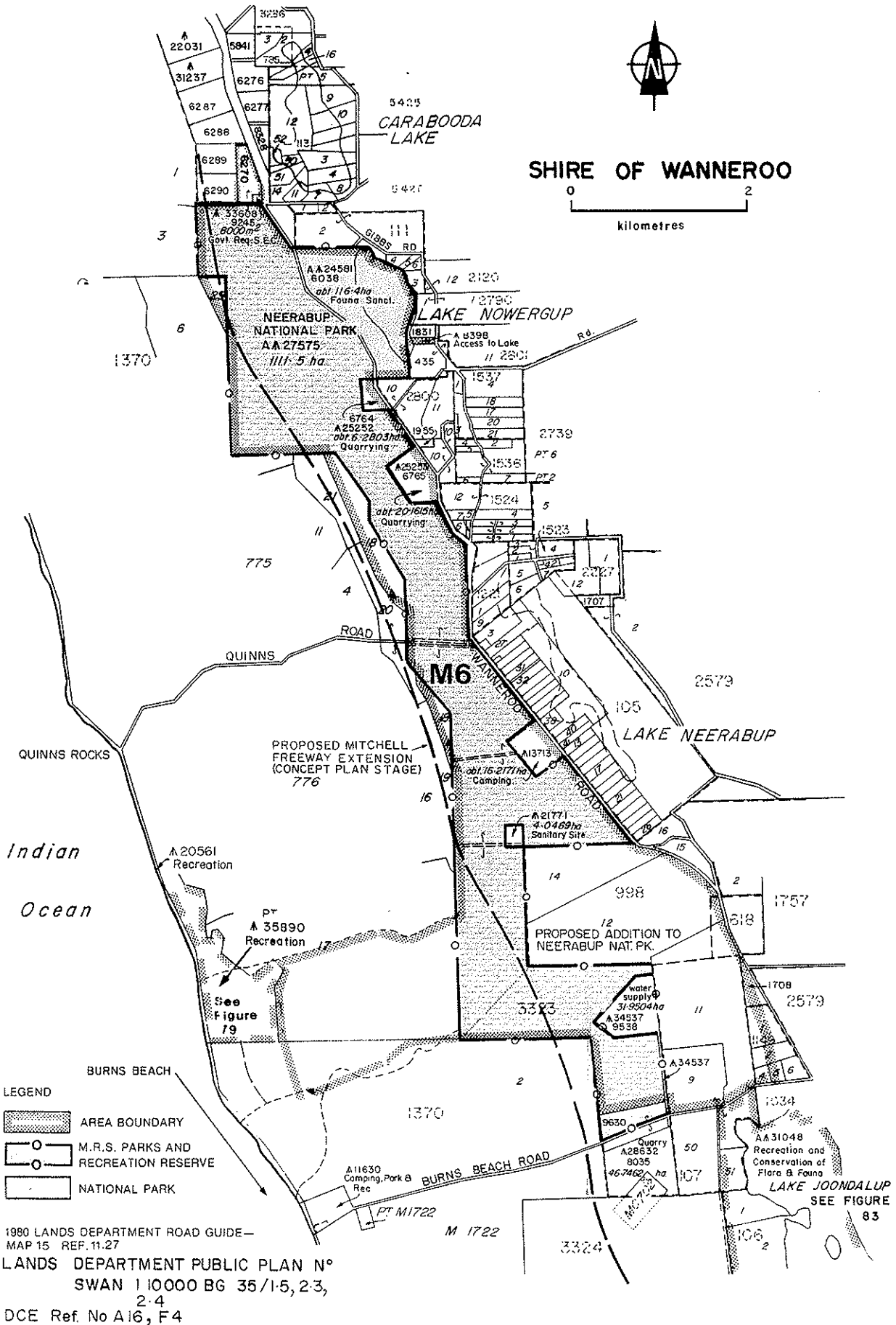


Figure 78

- M6.2 That the respective purposes of Reserves C13713, C25252 and C25253 be amended to *Parkland and Water*.
- M6.3 That the Metropolitan Region Planning Authority consider "reserving" those portions within the recommended area not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

M7 LAKES JOONDALUP AND GOOLLELAL

The recommended area is situated west of Wanneroo Road, is approximately 24km long with an average width of about 1km, and comprises Reserves A31048, for Recreation and Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority and the Shire of Wanneroo; A21708, for Protection of Flora and Fauna, not vested; and Wanneroo Estate lots 7 and 8, owned by the MRPA (**Lake Joondalup**); Reserves C28544 and C34617, for Recreation, C32768, C33204, C33206 and C35577 for Public Recreation, and part of Reserve C834 for Camping and Recreation, all vested in the Shire of Wanneroo; and C21176, for Forestry Purposes (Pine Seed Orchard), vested in the Conservator of Forests, and lots 9 and 51 (Perthshire Location 107), part of lot 2 (Perthshire Location 106), lot 1 (Perthshire Location 101), lot 1 (Perthshire Location 108), part of Perthshire Location 109, Locations 2369 and 2512, lots 30 and 7 (Location 3154), part of Location 1513, part of lots 3 and 4, lots 73 and 505 (Wanneroo Estate lot 10), lot 34 (Wanneroo Estate lot 11), lot 25 (Wanneroo Estate lot 12), lot 4 (Wanneroo Estate lot 13) lots 34 and 35 (Wanneroo Estate lot 14), lots 20 and 22, 28, 29 (Location 1034) and lot 2 (Location 3211), all owned by the MRPA; part of Locations 9809 and 2734, part of Perthshire Location 110, lot 36 (Wanneroo Estate lot 15), lots 1, 7, 8 (Wanneroo Estate lot 16), lot 26 (Wanneroo Estate lot 12), Locations 2701 and 2595, lots 31 and 40 (Location 6078), part of Location 3211, lots 23, 24, 25 (Location 1034), privately owned freehold land; part of lease MT67, and vacant Crown land (**land surrounding Lake Joondalup**); and lots 6, 9 to 14, 23, 26, 29, 30, 37 to 40, 42 to 46, 48 to 56, 58 to 62, 64, 65, 69, 70, 72, 73, 74, 76, 80 to 82 (Perthshire Location 103), lot 15 (Perthshire Location 114) and part of Perthshire Location 114, lots 1, 2, 18 to 20 (Location 587), lots 9, 10, 25, 50 and part of lots 5 to 8 and 24 (Location 709), lots 16, 17, 21, 22 and part of lot 100 (Location E1), freehold land mainly owned by the MRPA (**Lake Goollelal and surrounding land**) (Figure 79). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is included in the MRPA's North-West Corridor Planning Structure. The Town Planning Department has prepared a design concept for the area, which has been approved in principle by the MRPA and provides for the recreational use of Lake Goollelal and the management of the swamps and Lake Joondalup for conservation.

Water levels and vegetation in the area of Lakes Joondalup and Goollelal are likely to be affected by storm water drainage inflow and private groundwater extraction. The area will be affected by existing MWA works and possibly in the future by further works. There are also SEC lines in the area.

Lake Joondalup is a large freshwater lake. Beds of sedge occur in the lake and near its edge. The water is densely populated with benthic stoneworts. Woodland of paperbark borders fringing sedge communities and flooded gum is common in places. The wetland vegetation is surrounded by open-forest and woodland of tuart, marri, jarrah and banksia, although much of this has been cleared.

The lake is outstanding for the number and variety of water-birds it supports, including some species which are rare elsewhere in the Metropolitan Region such as the straw-necked ibis, white ibis and blue-winged shoveller. Many hundreds of birds of different species use the lake as a summer drought refuge.

Beenyup and Wallubuenup Swamps and Lake Goollelal lie to the south of Lake Joondalup and drain into it.

The area's importance for recreation is likely to increase as urban growth in the North-West Corridor continues, with available recreational activities including picnicking, walking, nature study and possibly aquatic pursuits.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values and because it is a large open space resource within a rapidly growing urban corridor.

The Lake Joondalup Region Open Space Joint Management Committee is responsible for the management of the whole area. However, it is considered that both technical and financial assistance could enhance its management.

Important management considerations include: protecting wetlands and other areas of high conservation value; making recreation a priority use for Lake Goollelal; making conservation of flora and fauna a priority use for Lake Joondalup and other wetlands; and allowing only those recreational activities which are compatible with the conservation of flora and fauna.



Recommendations:

- M7.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M7.2 That the Lake Joondalup Region Open Space Joint Management Committee's Land Use Plan for the area is endorsed.

M8 WANNEROO WETLANDS — EASTERN CHAIN

The recommended area is made up of a chain of wetlands about 24km long passing a few kilometres east of Wanneroo and comprises Reserve CII598, for Recreation, vested in the Shire of Wanneroo; Locations 1640, 1653, 1747, 1804, 1896, 1897, 1963 to 1981, 2493, 2494, 2694, 2696 to 2698, 2702, 2703, 2923, 4135, 5454, 5455, part of Locations 2692 and 2928, lots 1, 3 to 7 of Location 1678, lots 1 and 3 of Location 1852, lots 2, 50 and 51 of Location 4134 (**Lake Pinjar**); part of Reserve C36496, for Public Recreation, not vested; lots 48 and 49 of Location 1540 (**Lake Adams**); part of Locations 1481, 1581, 1582, 1673, 1734, 2316, 3144, 3191 and 5373 (**swamps south and east of Lake Adams**); part of lots 1 to 7, 38 and 39 (Location 1816), part of lots 1 and 2 (Location 8), part of lots 9 to 11 (Location 2081), part of Locations 1133, 1395, 1646, 1658, 1818, privately owned freehold land; and a foreshore reserve which is Crown land (**Mariginiup Lake and Little Mariginiup Lake**); part of Locations 1734, 1787 and 1856 (**wetlands north of Jandabup Lake**); Reserves C7349, for Conservation of Fauna, vested in the Minister for Fisheries and Wildlife; C33193, for Public Recreation, vested in the Shire of Wanneroo; part of Reserve C15054, for Public Utility, not vested; part of lots 1 to 10 (Location 1654), part of lots 11 to 14 (Location 1686), part of lot 30 (Location 1635), part of lot 17 (Location 1935), part of Locations 1383, 1504, 1655, 1713, 1787, 3310 and 5305, privately owned freehold land (**Jandabup Lake**); part of Locations 672, 740, 774, 934, 1811, 2383 to 2385, 2451, 2482 and 2829; and Reserve C8162, for Water, under the control of the Shire of Wanneroo (**Badgerup Lake and Little Badgerup Lake**); part of Reserve C27466, for Recreation, vested in the Shire of Wanneroo; part of lots 1 to 3 (Location 1526), part of lots 11 to 13 (Location 1511) part of lots 24 and 25 (Location 1794), part of lots 5 to 7 (Perthshire Location 104), part of Perthshire Location 104, and part of Location 1735 (**wetlands near Lenzo Road**); part of lots 2, 4 and 5 (Location 1224), part of lot 47 (Location 2470) and part of Location 1803 (**Snake Swamp**); Reserves C8399, C27278 and C27279, all for Recreation, vested in the Shire of Wanneroo; part of Perthshire Location 104, part of lot 5 (Location 2488), Location 883 and part of Locations 887, 970 and 1494, privately owned freehold land (Gnangara Lake); part of lots 1, 3, 4, 7 and 9 (Location 1237) (**wetland south-west of Gnangara Lake**) (Figures 80A to C).

With the exception of Lake Pinjar, Mariginiup Lake and part of Little Mariginiup Lake, the area is within the Underground Water Pollution Control Area. The lakes may be affected by organic pollution due to drainage from surrounding septic tanks. Lake levels may be affected by private and MWA groundwater extraction, by forestry activities and by future sewerage and drainage works. The area has potential for extraction of diatomaceous earth, peat, sand and limestone and various mineral claims affect the area. The Mines Department has approved mining in part of Lake Gnangara. The Midland Brick Company has plans to establish a brickworks on land to the north-west of Lake Gnangara. Extension of the Beechboro-Gosnells Freeway may affect some wetlands.

The locality is covered by the Wanneroo Shire's Circular Lakes Landscape Enhancement Area.

Lake Pinjar

The lake is almost entirely privately owned and major modifications have been made to the shoreline and littoral zone. Remnants of the original vegetation include jarrah, marri, pricklybark, banksia, sheoak, Christmas tree and blackboy on higher ground, and flooded gum and paperbark close to the water. Interesting sand formations known as lunettes occur in the area.

Lake Adams

The water level of the lake has fallen because of groundwater extraction and the pine plantation to the north, and the original extent of the lake is now marked by scattered remnants of the fringing flooded gums. The owners have undertaken a project to increase the lake's value as a landscape feature and a summer refuge for water-birds by deepening part of the lake and clearing some of the reed beds.

Swamps South and East of Lake Adams

These swamps are located in freehold land but no agricultural use is occurring; they are subject to seasonal inundation and may attract water-fowl; surrounding vegetation has been substantially cleared.

Mariginiup Lake and Little Mariginiup Lake

Mariginiup Lake is a semi-permanent freshwater lake. It is fringed with sedgelands of jointed twig rush, *Baumea juncea* and *Eleocharis sphacelata*, and the surrounding vegetation includes the shrub *Leptospermum ellipticum* and patches of flooded gum and swamp paperbark. It offers a summer refuge for water-birds.

Little Mariginiup Lake is a seasonal swamp with reed beds in the western half and market gardens to the east. It is surrounded by cleared land.

Wetlands north of Jandabup Lake

The wetlands contain open water with emergent reeds. The southern lake has a smaller reed zone. Most of the surrounding area has been cleared but the lakes provide nesting and feeding areas for birds at certain times of the year.

Jandabup Lake

The lake is the largest body of open fresh water in the Shire of Wanneroo and is an important habitat for water-birds, particularly as a summer drought refuge. The fringing vegetation includes extensive reed beds and sedgelands and remnant flooded gum and paperbark trees. Much of the fringing vegetation and all of the surrounding areas are in private land; parts close to the water support market gardens and on higher ground there are paddocks with some remnants of the original vegetation.

Badgerup Lake and Little Badgerup Lake

Both lakes contain extensive beds of bulrush, and two exotic water plants: water hyacinth and *Polygonum attenuatum*. The native sedge *Scirpus prolifer* is abundant in Badgerup Lake. Although trees have been almost entirely lost from the foreshores of Badgerup Lake, there is a good stand of paperbark at the southern end of Little Badgerup Lake. The lakes are semi-permanent and provide a summer refuge for water-birds.

Wetlands near Lenzo Road

These semi-permanent lakes and swamps have lost much of their surrounding natural vegetation and their importance now lies mainly in their value as water-bird refuges and their potential as parkland for recreation.

Snake Swamp

Snake Swamp comprises an area of several seasonal swamps and winter depressions. The surrounding woodland is very disturbed and the area's main value is for recreation, though it could possibly be enhanced by the creation of permanent water by pumping.

Gnangara Lake

It is a large permanent freshwater lake which has been considerably used for recreation and partly developed to cater for this. The fringes of the lake contain sedgelands; open-forest of flooded gum and paperbark occupies the shoreline. Reserve C8399 to the east of the lake contains mostly remnants of woodland of marri, pricklybark, banksia, sheoak and Christmas tree.

Wetland south-west of Gnangara Lake

The wetland is a small area of open water, partly bounded by sedges. The water is sufficiently deep to support dabbling water-birds, including black duck.

The historical decline in numbers of wetlands on the Swan Coastal Plain adds to the importance of this area as a habitat for water-birds and as an example of wetland environments. The area's importance for recreation in the future is also likely to increase as the metropolitan area grows.

The recommended areas contribute to open space of regional significance because of their high conservation and recreation values and their close proximity to the Perth metropolitan area (see Figure 1, Chapter 4).

The management of the area should be in accordance with the Wanneroo Shire Council's Circular Lakes Landscape Enhancement Area Plan and important considerations include:

- (a) conservation of flora and fauna being the priority use for Lakes Jandabup, Mariginiup and Little Mariginiup;
- (b) recreation being a priority use for Lake Gnangara;

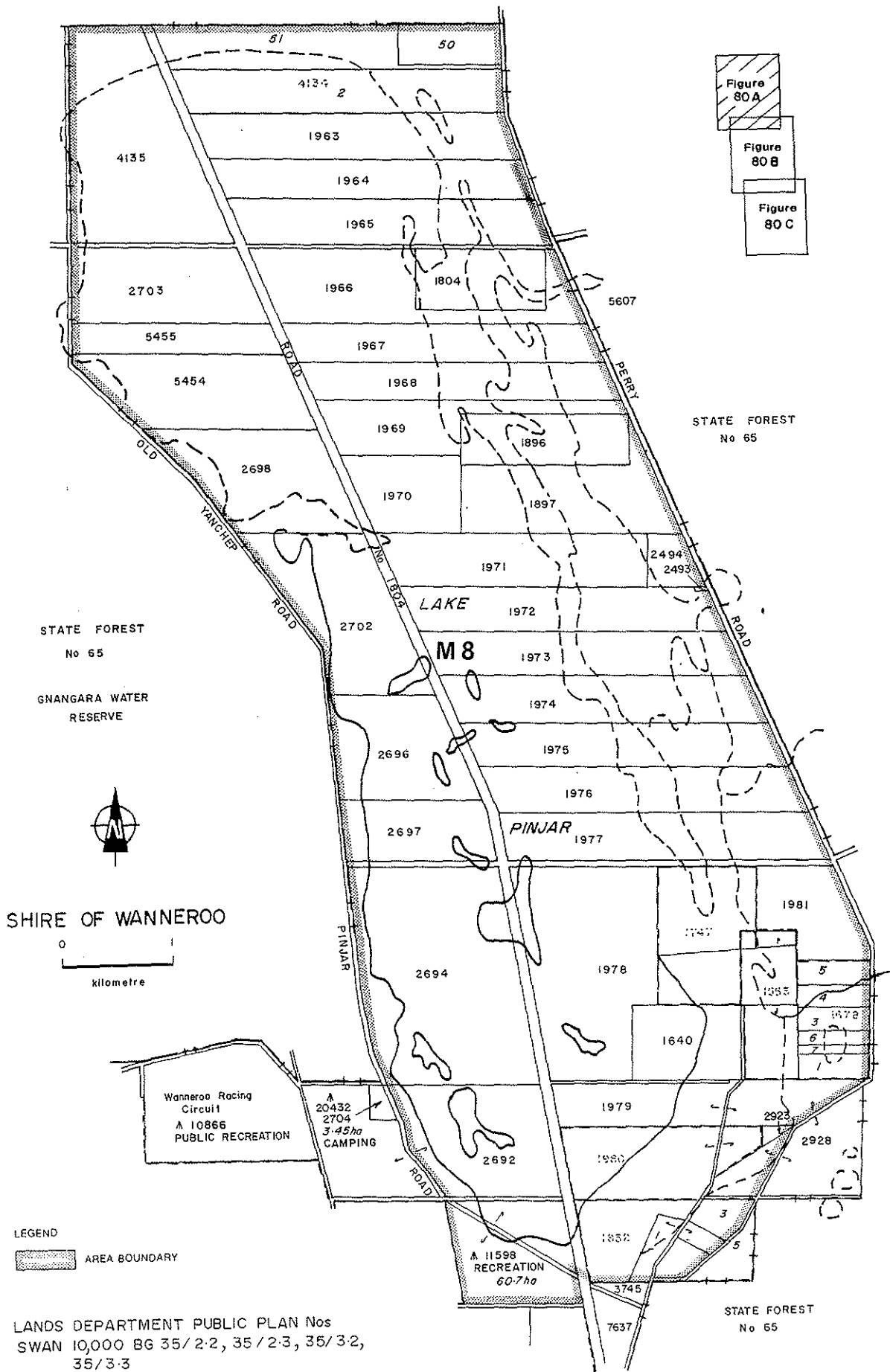


Figure 80A
 Figure 80B
 Figure 80C

Figure 80A

LANDS DEPARTMENT PUBLIC PLAN Nos
 SWAN 10,000 BG 35/2.2, 35/2.3, 35/3.2,
 35/3.3
 DCE Ref No F5

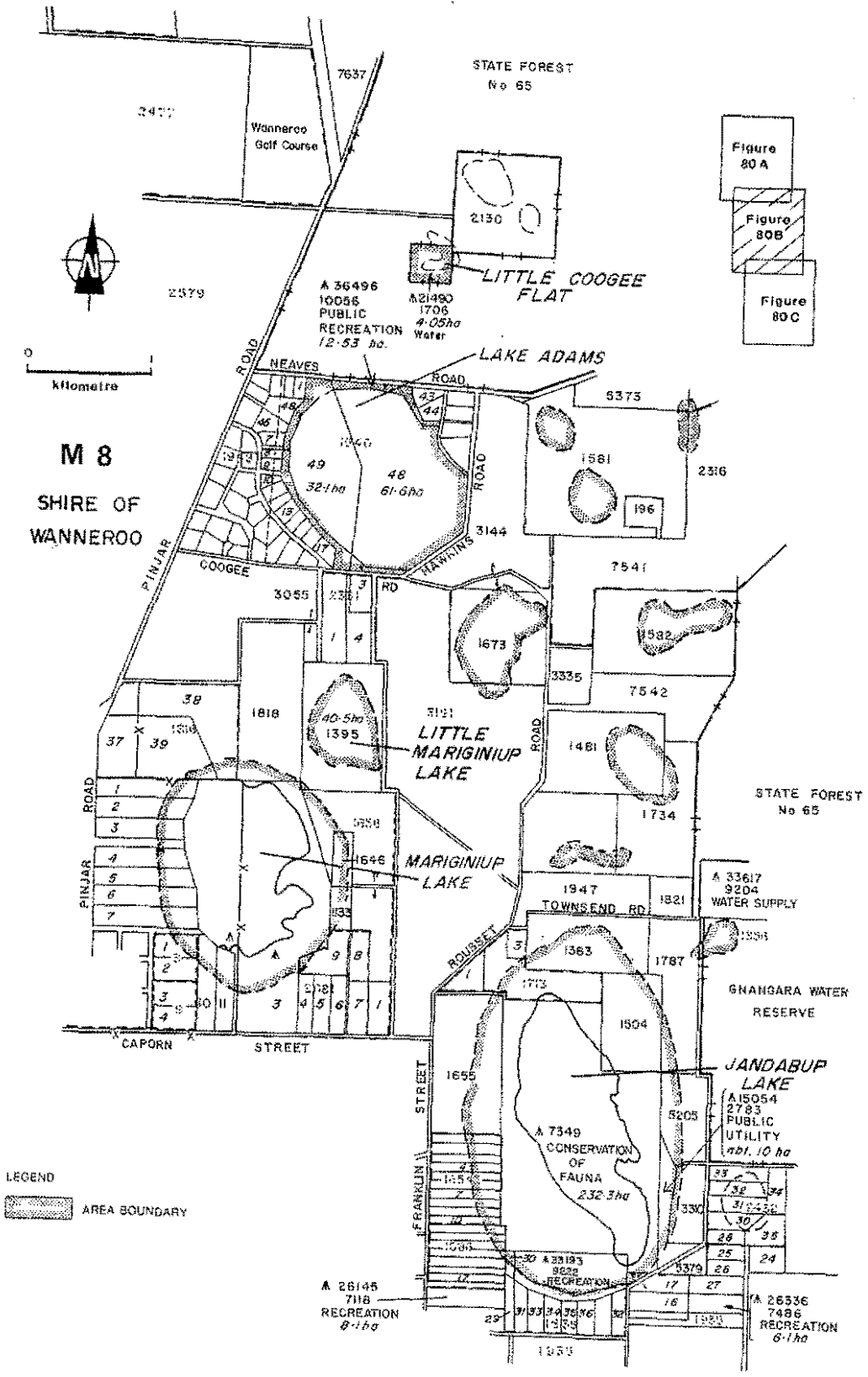


Figure 80 A
 Figure 80 B
 Figure 80 C

1980 LANDS DEPARTMENT ROAD GUIDE—MAP 20 REF. 23.16
 LANDS DEPARTMENT PUBLIC PLAN No
 SWAN 10 000 BG 35/2-2, 35/2-3,
 35/3-3, 35/3-2
 D.C.E. Ref. No F5, F 6

Figure 80B

Recommendations:

- M8.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M8.2 That the Metropolitan Region Planning Authority consider "reserving" those portions of the area not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme according to the following order of priorities: Jandabup Lake, wetlands north of Jandabup Lake, Mariginiup Lake, Little Mariginiup Lake, Gngangara Lake, wetlands south-west of Gngangara Lake, Badgerup Lake and Little Badgerup Lake, wetlands near Lenzo Road, Snake Swamp, Lake Adams, swamps south of Lake Adams and Lake Pinjar.
- M8.3 That the Wanneroo Shire Council's Circular Lakes Landscape Enhancement Area Plan for the area is endorsed.

M9 MELALEUCA MANAGEMENT PRIORITY AREA

The recommended area is situated about 40km north of Perth and most of it comprises State Forest, being Melaleuca Management Priority Area. The management priority designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. The recommended area also includes Location 1497, privately owned freehold land (Figure 81).

The area is subject to a number of pressures, namely:

- i) Recreation pressure is currently low but is likely to increase as population expands in the northern suburbs.
- ii) The MPA is within the Gngangara Water Reserve, and the Underground Water Pollution Control and Public Water Supply Areas; the eastern section is within the Ellen Brook catchment. MWA Catchment Zone regulations may affect access in the future.
- iii) The MPA is adjacent to MWA wells and groundwater levels may be affected.
- iv) A gas pipeline reserve is located within the MPA and the future North West Shelf pipeline may follow soon; also a high pressure gas pipeline along Neaves Road is planned.
- v) The area has potential for silica and peat and is covered by some mineral clams.
- vi) There is an SEC line through the area.

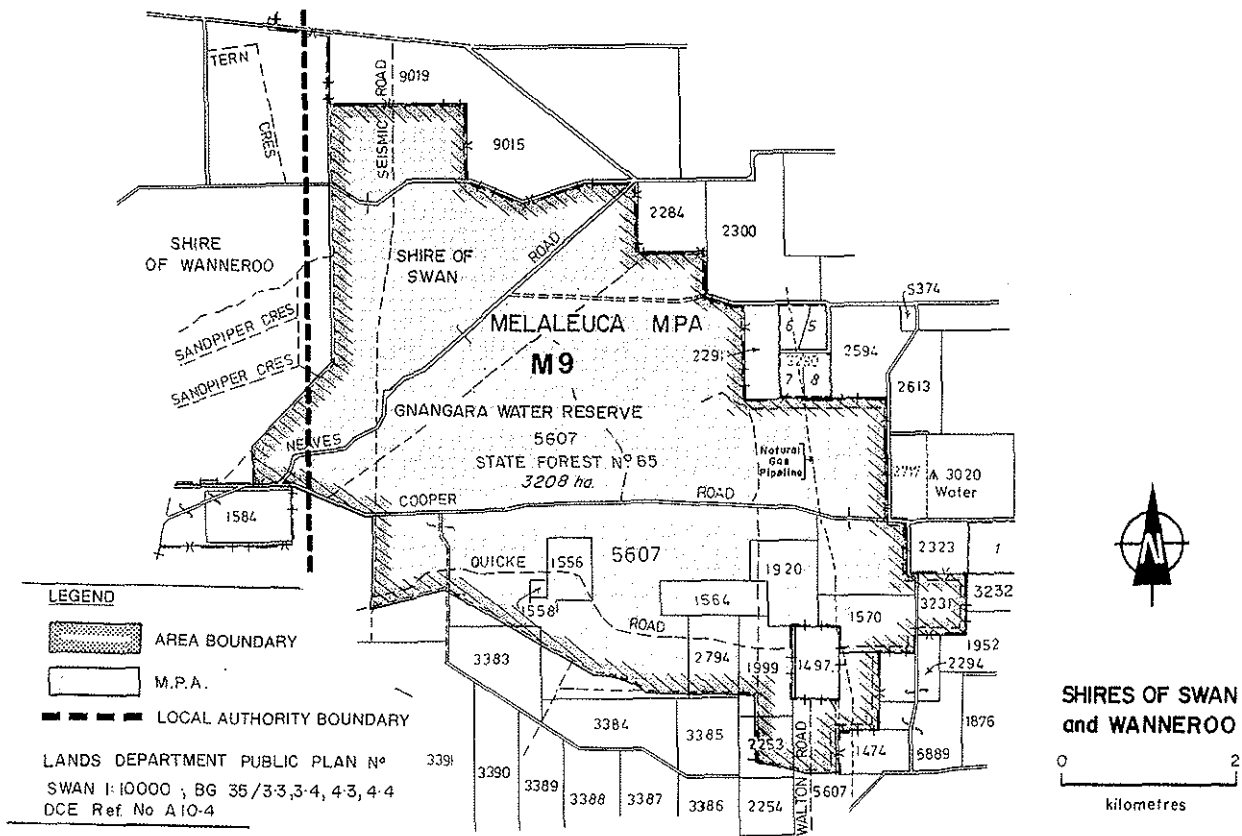


Figure 81

Melaleuca MPA contains the most important example remaining in State Forest of the coastal vegetation type characteristic of the Bassendean Dune System. The dunes are covered by low woodland or low open-forest of banksia, while the swamps are dominated by paperbark and white myrtle.

Melaleuca MPA is also important because it contains a wide variety of fauna including numerous bird species and the swamp skink lizard which is rare elsewhere on the Swan Coastal Plain.

Important management considerations for the area include: only allowing recreation activities which are compatible with the conservation of flora and fauna — and then only in proximity of Neaves Road, which should remain the sole means of vehicular access; and confining mining of peat to plantation areas.

Recommendations:

- M9.1 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Melaleuca MPA.
- M9.2 That the Forests Department prepare its management plan in consultation with the Metropolitan Water Authority and the local land owner.

M10 OFFSHORE REEFS — OCEAN REEF TO TRIGG

The recommended area is centred on Whitfords, about 22km north-west of Perth. Its coastal boundary is at the high water mark and it includes an offshore reef which protects a series of smaller reefs (Figure 82).

The area is affected by an MWA sewage outfall and a boat ramp at Whitfords. There is some commercial fishing of these waters for abalone, fish and crayfish.

The reefs are biologically rich and are unsurpassed locally as an underwater spectacle. Because the reefs have been heavily exploited, and as the area has education value, it is considered essential that they be reserved and protected to conserve the marine communities, including a rare species of cowrie shell which is much sought by collectors.

The area has high recreational value because the sheltered water provides safe boating, diving, swimming and fishing conditions.

Many submissions were received by the EPA on this locality and expressed the high recreational value of the area as well as the need for management to set aside areas of high educational and conservation value.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation, education and recreation values. Any management plan for the area should have these values as primary management objectives.

Recommendations:

- M10.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendation 15, Chapter 5).
- M10.2 That a study of the area be commissioned by the Environmental Protection Authority with the aim of establishing a Marine Reserve to be managed for the purposes of scientific research, education, conservation and recreation.
- M10.3 That, subject to the implementation of M10.2, a management plan be prepared for the Reserve.

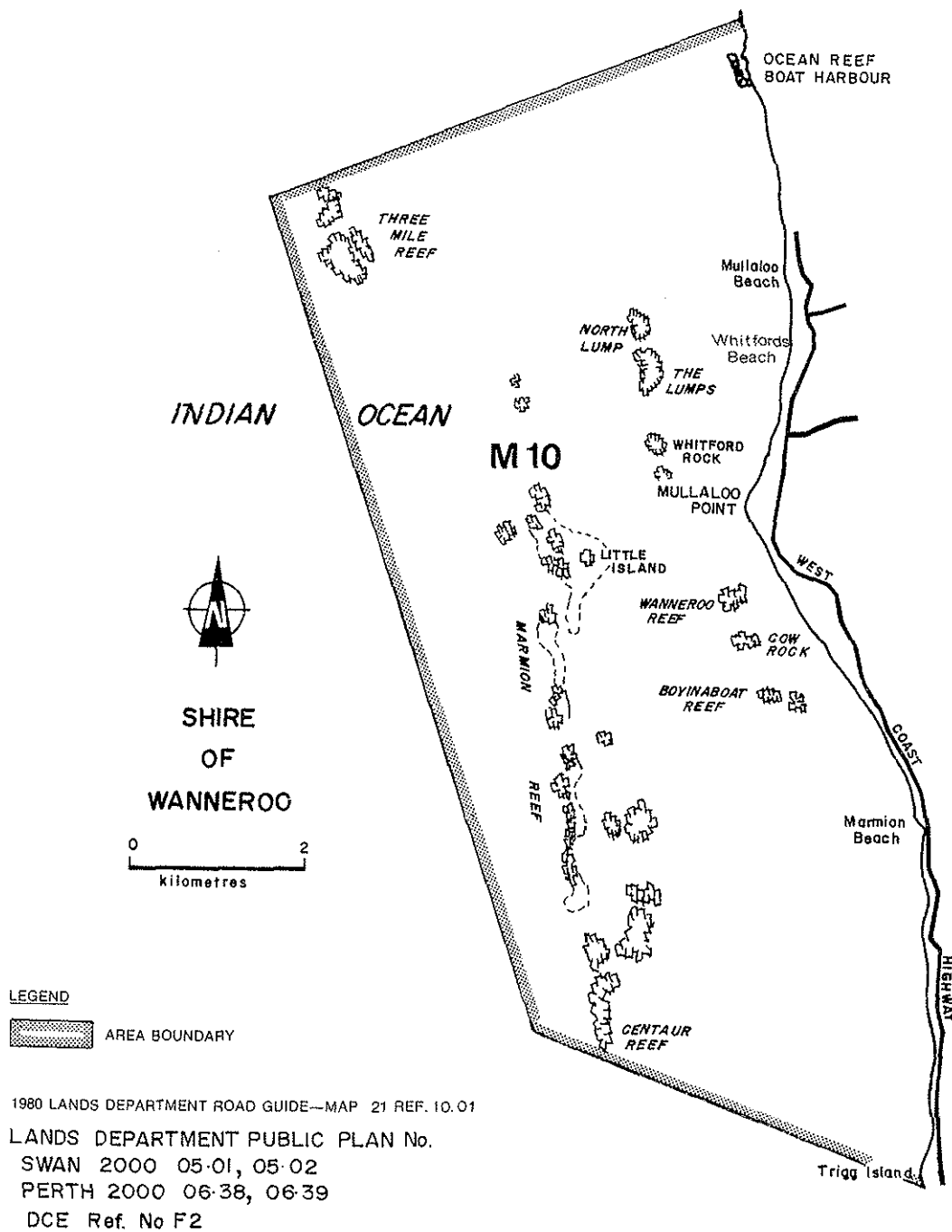


Figure 82

M11 WARWICK WOODLAND

The recommended area is situated west of Wanneroo Road and south of Warwick Road, and comprises lot 1 and part of lot 145 (Location 1315), freehold land owned by the MRPA (Figure 83). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme and is intended to be developed for active recreation.

Private groundwater extraction may affect water levels, and the area may be affected by proposed sewerage works. The Dampier to Perth natural gas pipeline will pass through the area.

The area's vegetation consists of woodland of jarrah with a few marri and an understorey of banksia. The understorey is diverse, some of the common species being blackboy, telegraph sedge, bacon and eggs, yellow pea and blueboy. There is evidence that the whole area was burn-

ed five or six years ago. Frequent fires would eliminate some species and encourage weeds: protection of bushland areas from fire and other disturbances is therefore necessary.

Recommendation:

M11.1 That the Metropolitan Region Planning Authority ensure that any management plan for the area encourages the growth of indigenous flora.

M12 RESERVE A20091, MARANGAROO

The recommended area is situated east of Wanneroo Road and north of Warwick Road in the suburb of Marangaroo and comprises Reserve A20091, for Parklands and Recreation, not vested (Figure 83).

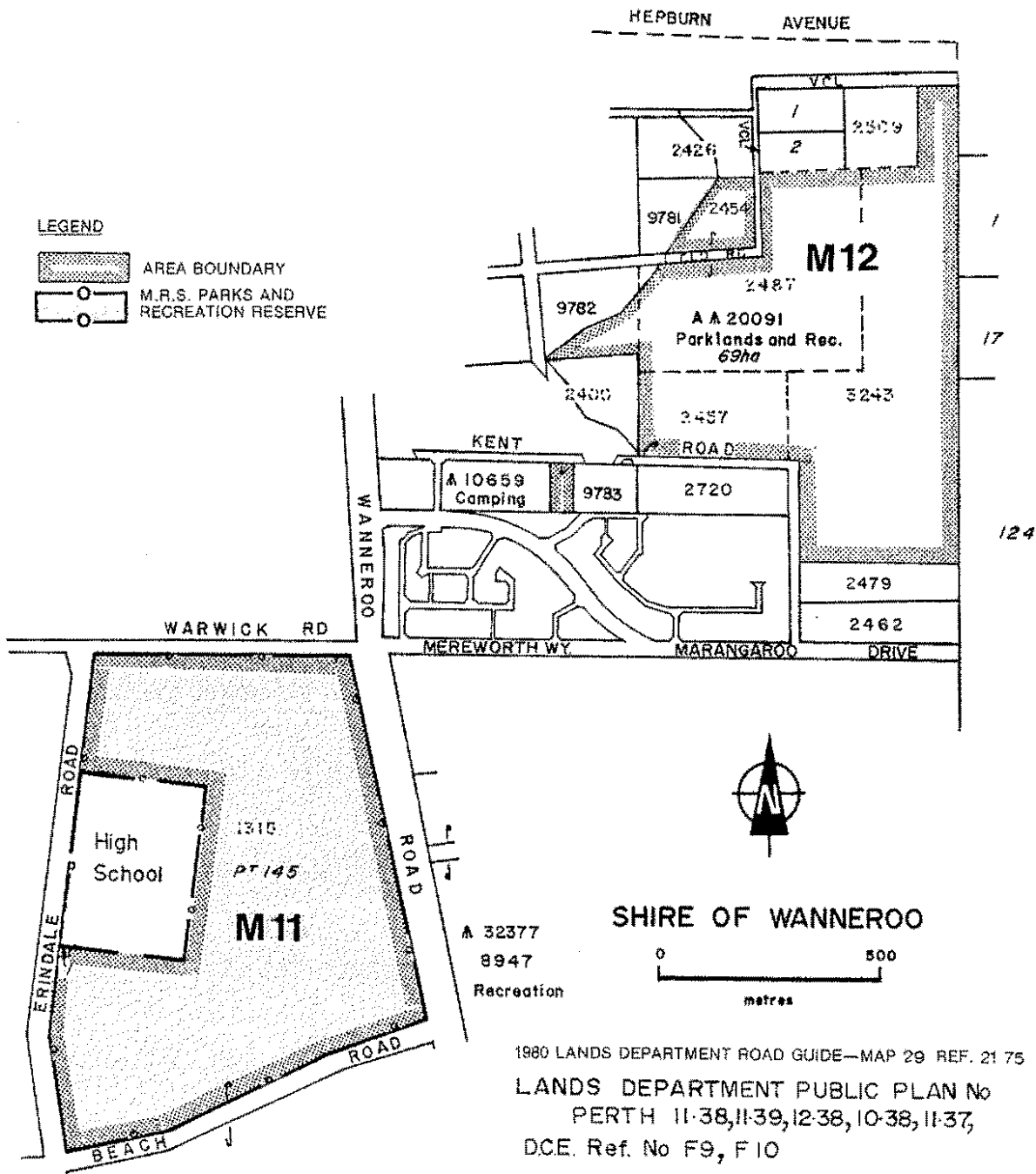


Figure 83

The whole Reserve has been burned in recent years, and has been affected by timber cutting and rubbish dumping, the latter particularly in the east where car bodies line tracks into the area. MWA and private groundwater extraction will affect water levels and the area may be affected by future MWA sewerage works. The Wanneroo Shire Council is currently preparing a management plan for the area.

The area's soil is mostly yellow sand, supporting open-woodland of jarrah with an understorey of banksia and the occasional sheoak. Common species in the ground storey include blackboy, blueboy, bristly cottonheads, bacon and eggs and Star of Bethlehem. In the extreme west portion of the Reserve is higher ground of yellowish-brown sand, vegetated with woodland and open-woodland of tuart with less banksia and more sheoak. The understorey here is noticeably different from that in the remainder of the Reserve.

The Reserve has retained a good diversity of plant species and there appears to be little invasion of weeds.

Recommendation:

M12.1 That the purpose of Reserve A20091 be amended to Parkland and that the Reserve be vested in the Shire of Wanneroo.

M13 WHITEMAN PARK (MUSSEL POOL)

The recommended area is situated around the upper section of Bennett Brook, about 6km north of Bassendean, and comprises part of lot 5 (Location 2515 and E1), lot 4 (Locations 2515, 2516, and E1), part of Location 2516 and E1, lots 254 to 257, 298 to 304 (Location 1315), lots 127, 128, 258 to 262, 263, 295 to 297 and 314 to 317 (Locations 1315 and G), 264, 265, 293, 294 (Location 1315), lots 130, 266, 267, 289 to 292 (Locations 1315 and H), lots 268 to 275, 282-288, 139, 140 and part of lots 329 and 330 (Location H), lots 590, 603, 604 and 617 (Location I), freehold land owned by the MRPA; and lot 54 (Location G) and part of lot 331 (Location I), privately owned freehold land (Figure 84). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme, and the area is included in the MRPA's Improvement Plan No.8.

The recommended area, together with adjoining land to the east, is being studied by the MRPA and a long-term management plan is being developed. The southern portion of the area around Mussel Pool has been developed as a picnic site, and the MRPA is continuing to develop and manage the area to cater for the recreational needs of people from a large area.

The area is partly within the Mirrabooka Public Water Supply and Underground Water Pollution Control Areas and partly within a proposed extension of these areas. MWA groundwater extraction from the Gngangara Mound will affect water levels. The area may be affected by proposed realignments of the Great Northern Highway and Lord Street. It is affected by existing roads.

The area has considerable conservation value as it contains a rich diversity of flora and fauna. Four basic vegetation formations occur in the area. There is an open-woodland of marri and jarrah with a second stratum of banksia and an understorey including blackboy, *Jacksonia floribunda*, *Hibbertia hypericoides* and purple flag. Vegetation in areas that are flooded seasonally is characterised by low woodland of paperbark with understorey species including *Leptospermum ellipticum*, *Astartea fascicularis* and an uncommon orchid, babe-in-the-cradle. In low-lying areas that are moist in winter a low heath vegetation occurs, consisting of a shrub layer often dominated by blackboys with a few emergent marri and jarrah trees. Horse Swamp and the creek containing Mussel Pool support a swamp vegetation which varies from low woodland of Moonah paperbark to low closed-forest of swamp paperbark and flooded gum, with an understorey comprising dense sedge and occasional shrubs.

Five native species of mammal have been recorded in the area including the extremely rare ashy-grey mouse; also seventy species of bird have been recorded, including the painted quail which is rare on the Coastal Plain, and twenty-five species of reptile including the most northerly occurrence of a sub-species of goanna. Also two species of native fish occur in the creek: the western pygmy perch and the nightfish.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its conservation value, its considerable recreation potential and its close proximity to the Perth urban area. The comparatively small portion of Whiteman Park around Mussel Pool is already a major visitor attraction from a wide area and the Park as a whole is expected to attract more visitors as the Perth urban area grows. Technical and financial assistance may enhance the management of the area.

Recommendations:

M13.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M13.2 That the Metropolitan Region Planning Authority's management plan for the area is endorsed.

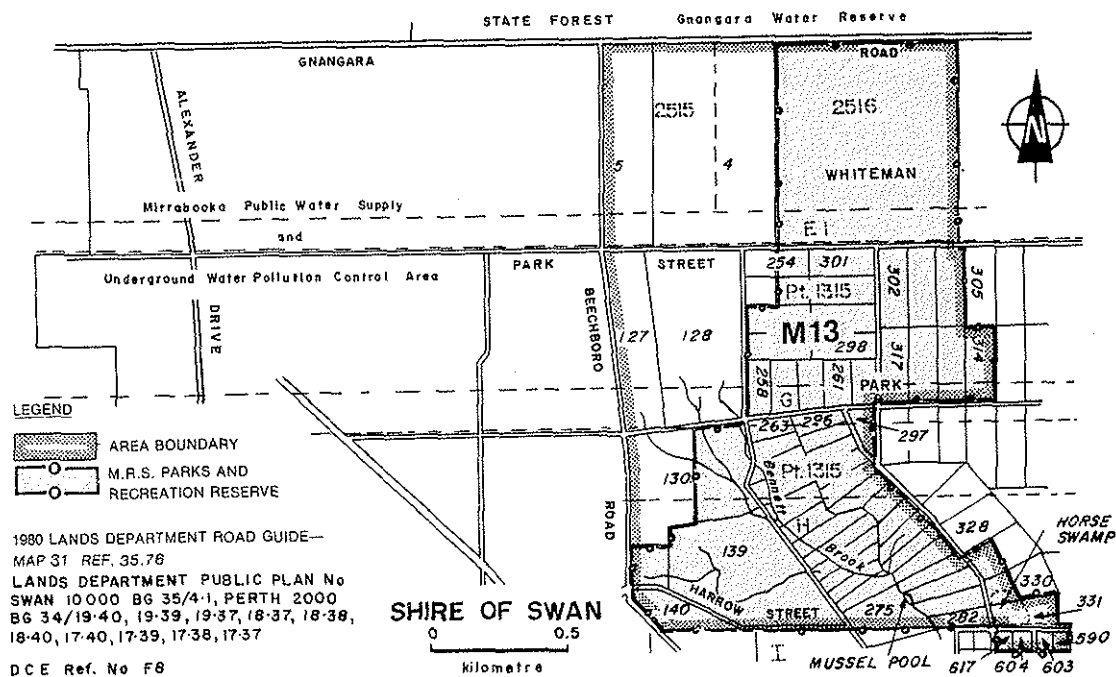


Figure 84

M14 RESERVE C1654, BULLSBROOK

The recommended area is situated to the east of the Great Northern Highway just north of Bullsbrook, and comprises Reserve C1654, for Travellers and Stock Purposes, not vested (Figure 85).

A refuse disposal site for Bullsbrook residents has been operating in the south-west of the Reserve and it has been proposed that a portion of the Reserve be excised for that purpose.

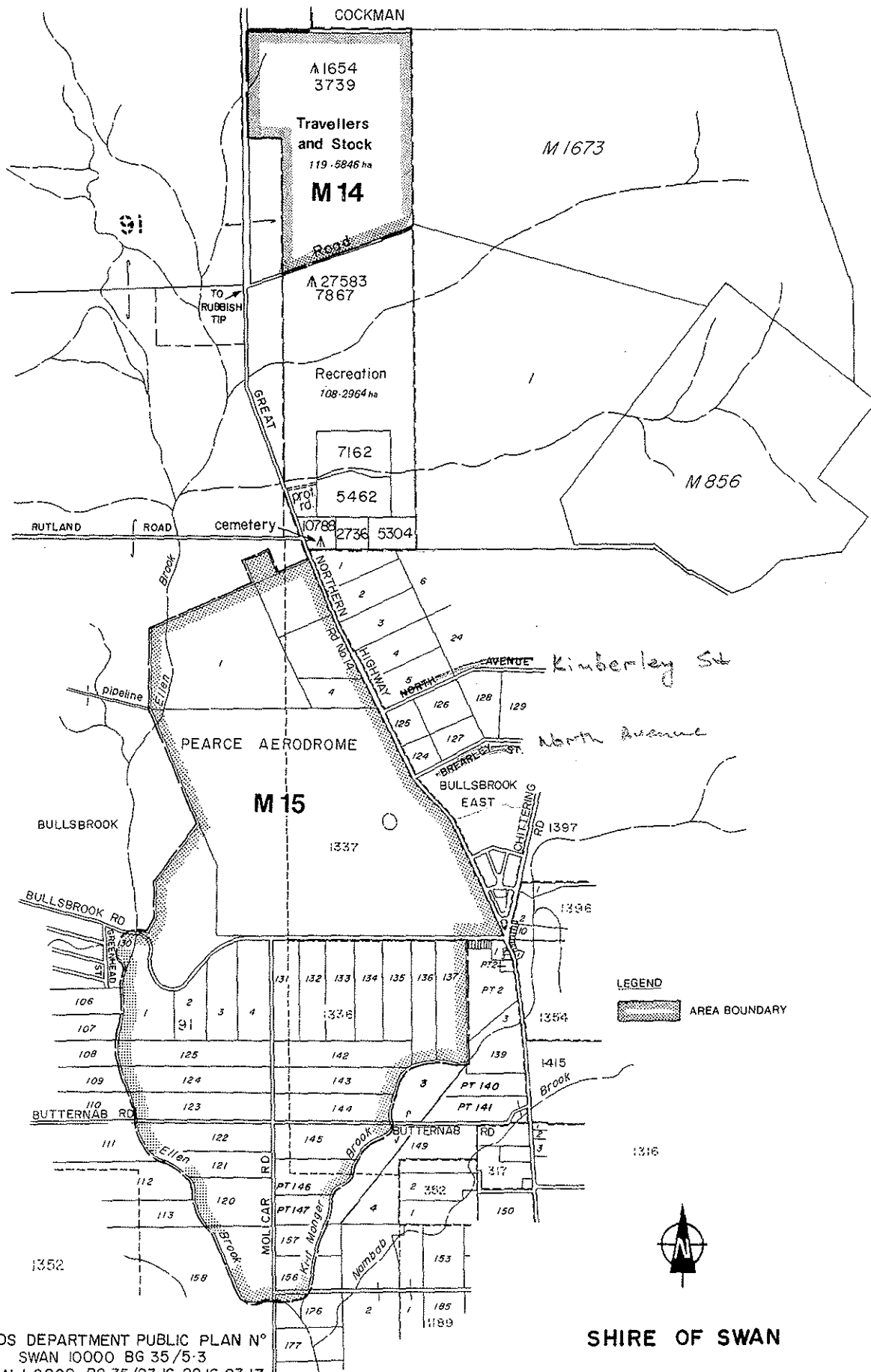
The Reserve is within the Ellen Brook Catchment, a potential source of water supply. It may be affected by a pipehead dam on Ellen Brook near its confluence with the Swan River. Public access would be restricted to some extent by Catchment Zone regulations. The Reserve may be affected by reconstruction of the Great Northern Highway. It has potential for heavy mineral beach sands and refractory minerals, and is affected by mineral claims.

The north-west corner contains a low swamp flat and some gentle sandy rises. The wettest part carries tall closed-heath of *Melaleuca viminea* with emergent swamp paperbarks. Some open, slightly saline areas carry tall and low heath of paperbark species with emergent swamp cypress. The shrub storey includes mountain kunzea and pepper-and-salt, herbs and sedges, with samphire in more saline areas. Woodland of Moonah paperbark and banksia occurs on sandy soils in the south of the Reserve. The swamp vegetation is unusual and no similar example is known in other conservation reserves. The broombush honeymyrtle, which occurs here, is unusual because it is widespread in the wheatbelt but rare on the Coastal Plain and not known from any other swamp habitat.

Recommendations:

M14.1 That the purpose of Reserve C1654 be amended to Conservation of Flora and Fauna, and that the Reserve be vested for a limited term of 10 years in the W.A. Wildlife Authority (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.

M14.2 That access to the Reserve for the purposes of exploration and evaluation of mineral potential be permitted where necessary under conditions specified in the vesting order which should be such as to protect the area's conservation value.



LANDS DEPARTMENT PUBLIC PLAN N°
 SWAN 10000 BG 35/5-3
 SWAN 1:2000 BG 35/23-16,22-16,23-17
 TOODYAY 40 SHEET 3
 DCE Ref. No A15, B15

Figure 85

M15 PEARCE AERODROME

The recommended area is situated at Bullsbrook and comprises parts of Locations 91, 1336 and 1337, owned by the Commonwealth of Australia (Figure 85).

The area is within the Ellen Brook Catchment. Future MWA groundwater extraction could affect water levels, and public access would be restricted by Catchment Zone regulations. There are SEC lines in the area. It may be affected by future realignment of the Great Northern Highway. There is a biological secondary sewage treatment plant at the RAAF Base and waste water discharge into Ellen Brook may affect the nearby area as well as the Twin Swamps and Ellen Brook Nature Reserves (see M17) further downstream. Effluent disposal is subject to licence under the Rights in Waterways Act Section 27A.

The area carries open-forest of marri, wandoo and jarrah, with woodland of wandoo, some flooded gum and swamp paperbark. In the southern and eastern sections there is a mixture of low open-forest of sheoak and open-woodland of marri, wandoo and jarrah, with a closed-scrub of paperbark. The western section includes a low open-forest of swamp sheoak and closed-scrub of paperbark, a vegetation complex which is poorly represented in existing or proposed conservation reserves.

Important management considerations for the area include retaining and encouraging the growth of the natural vegetation, and maintaining the water quality of Ellen Brook.

Recommendations:

M15.1 That the Commonwealth of Australia retain as much uncleared land as possible.

M15.2 That the Effluent Licensing Advisory Panel ensure that the effluent discharged from Pearce Aerodrome into Ellen Brook is such that it will not adversely affect the important aquatic-based environment of Reserve A27620 for the Preservation of Fauna — Short-Necked Tortoise (see M17).

M16 AVON VALLEY NATIONAL PARK

The recommended area is situated about 50km north-east of Perth and comprises Reserves A30191, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; A30192, for National Park, vested in the National Parks Authority; A30193, for Timber, vested in the Conservator of Forests; C7429 to C7435 inclusive and C7438, for Trigonometric Site, all not vested; Avon Location 28217 and lot M1392, vacant Crown land; and Avon Locations 150, 579, 580, 929 and 28315 and lots M1451 and M1517 (Avon Location 1352), all privately owned freehold land (Figure 86).

The area is within the Red Swamp Brook and Brockman River Catchments, both potential sources of water supply. Storage dams may be built on both waterways near their confluences with the Avon River. Public access would be controlled to some extent by Catchment Zone regulations. The area may be affected by MRD gravel extraction requirements. It is covered in part by the Alcoa Mining Lease and a lease held by Mitchell Plateau Bauxite Co. (MPBC) (formerly the Pacminex Agreement Area). MPBC considers Avon Location 28217, the western portion of lot M1451, and lot M1392 to have bauxite potential but has no immediate plans for mining.

The area consists of an undulating plateau which is about 200m above the river level, and a river valley sloping steeply from the plateau. The vegetation consists primarily of open-forest of jarrah and marri on the uplands and open-woodland of wandoo in the valleys and on the slopes. Flooded gum occurs along the river banks. The occurrence of wandoo in the major valleys is significant since this is normally restricted to the low rainfall areas in the east and north of the Darling Range. Another significant feature of the area is the great diversity and quality of relatively undisturbed flora in the Avon Valley: in many other major river valleys in System 6, the plant communities have been destroyed by agriculture or flooding.

Reserve A30193 contains the fringed lily, *Thysanotus anceps*, a rare species known only from a few localities in the Darling Range north of Perth. Reserve A30191 contains populations of *Conostylis* and hybrid *Eucalyptus* spp. which are of substantial scientific interest.

The whole area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values and its proximity to the Perth urban area. As the Perth urban area grows, the recreation potential of the area is expected to increase substantially. Not all land under the various tenures within the area has conservation and recreation as primary management objectives. The privately owned land increases the difficulties of management, including fire protection and controls, and also restricts public access to the National Park. To enhance the conservation and recreation values of the area the management structure requires co-ordination and important management considerations include the limiting of vehicular access, and increasing fire protection and control.

Recommendations:

- M16.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M16.2 That the vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna, vested for a limited term of 10 years in the W.A. Wildlife Authority (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.
- M16.3 That access to the new Reserve (recommended in M16.2) for the purposes of exploration and evaluation of mineral potential be permitted where necessary under conditions specified in the vesting order, which should be such as to protect the area's conservation value.
- M16.4 That Reserve A30193 be cancelled and its area added to Reserve A30192.

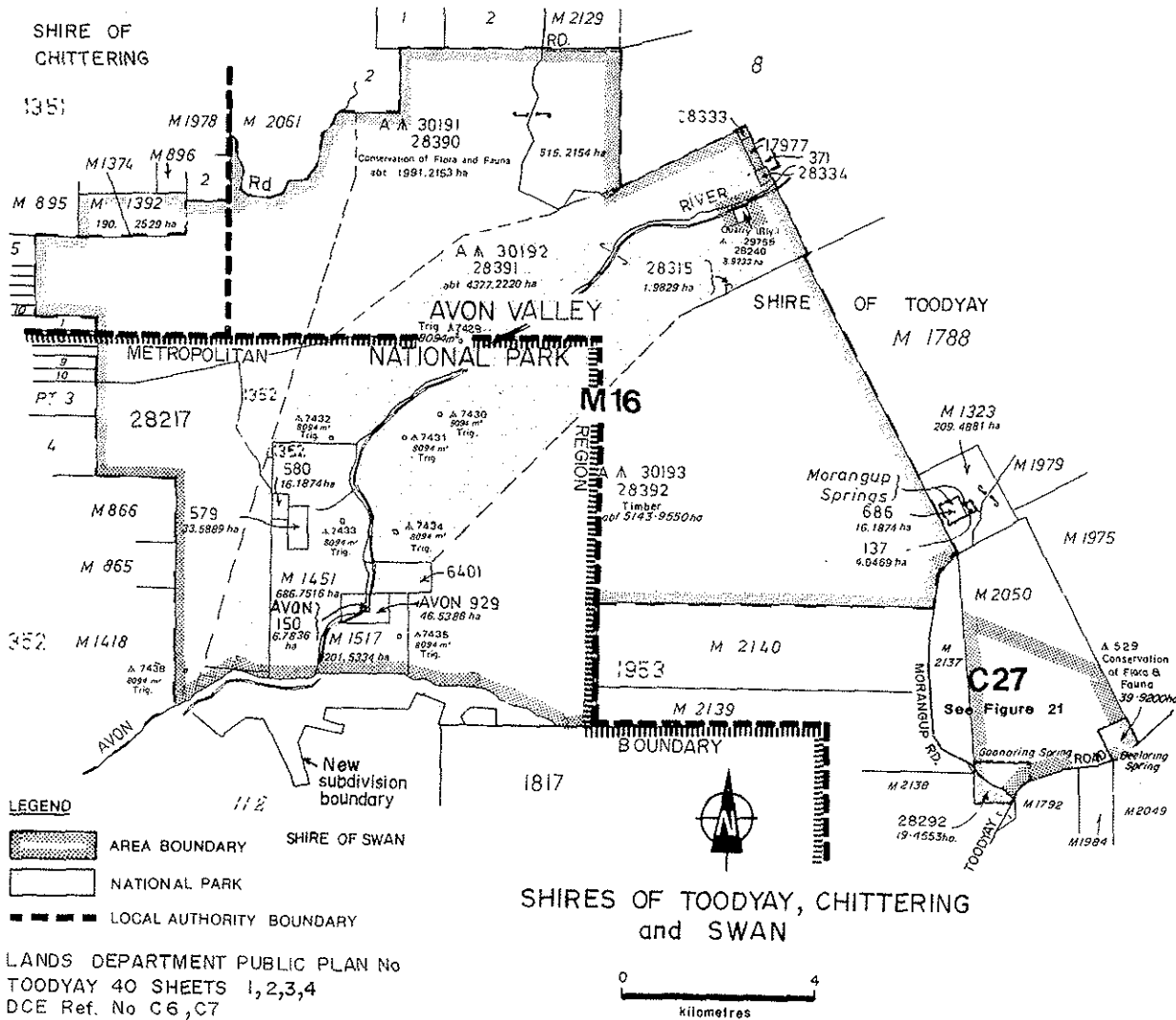


Figure 86

M17 ELLEN BROOK AND TWIN SWAMPS WILDLIFE SANCTUARIES, UPPER SWAN

The recommended areas are situated about 4km and 7km north of Upper Swan and comprise Reserves A27620 and A27621, for the Preservation of Fauna (short-necked tortoise, *Pseudemys umbrina*), both vested in the W.A. Wildlife Authority (Figure 87).

The Reserves are within the Ellen Brook Catchment, a potential source of water supply. Public access could be restricted to some extent by Catchment Zone regulations. The area adjacent to Reserve A27620 contains a major clay deposit. Clay extraction, in combination with ground-water extraction, natural rainfall variations and changes in land use on adjoining land, may lower water levels in the swamps and thus adversely affect the breeding habitat of the tortoises.

The Reserves, apart from their value in protecting the short-necked tortoise, have high conservation value since they are particularly high in aquatic plants and contain a number of rare plants and a variety of invertebrates and fish.

Reserve A27620 (Ellen Brook Wildlife Sanctuary) has clay soil, with numerous depressions which fill with water during winter and spring. These depressions carry shrubland of robin redbreast bush, sedges and aquatic species including *Chara australis* and *Hydrocotyle lemnoides*. The higher ground between the depressions carries shrubs including *Acacia saligna*, swishbush and stinkwood, annuals such as *Drosera gigantea* and *Neurachne alopecuroides*, and at least fourteen species of orchid. The land to the north has been cleared and carries mostly exotic plants, but these are yielding to native species.

Reserve A27621 (Twin Swamps Wildlife Sanctuary) contains low stable sandhills with swamps in the eastern and southern section. The north-western section is uniformly low-lying. The swamps are dominated by species of melaleuca, and also contain aquatic species including *Triglochin acuta* and *Ruppia maritima*. The sandhills are covered with low woodland of banksia species, with some marri, pricklybark, Christmas tree and sheoak; also there is an understorey comprising *Jacksonia furcellata*, swamp tea tree and zamia, and a ground cover of spreading plants such as *Phlebocarya ciliata*, *Dasypogon bromeliaefolius* and cottonheads. The low-lying section is covered by shrubland of *Regelia ciliata*, associated species including banksia, blueboy and green kangaroo paw.

The western swamp (short-necked) tortoise occurs only within System 6. It has no close relatives amongst other Australian tortoises and is adapted to a specialised habitat, living in the swamps during winter and spring and sleeping during summer and autumn in naturally occurring tunnels in the clay (in A27620) or under deep leaf litter or fallen branches (in A27621). Since 1963 the tortoise population of Reserve A27621 has fallen from about 150 to fewer than twenty-five, probably because of below-average rainfall over a series of winters and possibly also because of predation by dogs and foxes. The population of the other Reserve has remained stable at between ten and twenty-five animals. This present low number of tortoises is cause for concern about the future of the species.

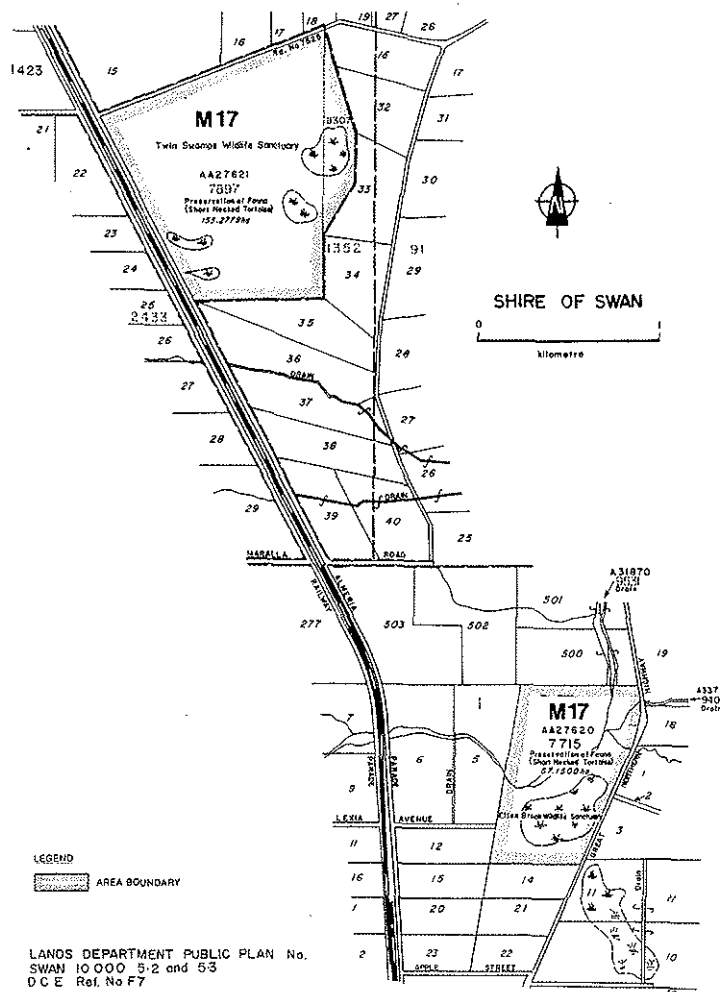


Figure 87

Other notable features of conservation significance are some five rare plants, among them the aquatic plant *Hydrocotyle lemnoides* which is not known to occur elsewhere. Also there are many species of orchid, lily and trigger plant. The swamps contain a wide variety of invertebrates, including the shield shrimp which is found nowhere else near Perth; and Ellen Brook contains a good variety of native fishes including big-mouthed goby, Swan River goby, western minnow and Westralian pygmy perch.

Recommendation:

M17.1 That ways and means of providing protective buffer areas around Reserves A27620 and A27621 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

M18 WALYUNGA NATIONAL PARK

The recommended area is situated about 40km north-east of Perth and comprises Reserve A2065, for National Park, vested in the National Parks Authority; part of Swan Locations 2 and 1316, controlled and managed as National Park; Reserves C26864 and C26865, for Recreation, vested in the Shire of Swan; Reserve C36879, for Public Recreation, not vested; lot II (Location 10113), freehold land held in the name of the Crown; and lots 1, 119 to 123 (Location 1316), privately owned freehold land (Figure 88). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is partly within the Ellen Brook and Woorlooo Brook Catchments, both potential sources of water supply. Public access would be restricted to some extent by Catchment Zone regulations. The Main Roads Department states that it may require some road building materials from the area. The area is partly within both the Alcoa Mining Lease and the Pacminex Agreement Area; however the potential for bauxite is low and Pacminex have no plans for mining the area.

Walyunga National Park contains some highly picturesque landforms. It lies along the Darling Scarp and is deeply dissected by the Swan River. At its highest point it is 250m above sea level, dropping very steeply to 30m at the river. Woorlooo Brook, in a deep valley, joins the Swan River within the Park.

The Park is covered with woodland and open-forest and also contains granite outcrops. Jarrah is most common on the lateritic uplands, associated with marri on deeper soils. The understorey is characterised by Wilson's grevillea and hairy jugflower. Wandoo replaces marri and jarrah on the valley slopes, while flooded gum occurs along the river banks. Surprisingly, there are also pockets of flooded gum, presumably sustained by seepage, on some slopes high above the valley floor. Shallow soils in the Park, especially around the granite outcrops, support examples of the rich Darling Scarp flora, with heath being common.

The Park is of considerable recreational value, its special attractions being the river, which contains several sets of rapids and is heavily used by canoeists in winter, and the picturesque steep-sided valley. Because the Park is coming under increasing visitor pressure and because it is made vulnerable to external influences by its small size, expansion of the Park is important. Also the park system as a whole could be improved by linking it with Avon Valley National Park.

Reserves 26864 and 26865 provide continuity with surrounding uncleared land and add to the conservation and recreation potential of the whole area.

Because of the high conservation and recreation values of Walyunga National Park and the indicated adjoining land, the area constitutes open space of regional significance (see Figure 1, Chapter 4). Management of the whole area will require coordination so that adjacent land uses do not adversely affect each other.

Recommendations:

M18.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M18.2 That the Shire of Swan be encouraged to prepare management plans for Reserves C26864 and C26865.

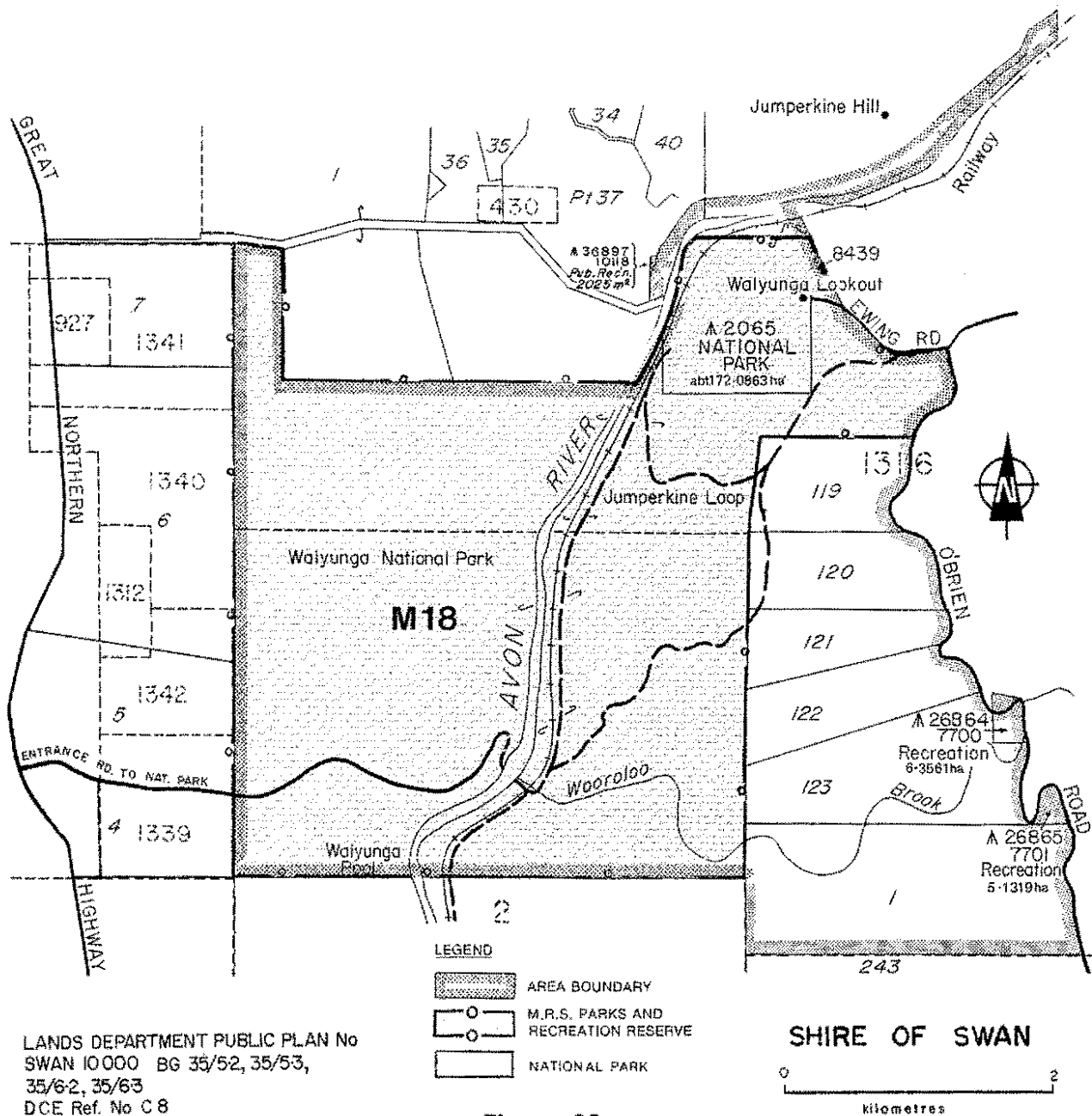


Figure 88

M19 SWAN RIVER — GUILDFORD TO WALYUNGA NATIONAL PARK

The recommended area extends along the Swan River from Guildford to Walyunga National Park. It comprises land along the Swan River where it passes through Locations 1, 2, 4, 5A, 6, 9-16, 94, B, E, EI, F, FI, G, GI, H, I, K, L, M, OI and P, mainly freehold land, and abuts the following Reserves: C34525, C34528 and C33618, all for Public Recreation, not vested; C26452, for Recreation, not vested; A28804, for Public Recreation, and C35864, for Drain, both vested in the Shire of Swan; C29493, for Historical Building (Woodbridge House), vested in the National Trust; C24092, for School Site, and C29845, for Prison Site, both not vested; C33481, for Community Welfare Purposes, not vested (Figure 89).

The MRPA has proposed that land adjacent to the river be "reserved" for Parks and Recreation under the Metropolitan Region Scheme, and be developed and managed as a linear park. The area comes within the scope of the Town Planning Department's "Swan Valley Project" which is examining means of providing open space for public use in the region.

There are sewerage and drainage works and SEC lines in the area. The area may be further affected by proposed sewerage and drainage works, and private groundwater extraction may affect vegetation. The Dampier to Perth natural gas pipeline will pass through the area. The MRD states that a bridge over the river will be required for the Northern Perimeter Highway at Middle Swan, and that a second bridge will be required if Morley Drive is extended to Morrison Road. The area has potential for clay, sand and loam, but there are no existing claims.

The natural vegetation along much of this length of river is reduced to scattered trees along the banks, though above the Swan's confluence with Ellen Brook, the banks are relatively well wooded. Flooded gum, swamp sheoak and paperbark occur throughout the reaches of Middle and Upper Swan; in some sections saplings and seedlings are present, but elsewhere animals have prevented regeneration. The land adjacent to the river is mainly used for stock, while vineyards occupy most of the remainder of the valley.

Regeneration of the vegetation fringing the river and development of the area as a riverine linear park for low impact recreation (e.g. walking, fishing) could be achieved by controlling stock access. The river links residential and rural areas to Walyunga National Park (M18), and is heavily used by canoeists in winter.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation potential. It also provides a link between other open space areas of regional significance, Walyunga National Park (see M18) and the Swan River further downstream.

Management of the area will require coordination and important management considerations include: the area's potential for clay, loam and sand; controlling stock and vehicle access; restricting recreation activities to those which are compatible with conservation of flora and fauna; providing pathways, launching facilities and parking space; removing fences; and encouraging the growth and regeneration of local indigenous flora.

Recommendation:

M19.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

KEY TO RESERVES

- ① A29493
8254
Historical Buildings
5377 m²
- ② A24092
Schoolsite
(12.6444 ha)
- ③ A33864
9875
Drain
7102 m²
- ④ A33481
9332
Community Welfare
4.7626 ha
- ⑤ A26452
Recreation
6.5913 ha
- ⑥ A33618
9357
Public Recreation
2791 m²
- ⑦ AA28804
8181
Public Recreation
3.0554 ha
- ⑧ A.29845
8345
Prison Site
19.9055 ha
- ⑨ A34528
9596
Public Recreation
2470 m²
- ⑩ A 9582
School
3.3336 ha

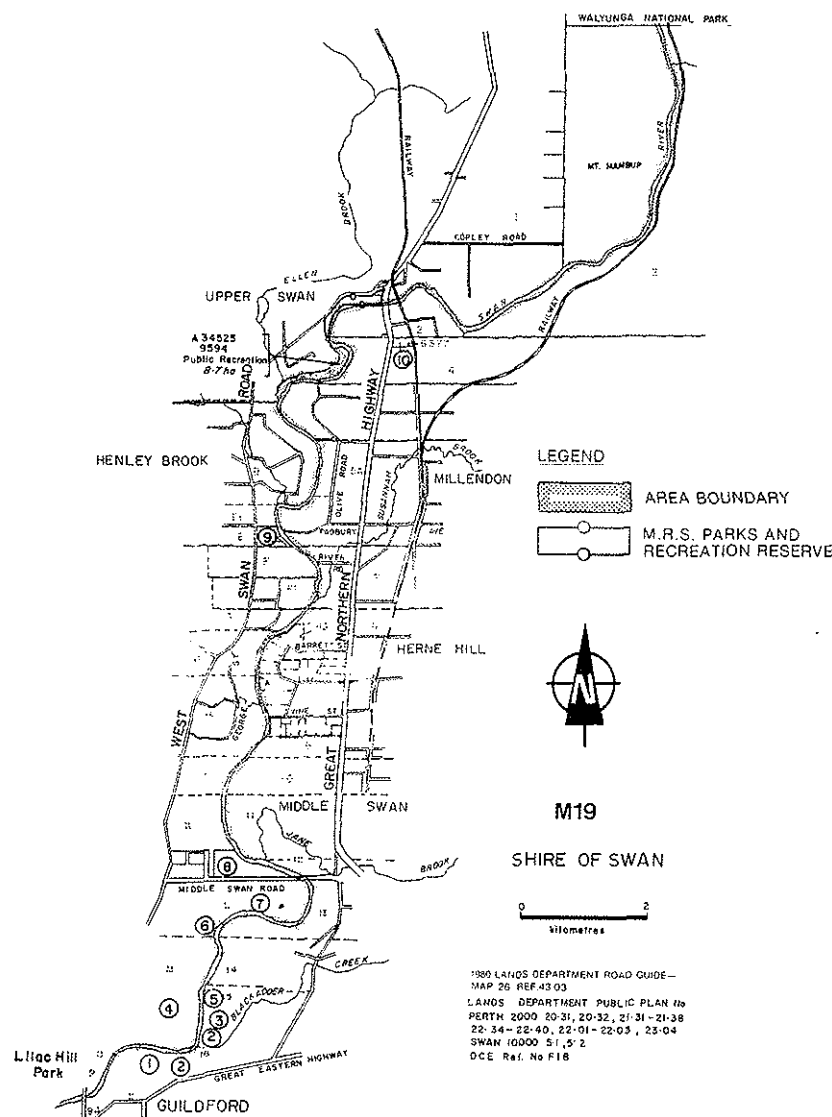


Figure 89

M20 JANE BROOK

The recommended area is situated between John Forrest National Park and the Swan River and comprises part of Reserve C780, for Public Purposes, not vested; part of lots 1 to 6, 14 to 16, 54 to 56 (Location 1160), part of lots 1 to 10 (Location 1114), part of lots 23 and 24 (Location 13), and part of Locations 11, 12, 13, 147, 194, 201, 207, 293, 1253 and 8526, all privately owned freehold land (Figure 90).

The area may be affected by a proposed dam on Jane Brook, and an associated pipeline. There are existing SEC lines. The MWA sees Jane Brook as a possible future drainage outlet. A major road system will cross over part of the Brook. The area has potential for clay, loam and sand, but there are no existing claims. There is pressure for subdivision.

Blackadder and Woodbridge Creeks, several kilometres to the south of Jane Brook, have been identified by the MRPA as being suitable for future "reservation" for Parks and Recreation under the Metropolitan Region Scheme. The Blackadder Creek wetland contains stands of paperbark and has significant conservation value.

The area's vegetation is limited to fringing trees along the banks. Flooded gum is the most common in occurrence; in places there are many seedlings of this species, such as near Middle Swan Road where *Grevillea glabrata* also occurs. A few swamp sheoak occur near the confluence with the Swan River, and there are paperbarks further upstream.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; only allowing recreation activities which are compatible with the conservation of flora and fauna; providing pathways along the riverbanks; restricting vehicle access; and the area's potential for clay, loam and sand.

Recommendations:

- M20.1 That the Metropolitan Region Planning Authority prepare a management plan for the area in consultation with the Department of Conservation and Environment.
- M20.2 That the recommendations concerning this area and nearby land in the Metropolitan Region Planning Authority's Eastern Corridor Report are endorsed.

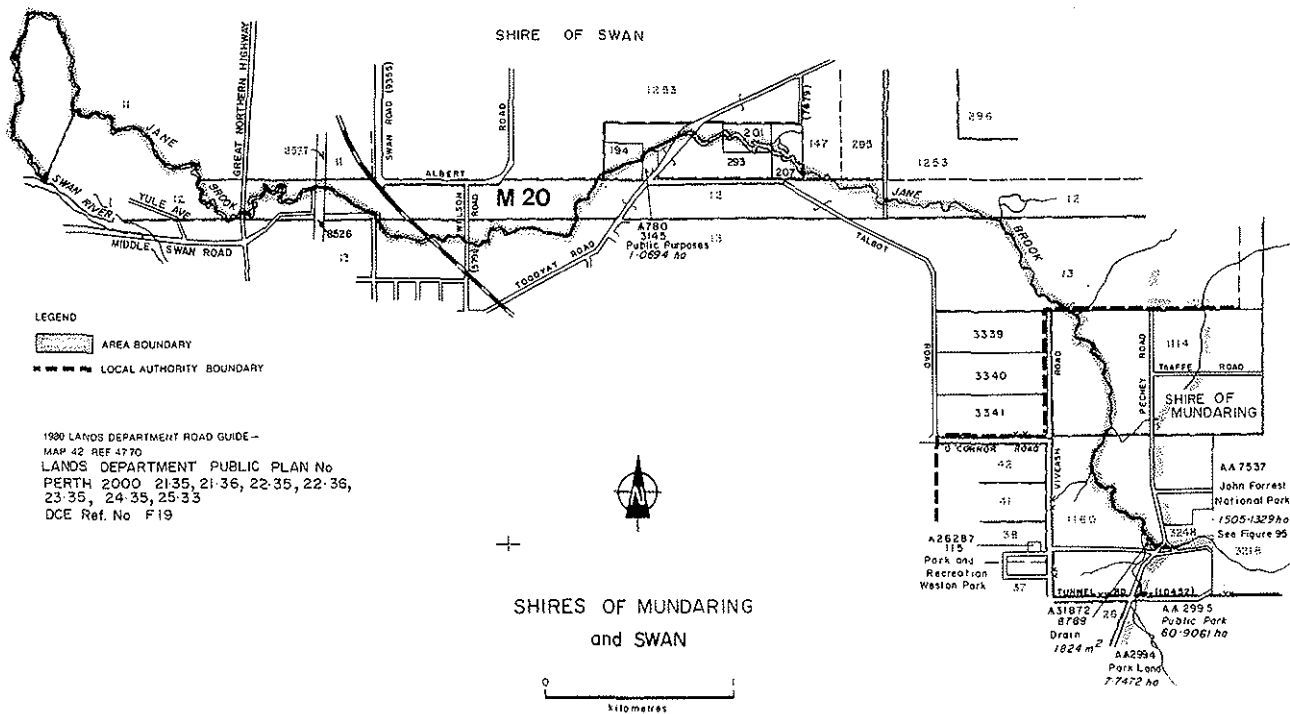


Figure 90

M21 JOHN FORREST NATIONAL PARK

The recommended area is situated north of Great Eastern Highway, about 25km east of Perth and comprises Reserves A7537, for National Park and Native Game, and A8164, for National Park, both vested in the National Parks Authority; and A11396, for Educational Endowment, not vested, but subject to a Crown Grant in Trust; part of lot 13, all of lots 14 to 16, 19 to 21 (Location 1114), lot 22 (Location 13), lot I and 80 (Location 1310), lots 2, 3, 5 and 6 (Location 1253), lots 20 to 24, 27 to 30 (Location 1160), all freehold land owned by the MRPA; and part of lot II (Location 1114), privately owned freehold land (Figure 91). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme, as part of a system of "reserved" land extending through Greenmount to Helena Valley (M34).

The area is within the Jane Brook Catchment. The MWA has preliminary plans for a small pipehead dam on Jane Brook, which would supply water to the Mirrabooka Treatment Plant. Public access would be restricted by Catchment Zone regulations. The environmental effects of this proposed dam need to be examined before a decision is made to proceed, since some of the restricted Scarp flora would be destroyed if flooded. There are SEC lines in the area. Minor widening of Great Eastern Highway on the north side will be required if the Hills Parkway goes ahead. The MRD states that it will require gravel for the Midland-Goomalling (Toodyay) Road from the extreme north portion of M21. There are clay deposits in lot 63 (Location 1317) which adjoins the northern boundary of the area.

John Forrest National Park carries primarily open-forest and woodland of jarrah and marri. In doleritic soils on some slopes, wandoo is the dominant species. The Scarp flora is poorly represented.

The proposed extension to the north of the Park is dissected by several winter creeks, notably Jane Brook. It carries jarrah, marri and wandoo but, more importantly, extensive areas of Scarp vegetation around granite outcrops. Some of the plants are restricted to the Scarp near Perth and are poorly represented in existing reserves, including *Acacia oincinophylla*, *Calothamnus rupestris* and *Darwinia thymoides*. Also there is a good stand of rock sheoak on Red Hill.

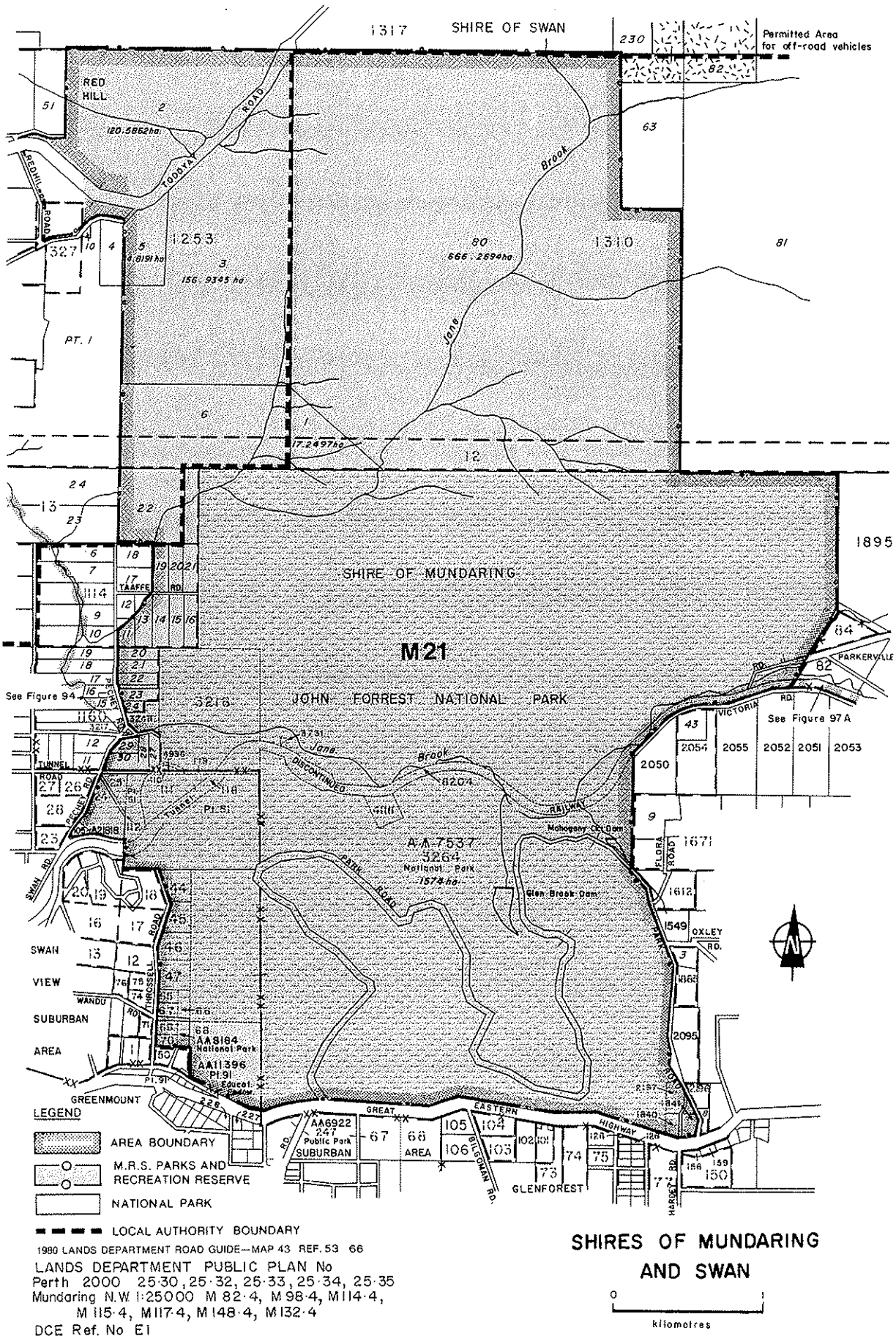
The Park is used intensively for recreation, especially in the vicinity of the kiosk and car parks, and along Jane Brook between the two main waterfalls. The remainder of the Park is used for such activities as horse riding and orienteering; also some disused clay pits adjoining the north-east corner of lot I have been set aside for the use of off-road vehicles.

The proposed extension would complement the existing Park by providing an area of conservation value with little current recreational use.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values, its proximity to the growing Perth urban area and its attraction to increasing numbers of visitors. Management of the recommended area will require coordination so that recreational use may continue to increase without adversely affecting the area's natural attractions and conservation value.

Recommendations:

- M21.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M21.2 That Reserve A8164 be cancelled and its area added to Reserve A7537.
- M21.3 That, subject to the agreement of the Public Education Endowment Trust, Reserve A11396 be cancelled and its area added to Reserve A7537. If no agreement is reached, the Trust should prepare a management plan for Reserve A11396.
- M21.4 That the land owned by the Metropolitan Region Planning Authority be managed as if part of the National Park.



M22 RESERVES A12453 AND C12085, PARKERVILLE

The recommended area is situated in Parkerville, to the east of John Forrest National Park and comprises Reserves A12453, for Parklands and Recreation, and C14163, for Parklands, both not vested; C27431 for Gravel, vested in the Shire of Mundaring; and C12085, for Education Endowment, not vested but subject to a Crown Grant in Trust (Figure 92).

Reserve A12453 is within the Jane Brook Catchment and Reserve C12085 is within the Mahogany Creek Catchment, both potential sources of water supply. They may be affected by a future pipehead dam to be constructed just below the confluence of Jane Brook and Mahogany Creek. Reserve C27431 has been used for gravel extraction but is being rehabilitated by the Shire.

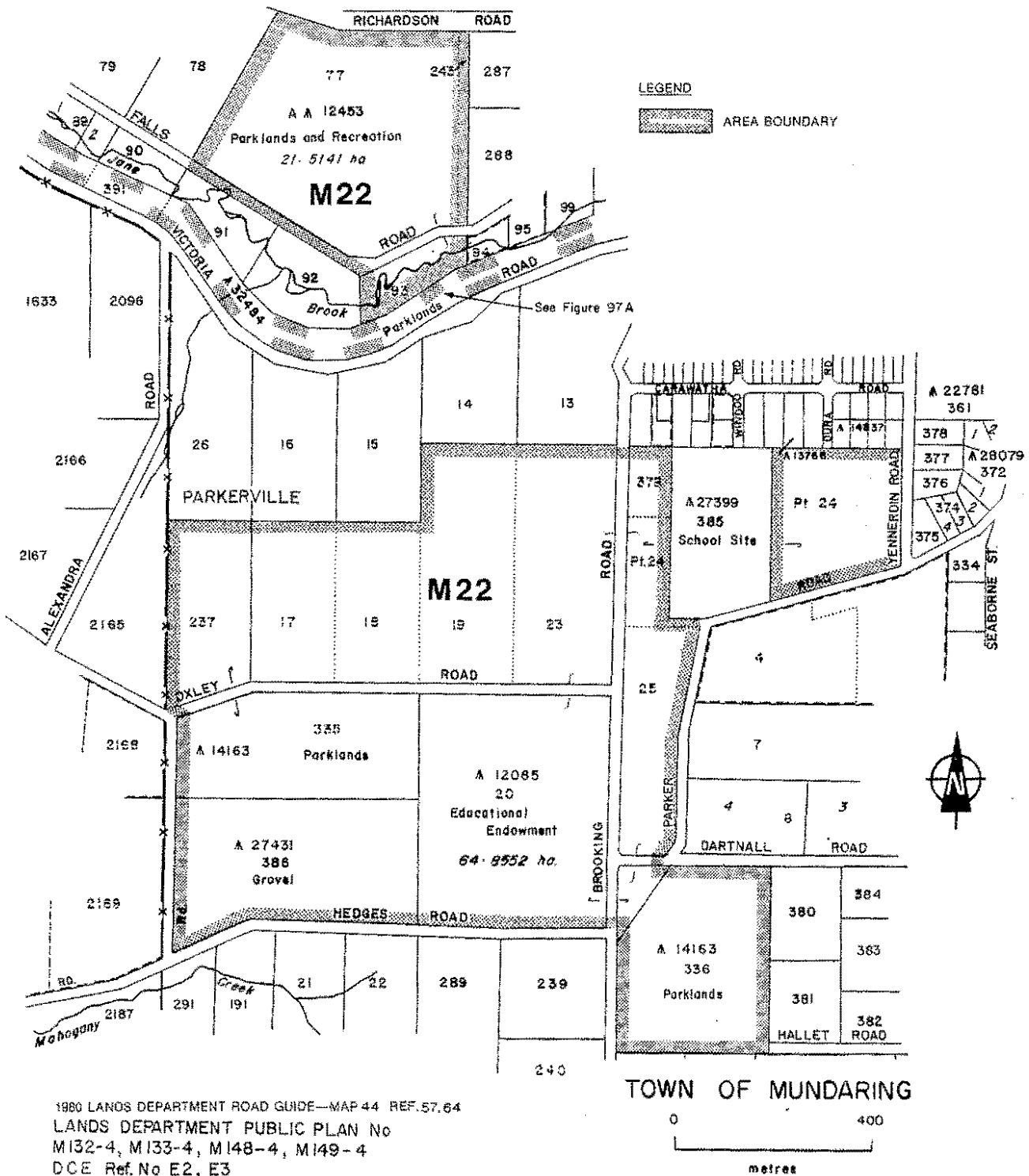


Figure 92

Reserve A12453 lies on a steep hillside and contains an interesting granite outcrop surrounded by open-forest of jarrah and marri; the reserve is valuable for passive recreation and education and should be managed to conserve the natural vegetation as far as possible. Reserve C12085 contains typical jarrah forest.

In the event of subdivision between Alexandra and Brooking Roads, a Local Open Space linkage should be provided from Reserve C12085 to Reserve C32484 (M23) and A12453.

Important management considerations include: encouraging the growth and regeneration of local indigenous flora and only allowing recreation activities which are compatible with the conservation of flora and fauna.

Recommendations:

M22.1 That Reserve A12453 be vested in the Shire of Mundaring.

M22.2 That subject to the agreement of the Public Education Endowment Trust, Reserve C12085 be cancelled and its area added to Reserve A12453. If no agreement is reached, the Trust should prepare a management plan for Reserve C12085.

M22.3 That Reserve C14163 be vested in the Shire of Mundaring.

M22.4 That Reserve C27431 be cancelled and its area added to Reserve C14163.

M23 RESERVES ALONG DISUSED RAILWAYS — MIDLAND TO CHIDLOW

The recommended area comprises Reserves C31196, C32436, C32483 and C32484, for Parklands, all vested in the Shire of Mundaring. The Reserves contain sections of disused railways between Midland and Chidlow via Parkerville, and between Midland and Mount Helena via Glen Forrest (Figures 93A and B).

Portions of the area are within the Lower Helena River and the Jane Brook Catchments which are existing and potential sources of water supply respectively.

Together the Reserves form a continuous linear park which is valuable for passive recreation such as walking and riding. There are remnants of the indigenous vegetation and those should be retained wherever possible; any revegetation programme undertaken should use only local native species to maintain the "Hills" character of these long corridors.

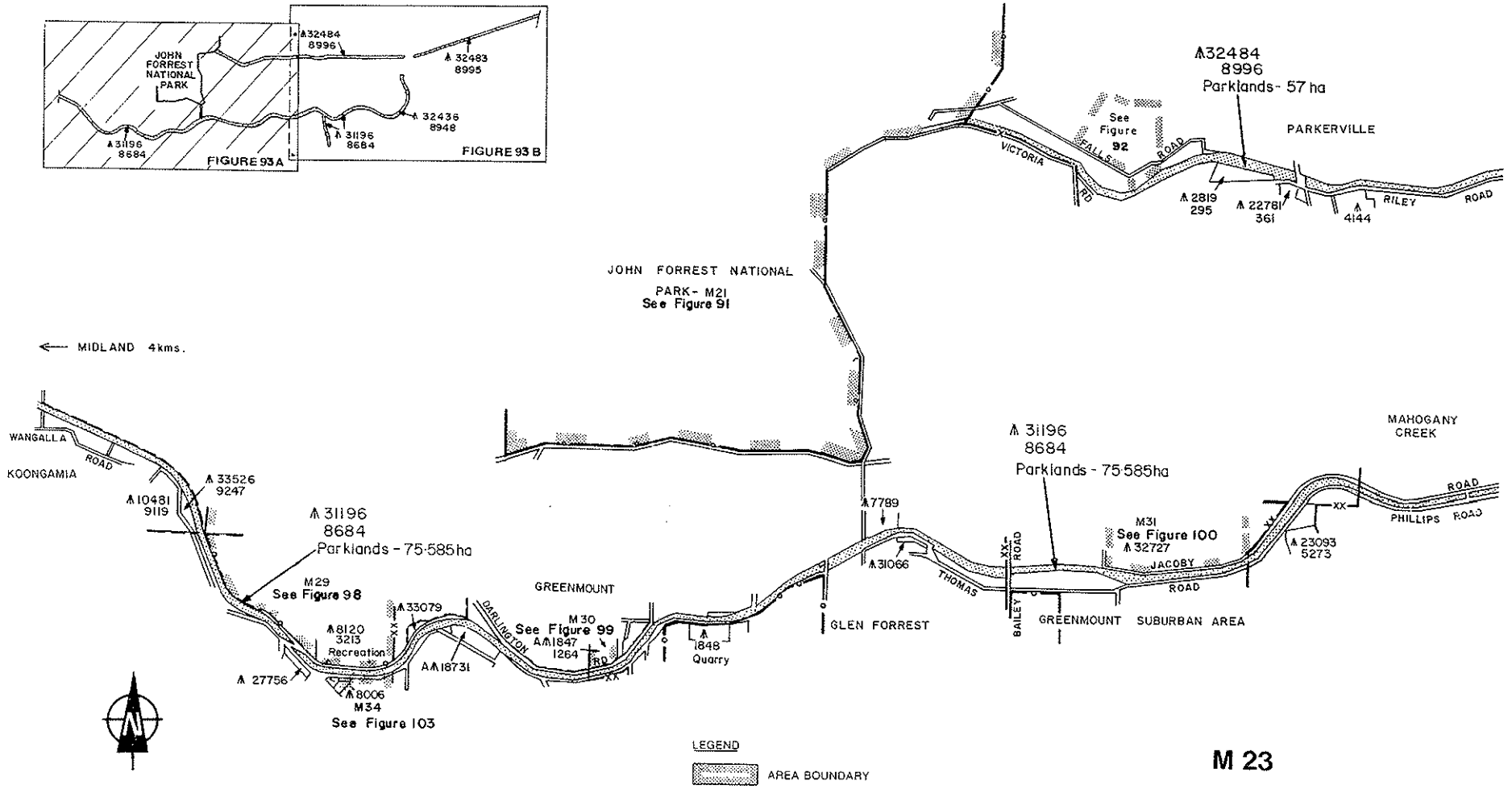
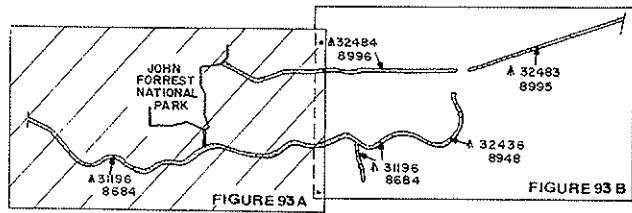
The Mundaring Shire Council has proposed that Reserves C23499, for Gravel, and C19709, for Educational Purposes, both not vested, be included in the area.

Recommendations:

M23.1 That Reserve C31196 be re-vested, with existing special conditions, in the Shire of Mundaring at the expiry of the present term of vesting (February 1984).

M23.2 That Reserves C32436, C32483, and C32484 be cancelled and their respective areas added to Reserve C31196.

M23.3 That the Mundaring Shire Council prepare a management plan, giving consideration to encouraging the growth and regeneration of local indigenous flora.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 53 REF. 55 59

LANDS DEPARTMENT PUBLIC PLAN No
 Perth 2000 37-35, 38-35, M132-4, Perth 2000 24-30, 24-29, 25-29,
 M133-4 - M136-4, M120-4, M150-4, M151-4, M163-4, M164-4, M165-4
 DCE Ref. No E 4 (1)

M 23
SHIRE OF MUNDARING

Figure 93A

M24 RESERVES NORTH-WEST OF CHIDLOW

The recommended area is situated about 4km north-west of Chidlow and comprises Reserves C29269, for Parkland and Recreation, vested in the Shire of Mundaring; C18924, for Timber, not vested; and the western section of Reserve C4967, for Timber, not vested (Figure 94).

The MRPA has indicated that the area might be considered suitable for Parks and Recreation "reserves" under the Metropolitan Region Scheme.

The area is within the Wooroloo Brook Catchment, a potential source of water supply. It may be affected by a possible storage dam on the Wooroloo Brook near its confluence with the Swan River. Public access would be restricted to some extent by Catchment Zone regulations. There are SEC lines in the area. The MRD has recently commenced extraction of gravel from the area and states that continued extraction will be required. The area is within both the Alcoa Mining Lease and Pacminex Agreement Area; however the potential for bauxite is low and Pacminex has no plans for mining in the area.

Reserve C29269 is gently undulating and contains open-forest on yellow-brown sand mixed with gravel. Jarrah and marri are the dominant species, with some bull banksia. In the understorey are shrubs such as white myrtle, hairy jugflower, honeybush and buttercups. There has been some disturbance through tree felling but the vegetation is otherwise in good condition.

The western portion of Reserve C4967 is gently undulating and partly dissected by seasonal creeks. The vegetation consists of open-forest of jarrah and marri, with some bull banksia, sheoak, parrot bush and snottygobble. Understorey species include hairy jugflower, honeybush, couch honeypot, blackboy and prickly bitter-pea. There has been some disturbance due to tracks and tree felling but the vegetation is generally in good condition.

Together with Lake Leschenaultia (M25), the area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation value and its high recreation potential. Lake Leschenaultia is already a popular picnic ground and recreational use of the area is likely to increase. Coordinated management of the two areas is necessary to help cater for the increasing recreational demands on these reserves.

Recommendations:

- M24.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M24.2 That Reserve C18924 be cancelled and its area added to Reserve C29269.
- M24.3 That the western section of Reserve C4967 be excised and added to Reserve C29269.
- M24.4 That the Mundaring Shire Council plan to retain as much as possible of the natural vegetation of Reserve C29269.

M25 LAKE LESCHENAULTIA

The recommended area is situated about 3km west of Chidlow and comprises Reserves C23165, C25433 and C31053, all for Recreation and all vested in the Shire of Mundaring; Reserves C22852, for Gravel, and C31052, for Government Requirements, both not vested; and part of State Forest No.68 (Figure 94). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme. The Forests Department has designated State Forest No.68 as a Recreation Management Priority Area in its Working Plan No. 87.

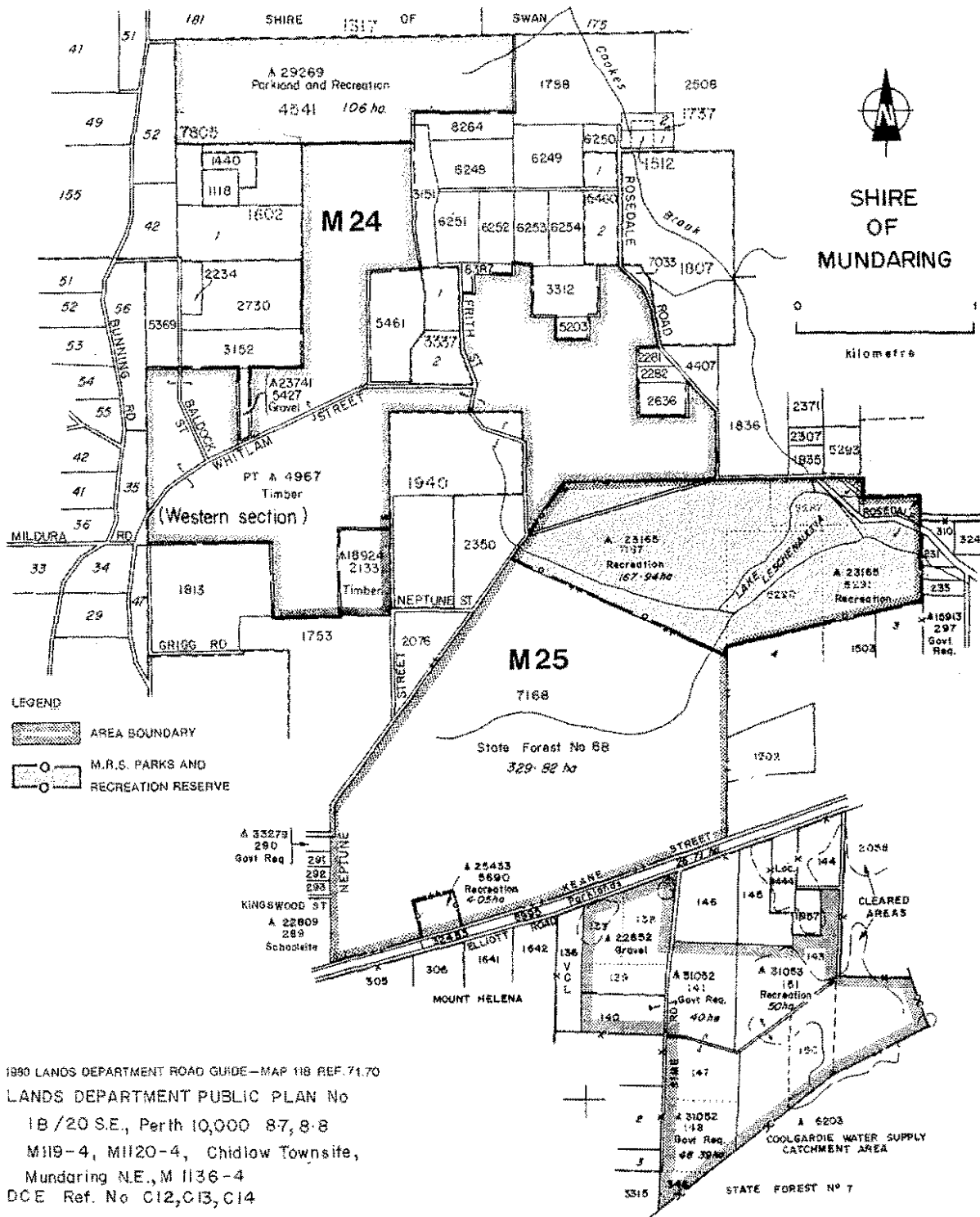
The area is partly within the Wooroloo Brook and Jane Brook Catchments, potential sources of water supply. Two storage dams may be constructed, one just below the confluence of Jane Brook and Mahogany Creek, and the other on Wooroloo Brook near its confluence with the Swan River. Public access would be restricted to some extent by Catchment Zone regulations. There are SEC lines in the area.

The area's most notable feature is Lake Leschenaultia, which was created artificially by a dam built in 1912 to provide water for steam engines. Five intermittent creeks flow into the lake, draining Chidlow townsite, farmland, the rubbish depot (in the process of closure), and State Forest. The area contains five principal vegetation associations. The lateritic uplands, which cover most of the area, carry open-forest of jarrah with some marri; small trees contained in the understorey are principally bull banksia, sheoak and snottygobble. Woodland of jarrah with a differing understorey occurs south of the lake. Confined to the depressions is open-forest of wandoo, marri and yarri, with understorey species including Drummond's wattle, pepper-and-salt, white myrtle and rose banjine. In muddy depressions which are waterlogged in winter there are two associations of closed-scrub vegetation, one dominated by *Acacia saligna* and the other by *Melaleuca microphylla*. Sedgeland of jointed twig-rush and *Leptocarpus aristata* extend into the water around most of the lake's edge. A number of exotic plants are established in the area but

they are mainly restricted to the creeks and lake surrounds. The variety of habitat is important for the area's diversity of bird species, of which some seventy have been identified. The area also supports native mammals such as the western brush wallaby, western grey kangaroo and quenda; as well there is a variety of reptiles and amphibians inhabiting the area.

The State Forest section contains an Aboriginal site which is typical of those found in the Darling Range, many of which have been destroyed by land development.

The lake is important for recreational activities such as swimming, picnicking and nature study. Being the only substantial body of water in the Darling Range east of Perth that is accessible to the public for recreation, it is particularly well used in summer. The growing number of visitors does however create some management problems, particularly in keeping the area clean and preventing bush fires.



1990 LANDS DEPARTMENT ROAD GUIDE—MAP 118 REF. 71.70
 LANDS DEPARTMENT PUBLIC PLAN No
 1B/20 S.E., Perth 10,000 87, 8-8
 M119-4, M1120-4, Chidlow Townsite,
 Mundaring N.E., M 1136-4
 DCE Ref. No C12,C13,C14

Figure 94

Together with Reserves C29269, C18924 and C4967 (see M24), the area constitutes open space of regional significance because of its high conservation and recreation values (see Figure 1, Chapter 4). It is already an important regional recreation resource, and if management is coordinated with the adjacent reserves (see M24), the expected increase in usage of the area could be catered for more efficiently and with less adverse effect on the area's conservation value.

Important management considerations include: encouraging the growth and regeneration of local indigenous flora; maintaining water-bird habitats; allowing only passive recreation activities so as not to reduce the area's conservation value; protecting the Aboriginal site in State Forest No.68; and encouraging and providing for educational use of the area.

Recommendations:

- M25.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M25.2 That Reserves C22852 and C31052 be cancelled and their respective areas added to Reserve C31053.

M26 RESERVES NORTH-EAST OF CHIDLOW

The recommended area is situated about 2km north-east of Chidlow and comprises Reserve C17100, for Timber, not vested; the eastern section of Reserve C4967, for Timber, not vested; and Reserve C27248, for Gravel, not vested (Figure 95).

The area is within the Wooroloo Brook Catchment, a potential source of water supply. It may be affected by a storage dam on the Wooroloo Brook near the confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. There are SEC lines in the area, and also a gravel pit to which the MRD will continue to require access. The "Hills Parkway" or an alternative east-west road link may affect the area in the future. The area is partly within both the Alcoa Mining Lease and the Pacminex Agreement Area; however the potential for bauxite is low and Pacminex has no plans for mining in the area.

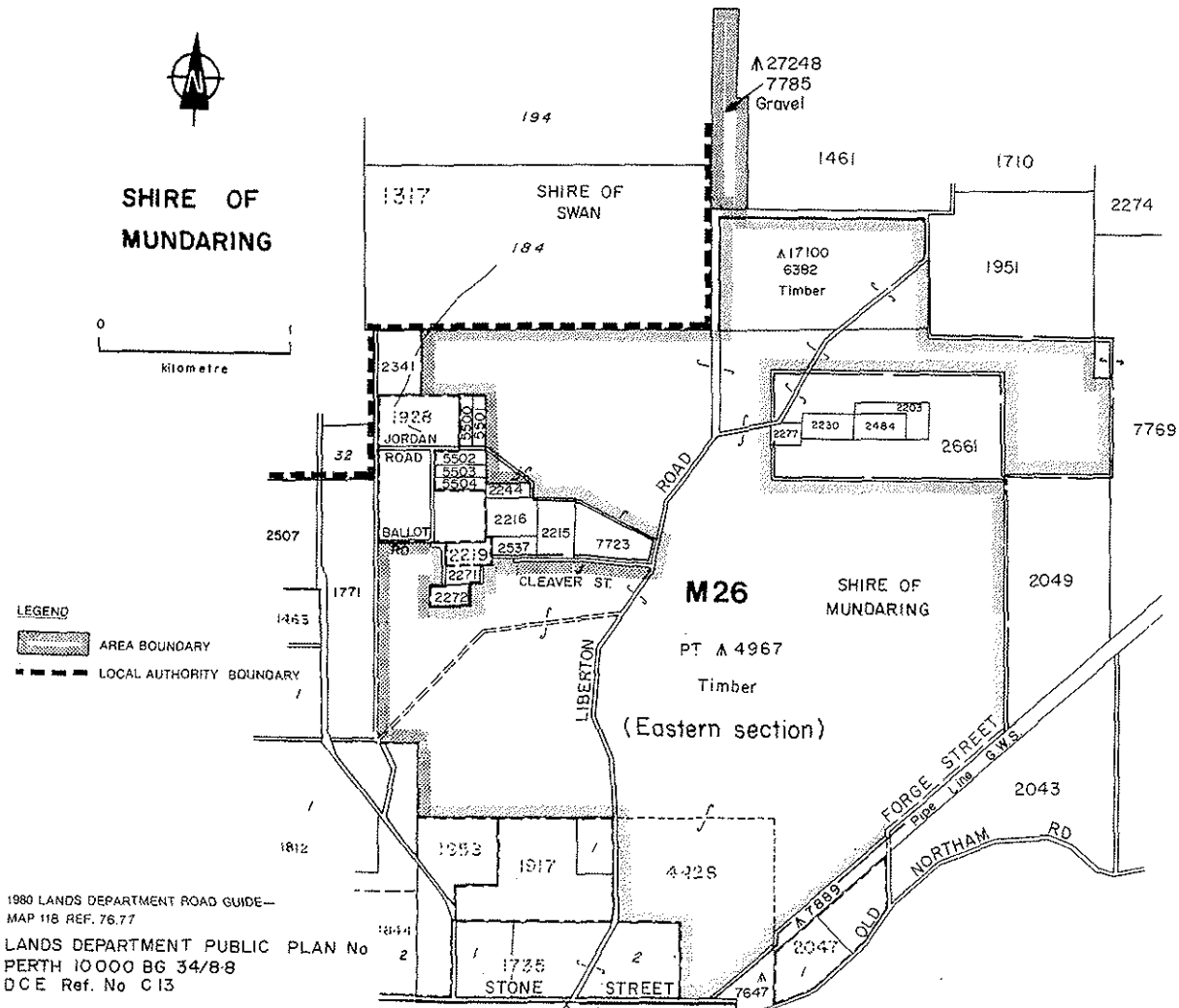


Figure 95

The eastern section of Reserve C4967 resembles the western section (M24), being gently undulating and partly dissected by seasonal creeks. The vegetation is open-forest of jarrah and marri with some bull banksia, sheoak, parrot bush and snottygobble. Species in the understorey include hairy jugflower, honeybush, couch honeypot, blackboy and prickly bitter-pea. There has been some disturbance due to tracks, a gravel pit and tree felling, but the vegetation is generally in good condition. Reserve C17100 is similar in landform and vegetation.

Recommendations:

- M26.1 That Reserve C17100 be cancelled and its area added to Reserve C4967 (Eastern section).
- M26.2 That Reserve C27248 be cancelled and its area added to Reserve C4967 (Eastern section).
- M26.3 That the purpose of Reserve C4967 be amended to Parkland and Recreation and that the Reserve be vested in the Shire of Mundaring.

M27 RESERVES NORTH OF LAKE MANARING

The recommended area is situated near the intersection of the Great Eastern and Great Southern Highways about 40km east of Perth and comprises Reserves C30667, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority; C25033, Excepted from Sale, C30681, for Conservation of Flora and Fauna, and C30797, for Government Requirements, all not vested (Figure 96).

The area is within the Wooroloo Brook Catchment, a potential source of water supply. It may be affected by a possible storage dam on the Wooroloo Brook, near its confluence with the Avon River. Public access would be restricted to some extent by Catchment Zone regulations. The area contains gravel and the MRD states that it will require access to it; also the Shire of Mundaring wishes to extract gravel from part of Reserve C25033. A small area from C30681 will be required for the realignment of Great Eastern Highway.

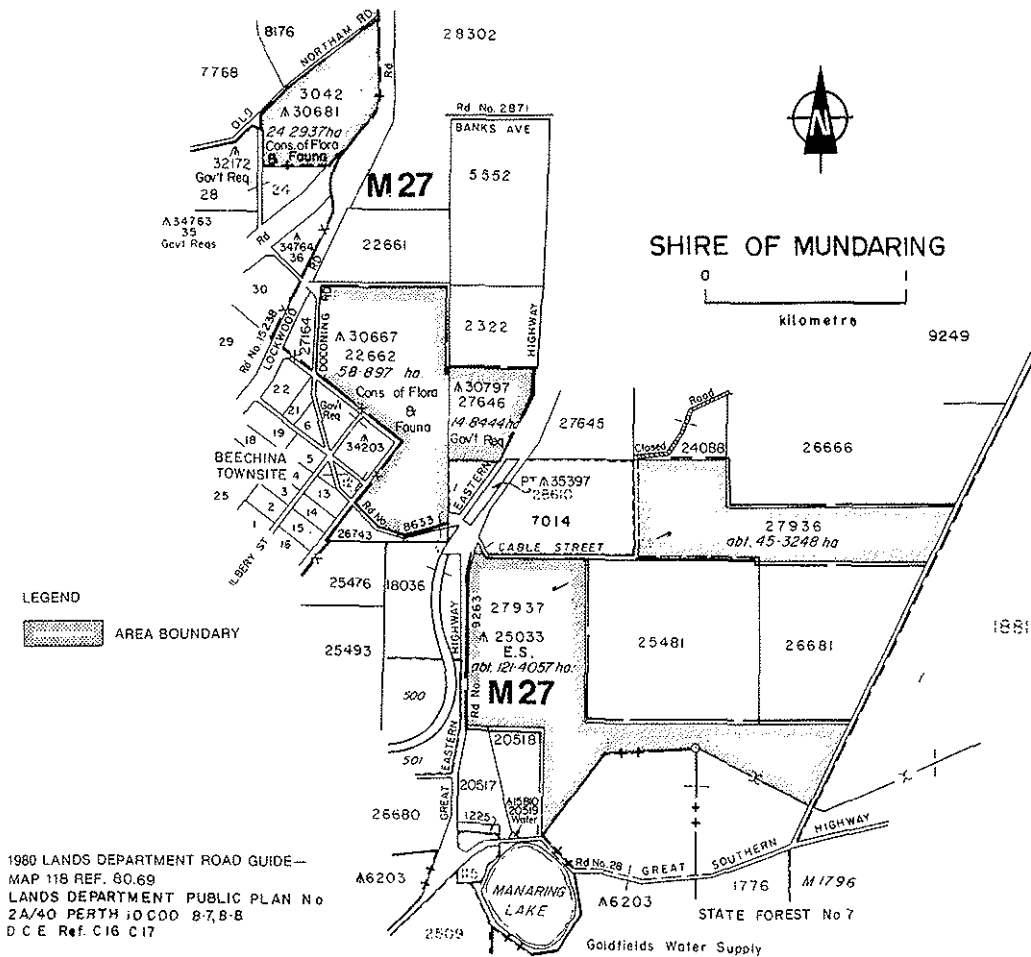


Figure 96

Reserve C25033 is in two sections, each occupying a ridge with the intervening valley having been cleared for agriculture. The northern section lies along a high lateritic ridge and has low open-woodland of wandoo and marri. The southern section is lower, most of it being gravelly and supporting forest and woodland of jarrah with some marri and wandoo. The understorey is low in places, of special note being a good population of *Adenanthos teges*, a rare mat plant of horticultural potential.

Lake Manaring, to the south, is a small wetland in private ownership. There has been some pressure to dredge it to make it an ornamental lake.

Reserves C30667, C30681 and C30797 occupy a broad lateritic ridge with a few sandy areas occurring on the western side. The vegetation, which is somewhat different to that in Reserve C25033, is open-woodland dominated by jarrah with some marri. There is a dense low storey of trees that includes parrotbush, sheoak and bull banksia, and also a low shrub layer.

Recommendations:

M27.1 That Reserve C30667 be classified as Class A.

M27.2 That Reserves C25033, C30681 and C30797 be cancelled and their respective areas added to Reserve C30667.

M28 RESERVE C14278, EAST OF WOOROLOO

The recommended area is situated on the south side of the Great Eastern Highway, near Wooroloo, about 40km east of Perth. It comprises Reserve C14278, for Timber, not vested (Figure 97).

The Reserve is within the Wooroloo Brook Catchment, a potential source of water supply. It may be affected by a possible storage dam on the Wooroloo Brook near its confluence with the Avon River. The northern boundary will be affected by realignment of the Great Eastern Highway.

The land slopes gently upwards from the highway to a broad lateritic ridge and contains a low woodland of an interesting assemblage of species: wandoo, powderbark, marri and jarrah. The understorey is mostly low and open, including species such as blackboy, prickly moses, harsh hakea, couch honeypot and honeybush. Little of this vegetation is conserved in reserves along the Great Eastern Highway as the area is being increasingly cleared. The vegetation is in good condition other than having been subject to limited disturbance by gravel extraction and timber cutting.

Recommendation:

M28.1 That the purpose of Reserve C14278 be amended to Conservation of Flora and Fauna, and that the Reserve be vested in the W.A. Wildlife Authority.

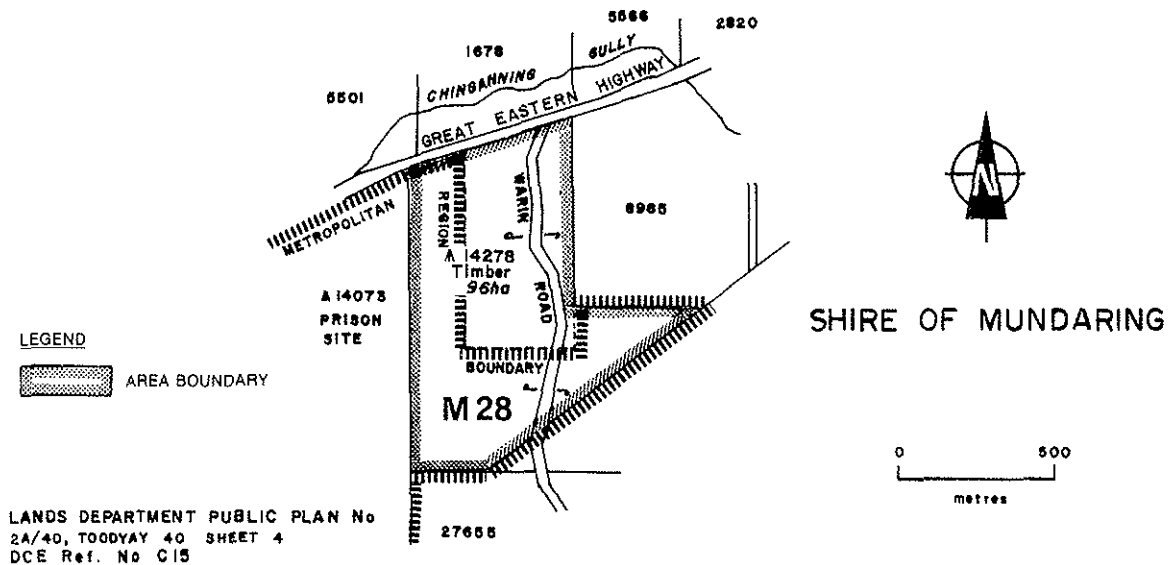


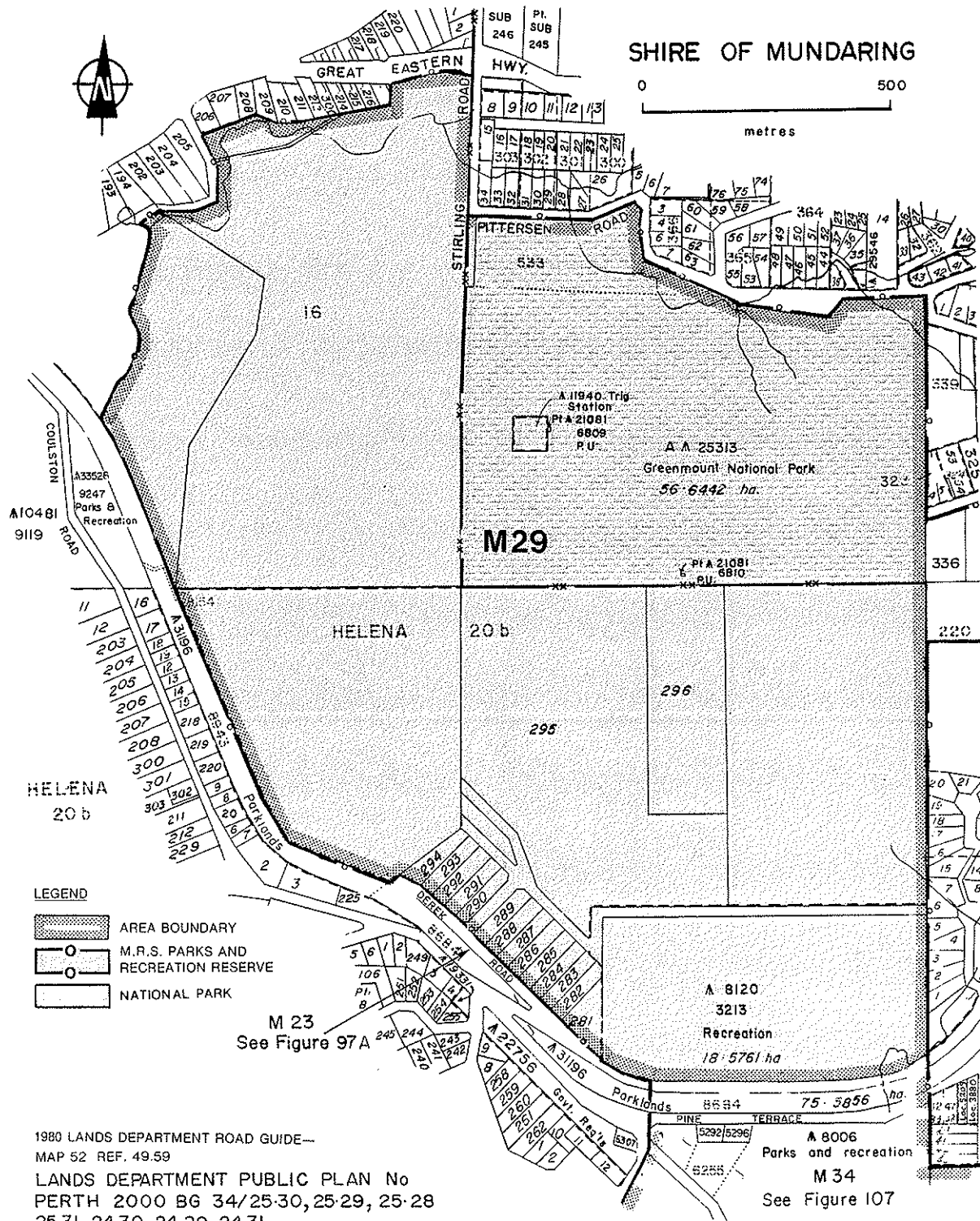
Figure 97

M29 GREENMOUNT NATIONAL PARK

The recommended area is situated at Greenmount, just south of the Great Eastern Highway, and comprises Reserve A25313, for National Park, vested in the National Parks Authority; Reserve C8120, for Recreation, vested in the Shire of Mundaring; Reserve C11940, for Trigonometric Station, not vested; Reserve C21081, for Public Utility, not vested; and lots 281 to 296 (Helena Location 206) and parts of Location 16 and Helena Location 20a, all freehold land owned by the MRPA (Figure 98). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

There are SEC lines in the area.

Land "reserved" by the MRPA for Parks and Recreation under the Metropolitan Region Scheme links the area with the John Forrest National Park (M21) and the Helena Valley (M34).



1980 LANDS DEPARTMENT ROAD GUIDE—
 MAP 52 REF. 49.59
 LANDS DEPARTMENT PUBLIC PLAN No
 PERTH 2000 BG 34/25-30, 25-29, 25-28
 25-31, 24-30, 24-29, 24-31
 D.C.E. Ref. No E6

Figure 98

The National Park occupies a spur between two valleys on the Darling Scarp. There is low woodland of jarrah, wandoo and sheoak on lateritic soils and heath on shallow granitic soils. The Park provides extensive views across the Coastal Plain, into the Helena Valley and north along the Scarp. The south-western section descends steeply down to Coulston Road: the slopes have stands of marri and wandoo and some rich shrub flora associated with rugged outcrops of granite. Reserve C8120 contains a creek lined with flooded gum.

The area has high conservation value but is too small and too close to residential areas to be viable as a National Park. However, the Kings Park Board is seeking a Park annexe in the hills where native flora suited to heavy soils can be grown. The Greenmount National Park, with proposed additions, may provide a suitable site for such an annexe since the area contains a variety of soils and landforms, and part of a natural creek.

The area contributes to open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values and its proximity to the Perth urban area. There are various land tenures, and to enhance these values the management structure of the area requires coordination.

Recommendation:

M29.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M30 RESERVES A1847 AND C31178, DARLINGTON

The recommended area is situated on a steep hillside, west of the Greenmount suburban area, and comprises Reserves A1847, for National Park, vested in the Shire of Mundaring, and C31178 for Recreation, not vested (Figure 99). Reserve A1847 is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The vegetation includes a very good example of jarrah and marri woodland and associated understorey. Because the area is small the current National Park status is inappropriate and it should be managed instead as Parkland for passive recreation.

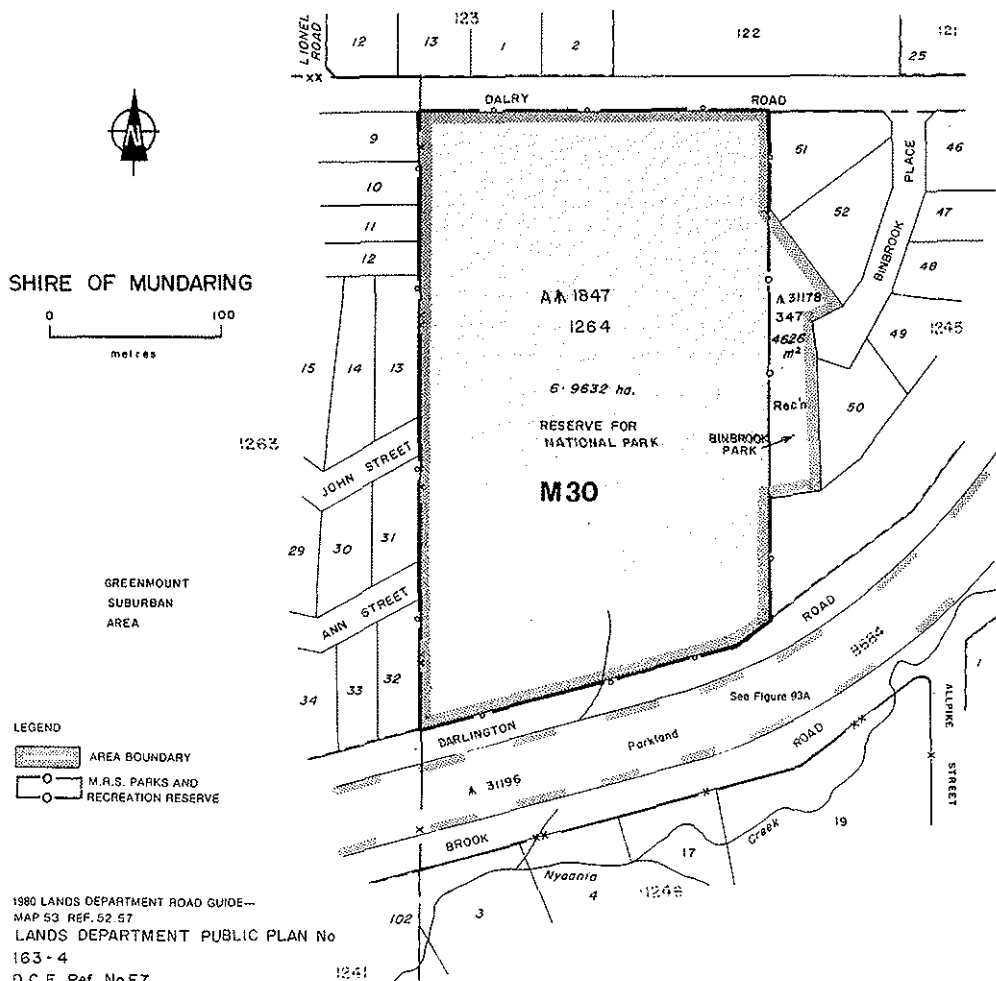


Figure 99

Recommendations:

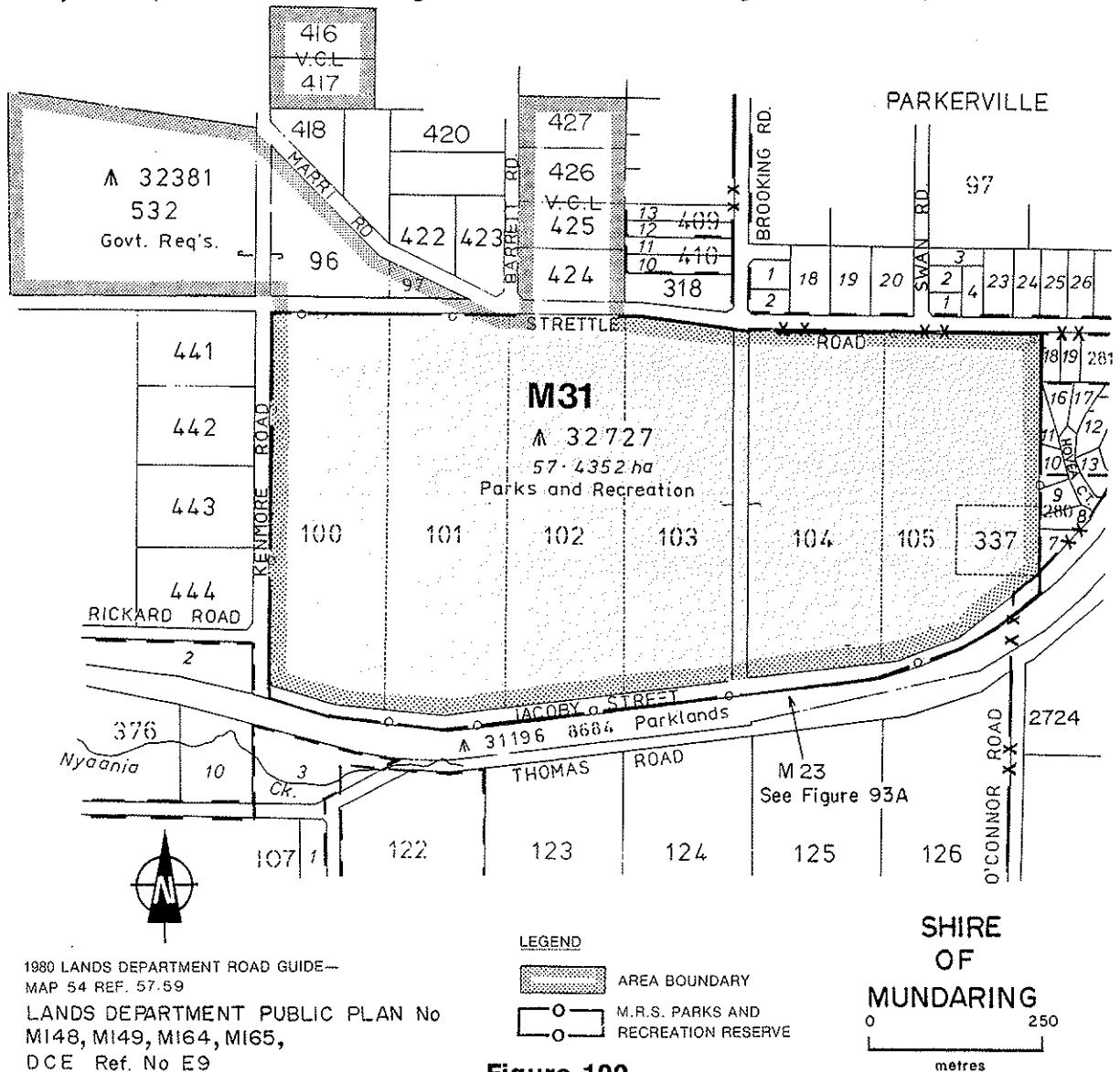
- M30.1 That the purpose of Reserve A1847 be amended to Parkland.
- M30.2 That Reserve C31178 be cancelled and its area added to Reserve A1847.
- M30.3 That the Mundaring Shire Council, in consultation with the Department of Conservation and Environment, prepare a management plan, giving consideration to encouraging the growth and regeneration of local indigenous flora.
- M30.4 That the Metropolitan Region Planning Authority consider "reserving" those portions of the recommended area not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

M31 RESERVE C32727, MUNDARING

The recommended area is situated to the south of the Great Eastern Highway, about 4km west of Mundaring, and comprises Reserve C32727, for Parks and Recreation, not vested; Reserve C32381, for Government Requirements, not vested; and Locations 416, 417 and 424 to 427, vacant Crown land (Figure 100).

The Reserve lies in the lower Helena River Catchment and the Mahogany Creek Catchment, existing and potential sources of water supply respectively. It may be affected by a future pipehead dam to be constructed just below the confluence of Jane Brook and Mahogany Creek.

The area provides a good example of the lateritic upland of the Western Plateau. The vegetation consists of open-forest of jarrah and marri, along with smaller trees such as bull banksia, snottygobble and, in the south-western section, sheoak. The area is in good condition, little disturbed by tracks, and should be managed to retain the natural vegetation where possible.



Recommendations:

- M31.1 That Reserve C32727 be vested in the Shire of Mundaring.
- M31.2 That Reserve C32381 be cancelled and its area added to Reserve C32727.
- M31.3 That the vacant Crown land be declared a Class C Reserve for Parks and Recreation and that the Reserve be vested in the Shire of Mundaring.
- M31.4 That the Mundaring Shire Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area, giving consideration to encouraging the growth and regeneration of local indigenous flora.

M32 RESERVES C18130 AND C34103, SAWYERS VALLEY

The recommended areas are situated on either side of the Great Eastern Highway about 30km east of Perth and comprise Reserves C18130, for Timber, and C34103, for Government Requirements, both not vested (Figure 101).

The areas are within the Jane Brook Catchment, a potential source of water supply. Reserve C18130 may be affected by a future pipehead dam to be constructed just below the confluence of Jane Brook and Mahogany Creek; and may also be affected by a proposed Sawyers Valley bypass road and realignment of Great Eastern Highway. There are SEC lines in the area.

The areas contain open-forest of jarrah and marri with some smaller trees such as bull banksia, sheoak and snottygobble, along with a rich understorey in which prominent species include hairy jugflower, buttercups, waterbush and couch honeypot. The areas are valuable in representing the vegetation of the district which is being progressively cleared for development. It provides a pleasant bushland area for local residents and visitors and a scenic feature adjacent to one of the main routes for traffic entering and leaving Perth.

The areas also serve as a fauna refuge: a number of bird species inhabit the areas as do the western brush wallaby and western grey kangaroo.

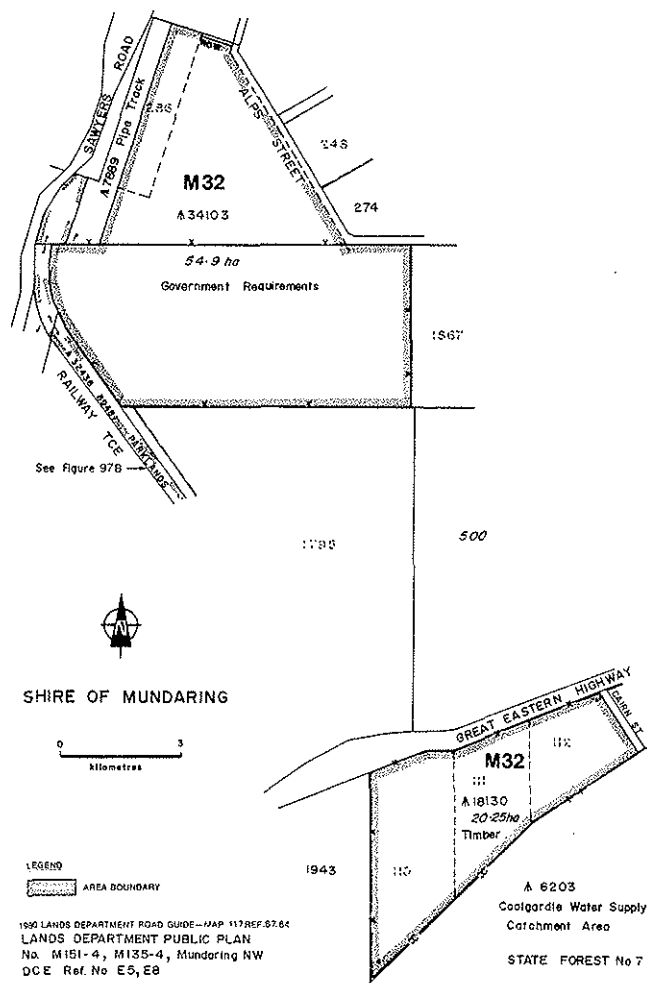


Figure 101

Recommendations:

- M32.1 That the respective purposes of Reserves C18130 and C34103 be amended to Parkland, and that the Reserves be vested in the Shire of Mundaring.
- M32.2 That Reserves C18130 and C34103 be managed for the long-term conservation of the natural flora and fauna.
- M32.3 That the Mundaring Shire Council, in consultation with the Department of Conservation and Environment, prepare a management plan, giving consideration to encouraging the growth and regeneration of local indigenous flora.

M33 HELENA RIVER — GUILDFORD TO DARLINGTON

The recommended area comprises the section of the Helena River from the western boundary of the Darlington Townsite to its confluence with the Swan River at South Guildford (Figure 102). Part of the river and the adjacent land downstream from East Guildford has been "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The MRPA has recommended in its Eastern Corridor Report that the banks of the Helena River and parts of the adjacent flood plain should be "reserved" for Parks and Recreation under the Metropolitan Region Scheme, to be developed and managed as a linear park.

The area may be affected by proposed sewerage and drainage works. There are existing SEC lines. The future Roe Highway will cross the Helena River at Bellevue, and the Dampier to Perth natural gas pipeline will pass through the area. The area has potential for clay, sand and loam.

The river banks retain remnants of the natural vegetation, often in the form of a single row of trees; in places there are scattered solitary trees and bare stretches; and often the landward margin of the flood plain is better wooded than the river bank itself. Flooded gum is the most common tree in the area, with swamp paperbark frequent along the flatter reaches. There is marri on the boulder-strewn banks below Darlington, and wattle is common near the Scott Street Bridge. Introduced trees include ash, occurring near Guildford, and willow in the Helena Valley. On many of the flood plain flats there is good regeneration of flooded gum, but elsewhere ground flora has been denuded by cattle. The groundcover on the flats includes introduced grasses such as *Paspalum distichum* and *Stenotaphrum secundatum*, while on the steeper and rockier slopes of the upper reaches native species are found including prickly moses, *Astartea fascicularis* and *Grevillea glabrata*. There are clumps of *Triglochin procera* in the river.

This vegetation enhances the landscape significantly. The area is suitable for walking, fishing, bird-watching and general enjoyment of the scenery. If stock access to the water was controlled, the fringing vegetation would be maintained and able to regenerate, which in turn would help to prevent erosion of the banks.

The area contributes to open space of regional significance (see Figure 1, Chapter 4) because of its conservation and recreation resources, its proximity to the Perth urban area, and its place in forming a link between other areas of regional open space — the Helena Valley and the Swan River.

Important management considerations include: the need to encourage growth and regeneration of local indigenous flora; provision of pathways along the river; the need to prevent vehicle access; recognition of the area's potential for clay, loam and sand; and controlling stock access to the river banks.

Recommendations:

- M33.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M33.2 That the Metropolitan Region Planning Authority's policy of retaining and protecting the Helena River Valley and related areas of environmental significance, as stated in its Review and Planning Strategy for the Eastern Corridor, is endorsed.

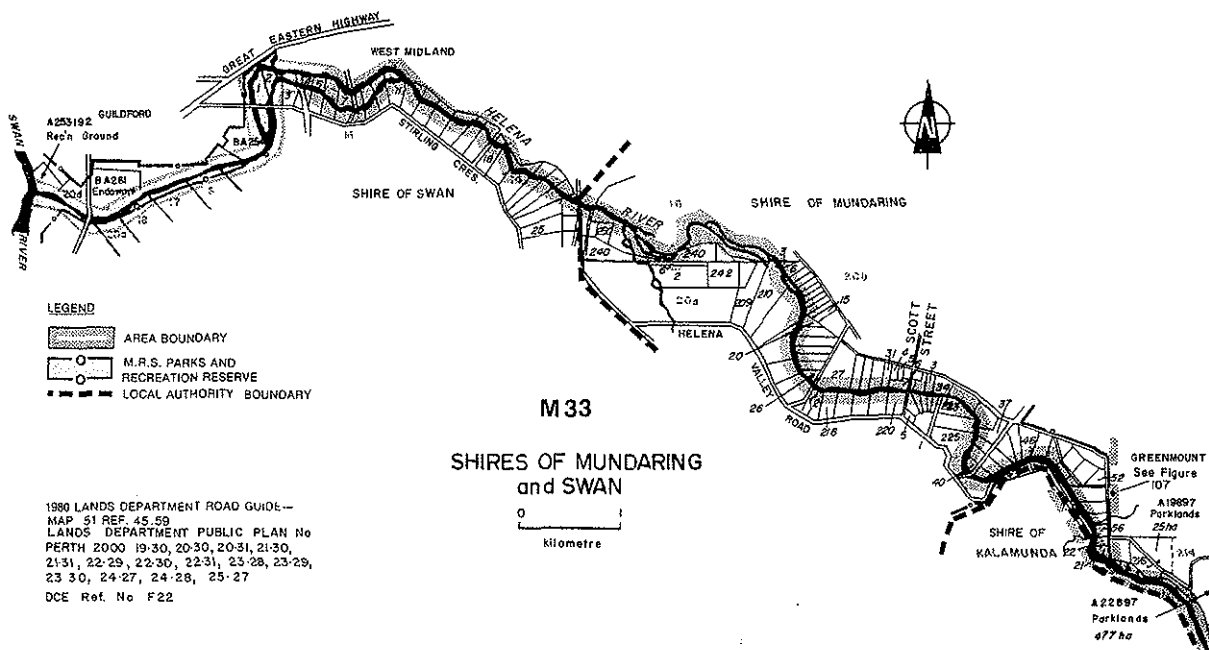


Figure 102

M34 HELENA VALLEY

The recommended area comprises Reserves A21314 and A30200, for National Park, both vested in the National Parks Authority; A23981, for Park, C8006, for Recreation, C19897, for Parklands, and C20765, for Recreation and Bird Sanctuary, all vested in the Shire of Mundaring; A7890, for Surveys Standards Area, vested in the Lands Surveyors Licensing Board; A22835, for Parks and Recreation, vested in the Minister for Works; A24182, for Park, C22897 and C23118, for Parklands, and A23537, for National Park, all not vested; C32890, for Water Supply, and part of C5342, for Camping, both vested in the Minister for Water Resources; C10488, for Education Purposes, vested in the Minister for Education; C27154, for Parks and Recreation, C16922, for Recreation and Water Supply, and C17343, for Public Utility, all vested in the Shire of Kalamunda; part of State Forest No. 54 (but not including the Jacoby land); vacant Crown land (part of Location 975); part of Helena Location 20a adjacent to and east of Ridge Hill Road, lots 1, 2, 11, 12, 263 to 265, 281 to 285, 320, 321, 324, 325, 327, 330 to 333, 336 to 338, 341 to 343, 352 to 362 (Helena Location 20a), lots 7 to 12 (Location 1290), lot 17 (Location 1763), part of lot 119 (Location 1532), lot 3 (Location 119), lot 2 (Location 120), Locations 213, 561, 711, 999, 946, 965, 968, 1181 and part of Locations 963, 972, 1298, 1033 and 1345, all owned by the MRPA; and lots 253 to 258 and part of lots 252 and 351 (Helena Location 20a), lot 4 (Location 119), lot 1 (Location 120), Swan Location 1722, part of Locations 351 and 1763 and all of Locations 455, 982, 5687 and 5688, all privately owned freehold land (Figure 103). Most of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The MRPA's Report "A Review and Planning Strategy" for the Eastern Corridor affects this area. Public access to parts of the area is restricted by the Public Works Department's Catchment Zone regulations for the Goldfields Water Supply Catchment Area. These restrictions are satisfactory in view of the conservation value of that portion of the Helena Valley, since management for water purity requires minimal disturbance of the environment. There are SEC lines in the area. There may be requirements for a major road along the Helena Valley and a controlled access highway between Sawyers Valley and Bushmead, across the northern section. The area contains residential areas, small farms and orchards.

A range of vegetation types occurs in the area. The forests and woodlands are variously dominated by jarrah, marri, wandoo and flooded gum, and there are areas of heath, especially in granitic soils where many plant species typical of the Darling Scarp are found. The portion of the Helena River which lies upstream from the small pumpback dam is particularly valuable, as parts are still in excellent condition and several rare species of flora are to be found there. Although some sections have been burnt too frequently and are in need of careful management, the area as a whole has extremely high conservation value for both flora and fauna. Recreation activities within this portion should therefore be restricted to those which do not diminish its conservation value.

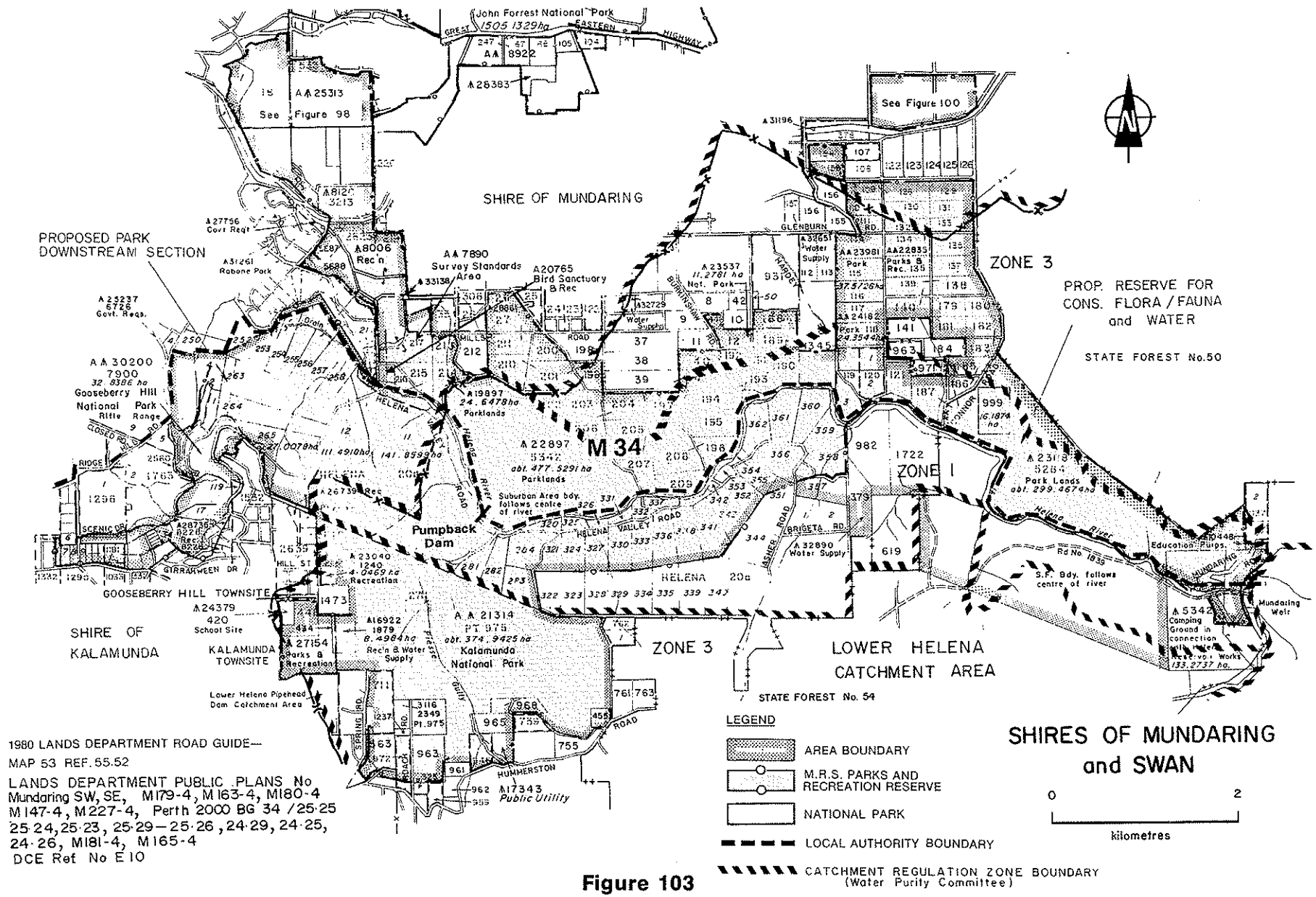
One of the most important conservation areas lies within the Advisory Committee on Purity of Water's Zone 1, between the Pumpback Dam and Mundaring Weir. Zone 1 indicates that this area is considered to be of the highest water quality preservation importance. It is considered that both conservation of flora and fauna and preservation of water quality are compatible uses.

The area as a whole constitutes open space of regional significance (see Figure 1, Chapter 4) because of its important conservation and recreation resources within close proximity to the Perth urban area. The valley is the only major one close to Perth which is virtually in its natural state and with no major traffic arteries through it. The valley is a continuous open space area from the Mundaring Weir and neighbouring State Forest to the Escarpment, is of high scenic value and remains fairly secluded because of the limited number of access points.

The area is subject to a large variety of land tenure ranging from reserves, easements and freehold land in the name of different government agencies and local authorities, to land in private freehold tenure. Although large portions have already been designated for open space purposes, there still remain portions which do not have conservation and recreation as primary management objectives. Thus, to ensure the protection and enhancement of this valuable open space resource the management structure of the area requires coordination.

Recommendations:

- M34.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M34.2 That the portions of the Land Act Reserves within Zone 1 (see Figure 103) be excised and declared a single A Class Reserve for Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the Minister for Water Resources.
- M34.3 That the Minister for Water Resources encourage the owners of private freehold land which is in Zone 1 within the recommended area to include conservation of flora and fauna, and preservation of water quality, in their management priorities.
- M34.4 That the Metropolitan Region Planning Authority ensure that the management of its portion of land within Zone 1 includes conservation of flora and fauna and preservation of water quality.
- M34.5 That the Forests Department amend the management priority of that portion of State Forest within Zone 1 from Recreation and Water Production to Conservation of Flora, Fauna and Landscape, and Water Production.
- M34.6 That the Minister for Water Resources prepare a management plan for the area of land subject to Recommendations M34.2 and M34.3, in consultation with the Department of Fisheries and Wildlife.



M35 STAR SWAMP, NORTH BEACH

The recommended area is situated east of Waterman's beach in the suburbs of Waterman and North Beach and comprises Reserves A21406, for Recreation, vested in the City of Stirling, and lot 218 (Location 564), freehold land held in the name of the City of Stirling, and part of Location 564, freehold land held in the name of the State Housing Commission (Figure 104).

In September 1977, the Environmental Protection Authority recommended to the Government that the area be reserved for the conservation of flora and fauna and recreation. The Government approved this recommendation in 1978 and an independent report to Government by Professor A.R. Main in April 1980, supported the reservation of the area.

Private groundwater extraction and storm-water drainage will affect water levels and groundwater may become polluted by local septic systems. The area may be affected by proposed sewerage and drainage works.

Star Swamp is bordered to the east, north and south by low open-forest of swamp paperbark, with an understorey dominated by the sedges *Juncus maritimus* and *Baumea juncea*, with some *Scirpus maritimus* and the blue-flowered *Lobelia alata*. A variety of acacia shrubs occurs on the dry side of the open-forest. The remainder of the vegetation in the swamp basin includes open-woodland and open-forest of tuart, and in the south, an understorey of banksia species, with a groundstorey containing buttercup, pixie mops and couch honeypot. In the eastern section there is little understorey, apart from a patch which includes parrot bush and prickly moses. In the northern section, the understorey includes bull banksia, *Logania vaginalis* and stinkwood.

Reserve A21406 and adjacent land support attractive open-forest and woodland of marri, tuart and jarrah, often with an understorey of bull banksia. The ground storey includes blackboy, stinkwood and zamia.

As well as its conservation value, the area is regularly used for teaching and is popular for bushwalking and bird-watching.

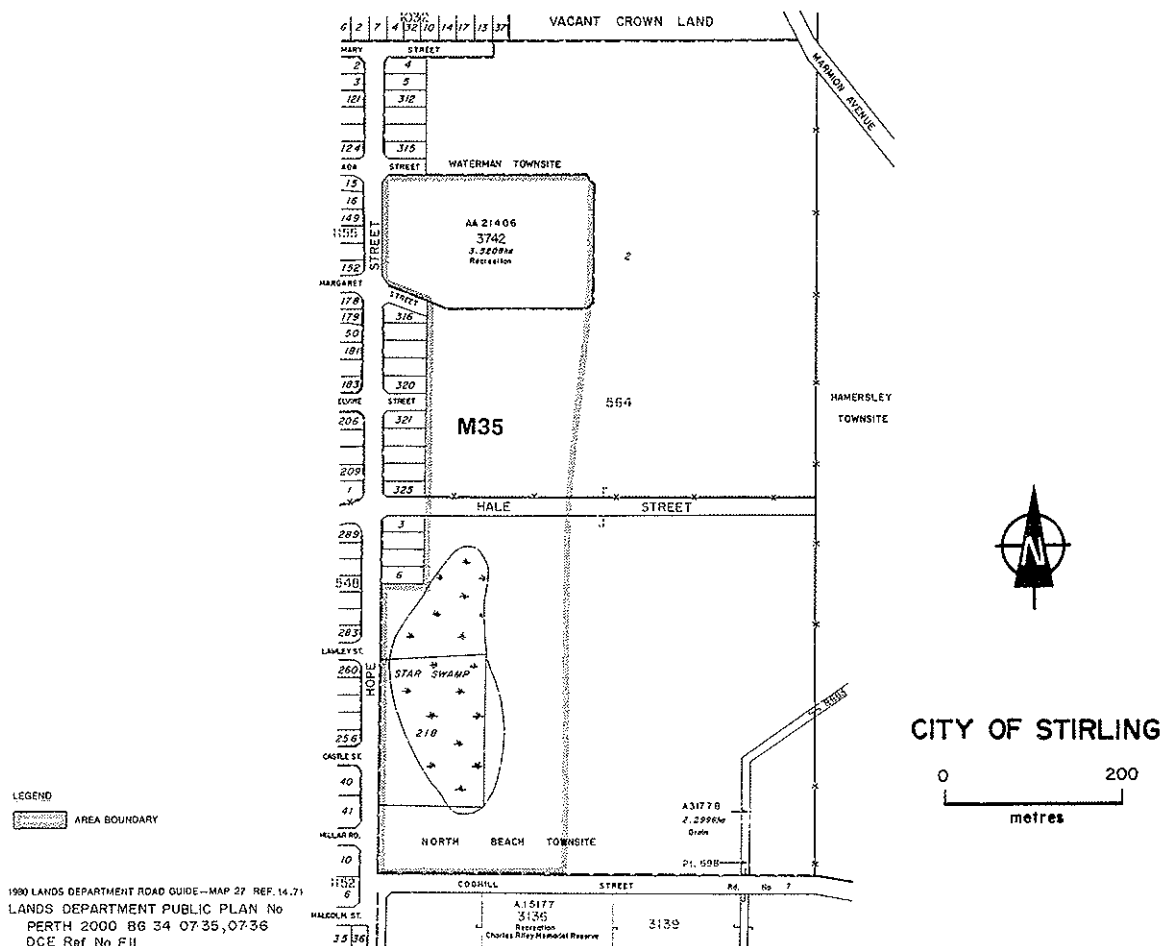


Figure 104

Recommendations:

- M35.1 That the purpose of Reserve A21406 be amended to Conservation of Flora and Fauna and Recreation.
- M35.2 That the Government negotiate with the City of Stirling and the State Housing Commission with a view to acquiring the freehold land for inclusion in Reserve A21406.
- M35.3 That the City of Stirling manage the area under a published management plan to be approved by the Minister for Lands.

M36 RESERVES NEAR KARRINYUP

The recommended area comprises Reserves C32559, for Parkland, C27471, C33679 and part of Reserve C33680, for Recreation, all vested in the City of Stirling; lots 5 and 7, and part of lot 6 (Location 1153), being freehold land owned by the MRPA (Figure 105). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Private and MWA groundwater extraction may affect water levels. The area may be affected by proposed sewerage works and a future road link between Marmion Avenue and the West Coast Highway.

The section south of Karrinyup Road provides one of the few examples in the metropolitan area of a belt of vegetation extending from the sea to tuart woodland. It contains yellow sands, stabilised by vegetation. The first ridge of dunes east of West Coast Highway carries open-heath, including *Pelargonium capitatum*, swordgrass and *Acanthocarpus preissii*. To the north and east there is an area of closed-heath dominated by *Acacia rostellifera* and *Olearia axillaris* with patches of yellow-tail flower and *Scaevola nitida*, and around the hill tops there are species such as *Pelargonium capitatum*, *Melaleuca acerosa* and quandong. Just east of Elliott Road the vegetation changes to open-woodland of tuart, with an understorey dominated by *Pelargonium capitatum*, *Acacia lasiocarpa* and *Scaevola holosericea*. The understorey is richest around the hill tops, and includes snakebush, yellow leschenaultia and one-sided bottlebrush. There is some banksia, sheoak and stunted jarrah in the most easterly section.

In Reserve C33680, on the northern slopes of the dunes near Karrinyup Road, there are patches of closed-scrub of *Casuarina lehmanniana*, and the distinctive shrub *Gyrostemon ramulosus*. Both these species are rare in System 6. Another unusual occurrence is Rottneest cypress, which was once common on the coast near Perth but has now largely disappeared. Introduced grasses, such as *Lagurus ovatus*, are present in the open-heath and open-woodland vegetation. Much of the area has been badly affected by fire. It contains a well-established network of trail-bike tracks, especially in the eastern section.

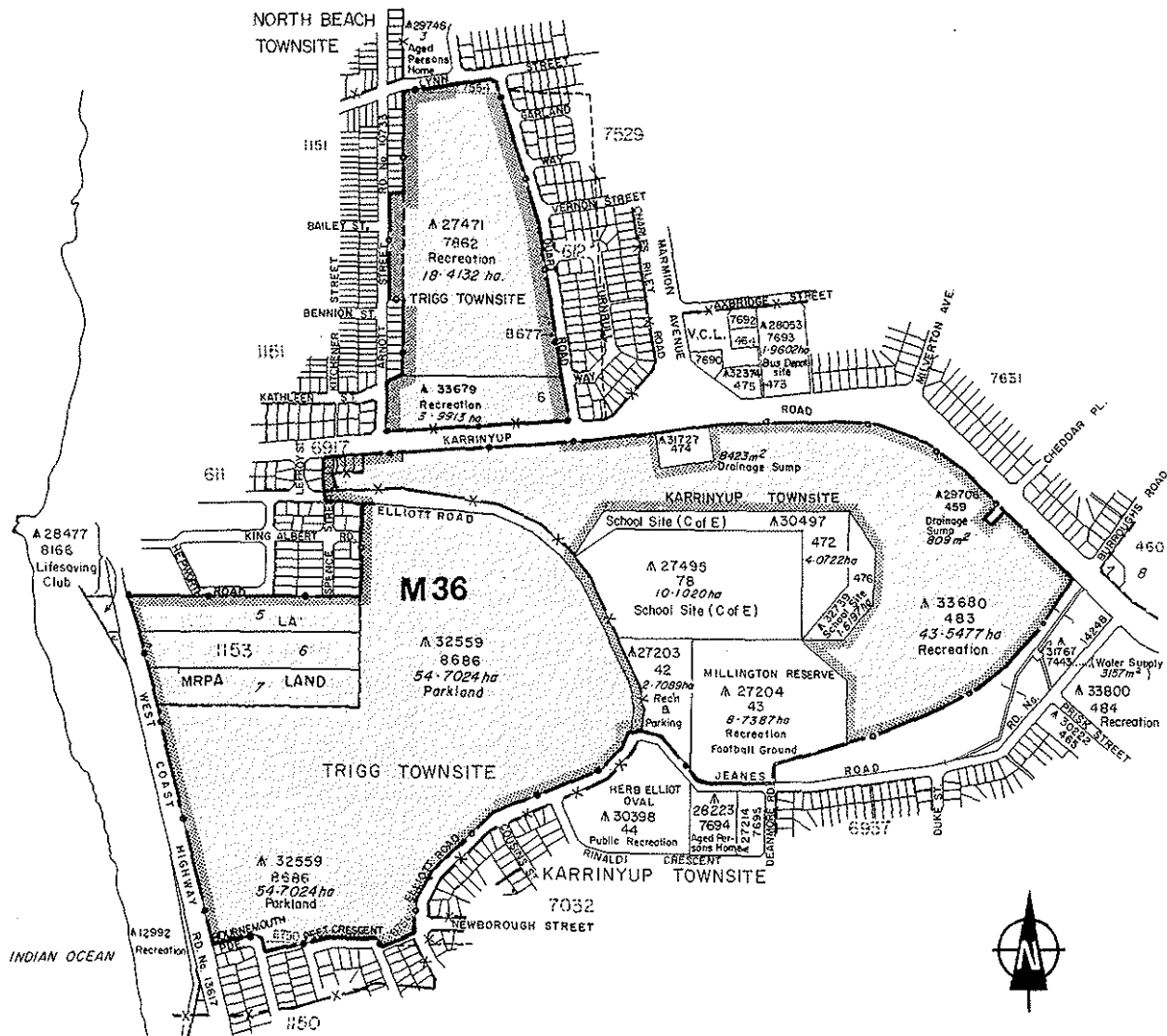
Despite its proximity, the area north of Karrinyup Road is very different. Reserves C27471 and C33679 are fairly flat and contain brown sand, with limestone at or near the surface. The vegetation is mainly open-woodland of tuart and woodland of marri, with some low open-woodland of banksia species in Karrinyup Road. Bull banksia and stunted jarrah occur in places, and the understorey includes scrub sheoak, prickly moses and honeybush. Where limestone is at the surface on a low rise near Karrinyup Road the associated vegetation is closed-heath, including cockies' tongues, chenille honeymyrtle and *Acacia truncata*.

Except for some dying tuarts, the vegetation in the area is in good condition, the understorey dense, and marri is regenerating prolifically. This is probably due to the network of fire breaks and fencing of part of the perimeter. The area is regularly used by schools for educational purposes.

The MRPA and the City of Stirling are working on a programme of dune preservation. The section south of Karrinyup Road has been fenced restricting public access until dune rehabilitation can be assessed.

Recommendations:

- M36.1 That the purpose of Reserves C27471, C33679 and C33680 be amended to Parkland.
- M36.2 That Reserves C27471 and C33679 be vested in the City of Stirling.
- M36.3 That the Stirling City Council prepare a management plan for the area in consultation with the Department of Fisheries and Wildlife and the Department of Conservation and Environment, giving consideration to the effect of the proposed sewerage works and road link on the conservation value of the Reserve.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 35 REF. 15.65
 LANDS DEPARTMENT PUBLIC PLAN No
 PERTH 2000 BG 34 07-33, 07-34,
 07-32, 08-32, 08-33
 D.C.E. Ref No. F15

LEGEND
 [Hatched Box] AREA BOUNDARY
 [Circle with Dotted Area] M.R.S. PARKS AND RECREATION RESERVE

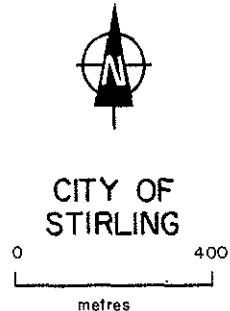


Figure 105

M37 CARINE SWAMPS

The recommended area is situated a few kilometres north of Karrynup and includes Big Carine Swamp and Little Carine Swamp, and comprises lot 10 (Location 565), lot 10 (Location K), lot 10 (Location 568), Locations 185, 189, 566 and 567, freehold land owned by the MRPA. The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme and is being developed by the MRPA and the City of Stirling as part of the Carine Lake Region Open Space Reserve (Figure 106).

Private and MWA groundwater extraction may affect water levels in the area. There are MWA works and additional works may be required.

Big Carine Swamp comprises two main bodies of water — a larger northern one, consisting partly of open water and partly of sedgeland of bulrush (*Typha orientalis*), and a smaller southern body of open water. Between the two is an extensive area of low closed-forest of swamp paperbark, which is in good condition. There is another area of paperbark around the north-eastern section of the lake, and behind this there is an open-forest of tuart. There are remnants of vegetation in other places: some marri and tuart to the south and south-east of the lake, and clumps of flooded gum, mainly saplings, on the lake's western shore.

Big Carine Swamp supports a good variety of water-birds, including mountain duck, grey teal and great crested grebe, which are rare in the metropolitan area. It provides a summer refuge because it is semi-permanent, and the dense growth of paperbarks affords protection and nesting sites.

Little Carine Swamp is a small seasonal swamp containing bulrushes with a few remnant clumps of native vegetation nearby.

The management programme involves developing both swamps into ornamental lakes with compensating basins, as well as providing areas for parkland, preservation of fauna, and recreation activities.

Recommendation:

M37.1 That the management plan prepared by the Metropolitan Region Planning Authority and the Stirling City Council for Carine Swamps is endorsed.

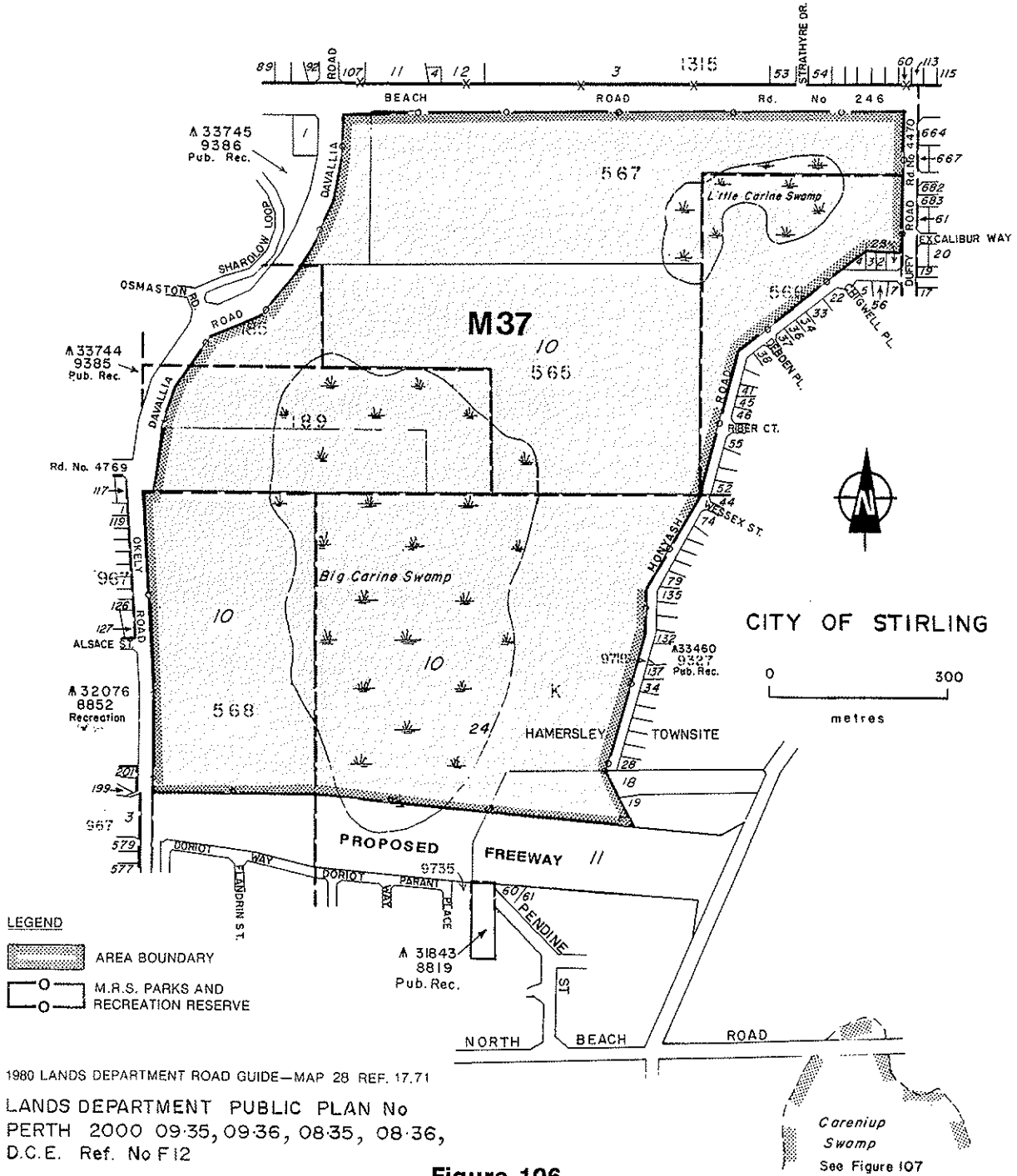


Figure 106

M38 CARENIUP SWAMP, GWELUP

The recommended area is situated east of North Beach Road in the suburb of Gwelup and comprises parts of lots 1 and 2 (adjacent to Balcatta Rd.), 1 to 7 (North Beach Road), 1 and 2 on the eastern side of Carenilup Swamp, and parts of lots 9 to 11, 22, 26, 27, 29, 32 to 37, and 50 (Location 92), all privately owned freehold land (Figure 107).

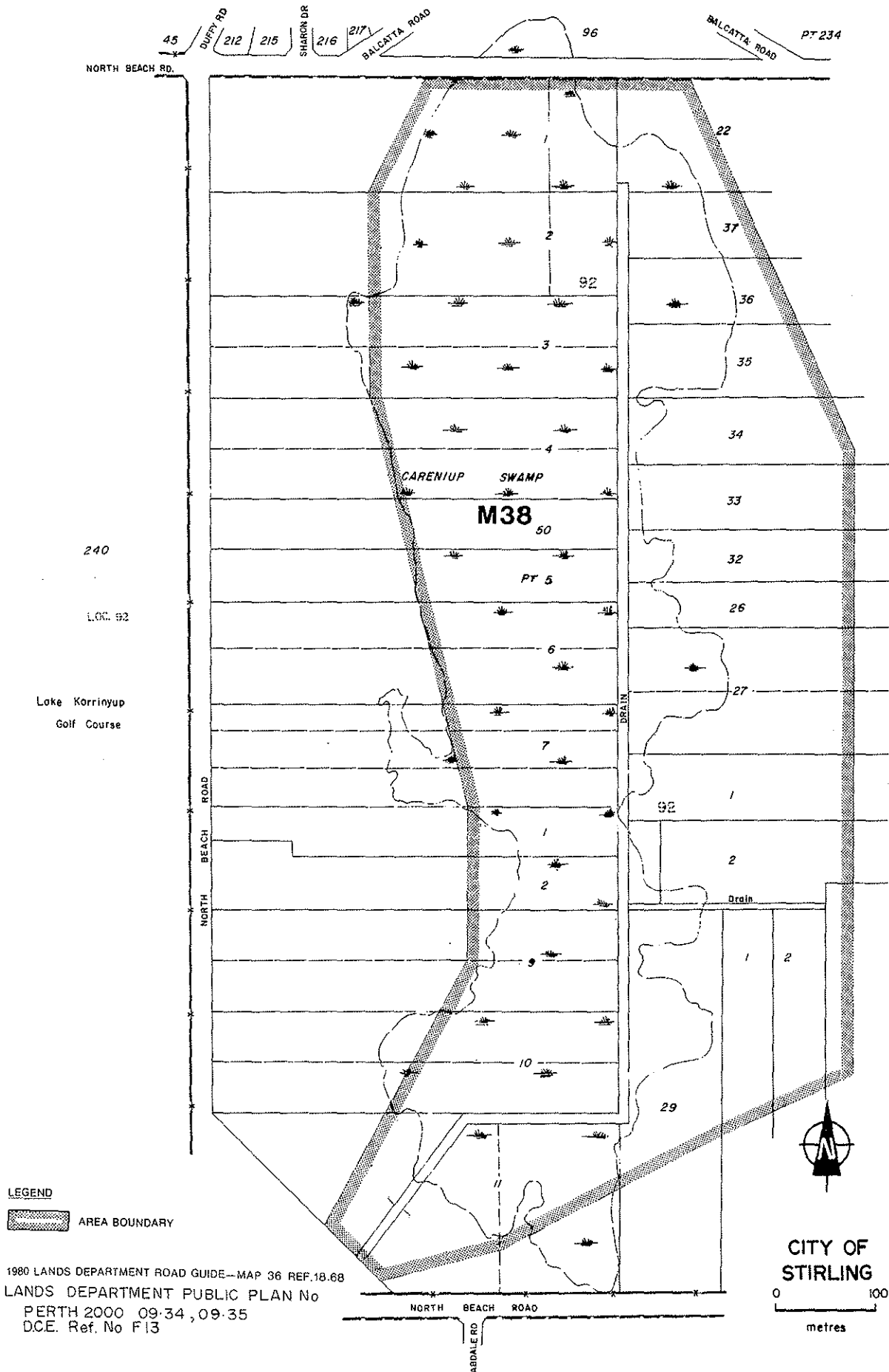


Figure 107

In July 1982, the Environmental Protection Authority endorsed the System 6 Study Recommendations M38.1 and M38.2 with only minor alterations to M38.2. The proposed area for reservation is also slightly altered.

The Town Planning Department is conducting a study of the swamp and its surrounds, and the Metropolitan Region Scheme zoning of the area (currently Urban Deferred) is being reviewed by the MRPA.

The area is within the Gwelup Water Pollution Control Area. Private and MWA groundwater extraction may affect water levels, and groundwater may become polluted by local septic systems. The MWA uses the area as a drainage compensating basin. Proposed controlled access roads may affect the area. There is an existing coal mining lease in the area.

Careniup Swamp is semi-permanent; its conservation value is now limited chiefly to the northern half of the swamp which includes a grove of paperbark trees, an area of open water and adjoining reed beds, and some higher land to the north-east vegetated with flooded gums.

The area has a residual conservation value largely because it provides a summer refuge and feeding ground for water-birds. It forms part of a system of wetlands which includes Lakes Gwelup and Karrinyup and Carine Swamps. The swamp could be highlighted as a landscape feature when the Mitchell Freeway is extended along the east of the area.

Important management considerations for the area include: ensuring that development adjoining the area is not detrimental to the wetland; maintaining water-bird habitats; making a landscape feature of the land adjacent to the northern extension of the Mitchell Freeway; the area's potential for minerals; and the area's location within the Gwelup Public Water Supply Area.

Recommendations:

M38.1 That the Metropolitan Region Planning Authority consider "reserving" the wetland portion of Careniup Swamp, together with the surrounding land, for Parks and Recreation under the Metropolitan Region Scheme.

M38.2 That the Metropolitan Region Planning Authority, in consultation with local land owners, define management objectives for the area and seek ways and means of achieving those objectives, in respect of land in private ownership.

M39 LAKE GWELUP

The recommended area is situated west of North Beach Road, in the suburb of Karrinyup, and comprises Reserves C31538 and C33116, for Public Recreation, both vested in the City of Stirling; C36291, for Parks and Recreation, vested in the MRPA; part of Reserve C33142, for Public Recreation, vested in the City of Stirling; lot 1 (adjacent to Wanstead Street), lot 3 (adjacent to Huntriss Road), lots 1 to 6, 9, 10, 12, 13, 15, 32, 33, 50, 53, 62, 77, 80 to 82, 117, 121, 124, 150, 523 and 542 (Perthshire Location At), being freehold land, mostly owned by the MRPA (Figure 108). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The Stirling City Council has prepared a development plan for the area for submission to the MRPA, including a proposal for extension of the area. The Town Planning Department is conducting a study of Lake Gwelup.

Private and MWA groundwater extraction may affect water levels, and groundwater may be affected by pollution from local septic systems. There are SEC lines in the area. The area may also be affected by proposed sewerage and drainage works.

Except for a few flooded gums and swamp paperbarks, most of the land bordering the lake to the west and south has been cleared. However, land to the north and east of the lake has a good cover of natural vegetation, which includes tuart, a few jarrah, marri and banksia. Much of the vegetation around the lake is regenerating, and it is important that this process should continue.

The lake is deep and permanent, supports a good variety of water-birds and is important as a drought refuge. Some species occur in large numbers, and grey teal and black duck are known to breed on the lake.

At present the area is used for horse riding and walking. Local residents are concerned about the use of trail bikes in the area.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; preservation of the landscape; maintaining the habitat for water-birds; except in Reserves C3158 and C33116, allowing only those recreation activities which are compatible with the conservation of flora and fauna; and the area's location within the Gwelup Public Water Supply Area.

Recommendation:

M39.1 That the Metropolitan Region Planning Authority and the Stirling City Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

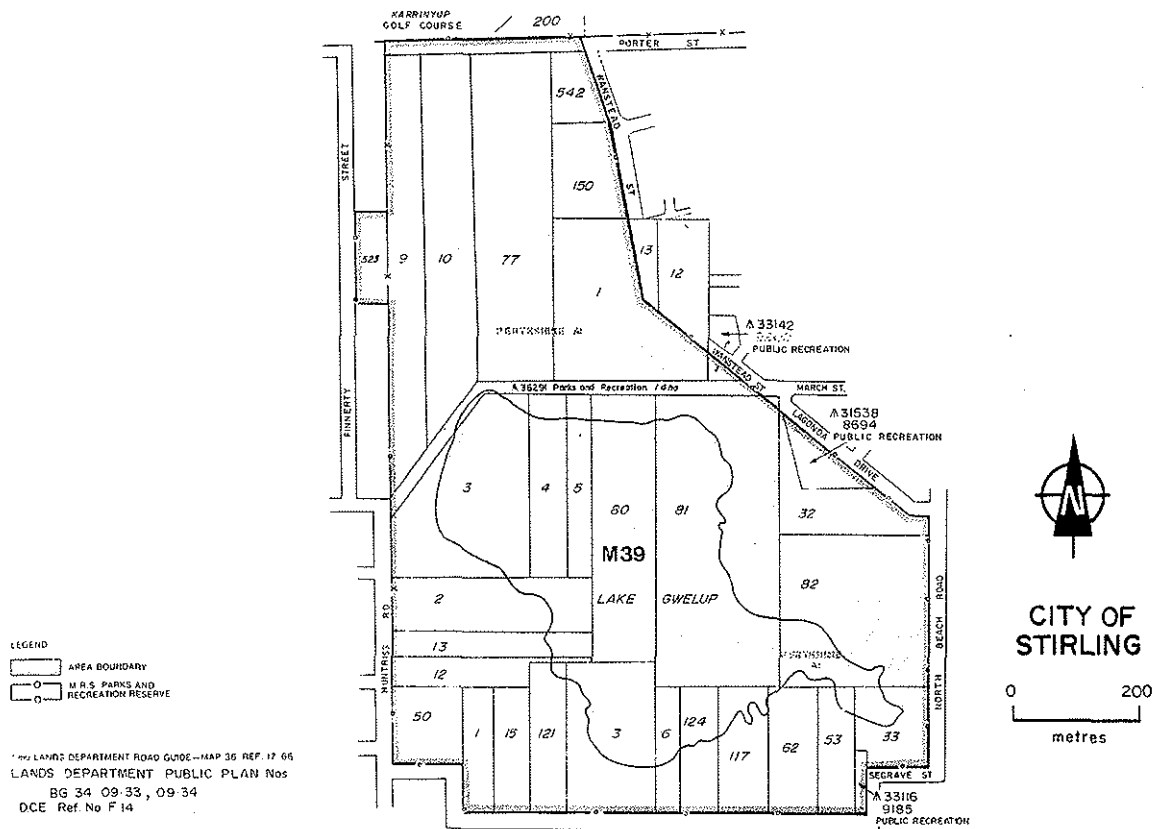


Figure 108

M40 DIANELLA OPEN SPACE

The recommended area comprises Reserve C34538 for Recreation, vested in the City of Stirling; lots 32, 86, 87 and part of lot 88 (Location V), lots 138 to 140, 143, 146 to 149, 151 and part of lots 85, 135, 136 (Location U), Locations 4812 to 4816, and the Sturt Street, Station Street, Holdsworth Street, Union Street and Fleming Street subdivisions, all freehold land owned by the MRPA but leased to the City of Stirling; and lots 70, 84 (Location U) and Location 7729, privately owned freehold land (Figure 109). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Private groundwater extraction may affect the vegetation. There are sewerage and drainage works, and SEC lines in the area. Additional sewerage and drainage works are proposed.

The MRPA and Stirling City Council have prepared a management programme for the area, and an artificial lake and island have been constructed in the south-western section.

The vegetation in that part of the area which is uncleared is in good condition. There is low open-forest and low woodland of banksia, Christmas tree and pricklybark, with a varied understorey including purple flag, blackboy and scrub sheoak. In the south-eastern section there is woodland of marri with an understorey dominated by blackboy.

Some of the sheoaks and banksias in the more elevated sections have died recently, probably because the water table has been lowered by drainage systems in Dianella and also because of recent low rainfall. However, the vegetation is mostly in good condition and will probably adjust to the change in the water table.

Recommendation:

M40.1 That the management plan prepared for the area by the Metropolitan Region Planning Authority and the Stirling City Council is endorsed.

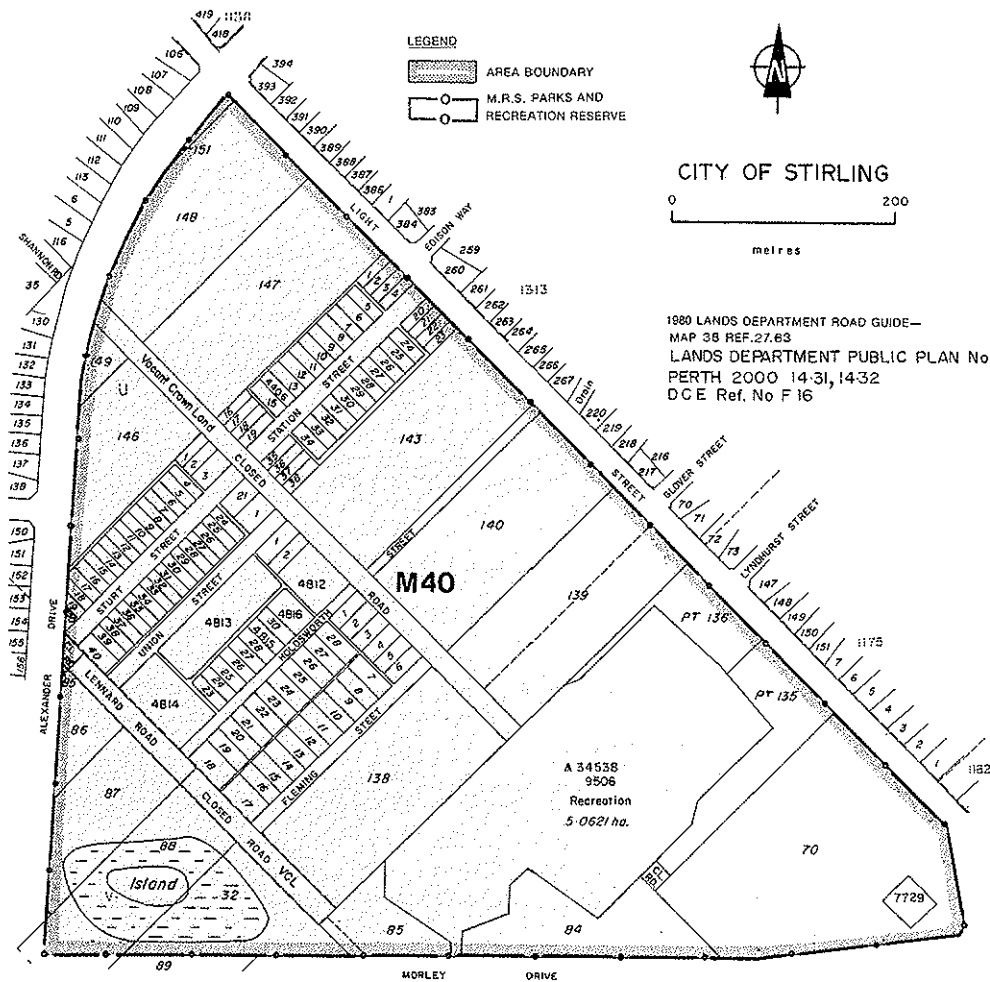


Figure 109

M41 BENNETT BROOK

The recommended area comprises part of Reserve C25363, for Mental Hospital Site, not vested; part of lots 278, 279, 281, 626 to 628 (Location I), 10, 14, 47, 73, 74 (Location K), lots 30, 31, 40, 41 (Location KI), lots 107, 99, 133, 100 to 102 (Location L), 9 to 15 (Location M), part of Locations MI, OI, P and 2988, privately owned freehold land (Figure 110).

Private and MWA groundwater extraction may affect water levels, and groundwater may be affected by organic pollution from nearby unsewered residences. There are sewerage works and SEC lines in the area and additional sewerage works are planned. Additional roads and a subdivision of land between Patricia Street and Benara Road have been proposed. The area north of Location 2988, to Benara Road, may have potential for clay and sand, and there is a mining claim in Location 2988, which is privately owned. It may be necessary to relocate the water course to cater for further clay extraction. The MRD states that Bennett Brook will need to be bridged if Morley Drive is extended.

The MRPA has indicated that the sections north of Reserve C25363 and south of lot 101 might be suitable for "reservation" for Parks and Recreation under the Metropolitan Region Scheme, and that the area should be developed and managed as a linear park. The area has been included in the MRPA's Eastern Corridor Study because of its importance in providing a link between Whiteman Park and the Swan River.

Upstream from Benara Road, the brook and tributaries are seasonal streams, partly disrupted by agricultural activities. However, they retain fringing vegetation of paperbark and flooded gum for a width of approximately 100 metres.

The area between Benara Road and Harper Streets has been modified by grazing, excavation for clay, and damming of the stream, and contains permanent pools which are fringed by paperbark and flooded gum.

South of Harper Street the water course spreads out to a swamp approximately 800 metres wide, containing a diversity of vegetation, including swamp paperbark and sedge, which provide a

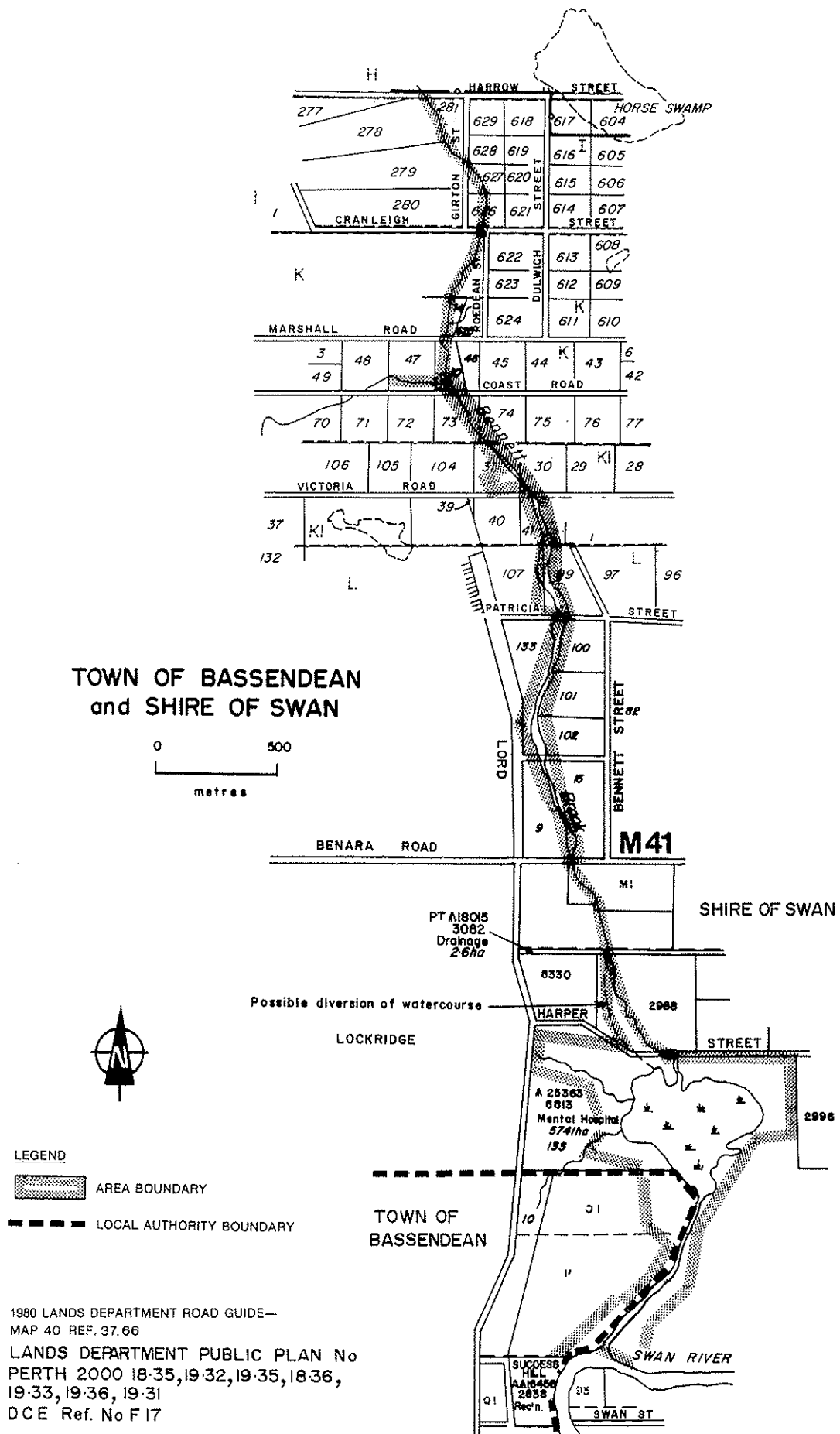


Figure 110

habitat for bush birds as well as a feeding and breeding ground for water-birds. The swamp contains several species of swamp-breeding frogs whose habitat is diminishing elsewhere due to urban development. The water course downstream from the swamp to the Swan River is narrow with fringing vegetation of paperbark and flooded gum.

The conservation and recreation value of the area is high, given its proximity to the rapidly expanding and densely populated suburb of Lockridge. Reservation of the area would help protect and improve the quality of the water from the Bennett Brook Catchment entering the Swan River.

Together with the Swan River (M19), Whiteman Park (M13), and the Helena River (M33), the area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation value and its proximity to Perth's residential areas. Because the area's land tenure is divided between Government and private ownership and because part of the privately owned land could be used for clay extraction, coordinated management is required to enhance the area's conservation and recreation values. Important management considerations include: maintaining wetland habitats; only allowing passive recreation activities which are compatible with the conservation of flora and fauna; providing pathways specifically for walking, bird-watching and educational purposes; restricting vehicle access; and the area's potential for clay and sand.

Recommendations:

M41.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M41.2 That the Metropolitan Region Planning Authority's proposal to "reserve" Bennett Brook and adjoining significant environmental areas, including its flood plain, as a continuous link from Whiteman Park to the Swan River is endorsed.

M42 JACKADDER LAKE, WOODLANDS

The recommended area is situated west of Liege Street in the suburb of Woodlands and comprises part of Reserve C27766, for Recreation, vested in the City of Stirling; and part of lots 404 and 406 (Perthshire Location At), being freehold land owned in fee simple by the City of Stirling (Figure 111).

The Stirling City Council has prepared a management plan for the area.

Private groundwater extraction may affect water levels. There are drainage works in the area.

Jackadder Lake is now permanent as water levels are maintained during summer by water from the Osborne Drain. The lake's surrounds are cleared and grassed with couch. Only a few remnant flooded gums remain but there are numbers of planted weeping willows. For its size, the lake supports large numbers of black swan and black duck, and the relatively uncommon white-eyed duck has been recorded at the lake.

Recommendation:

M42.1 That the Stirling City Council's management plan for the area is endorsed.

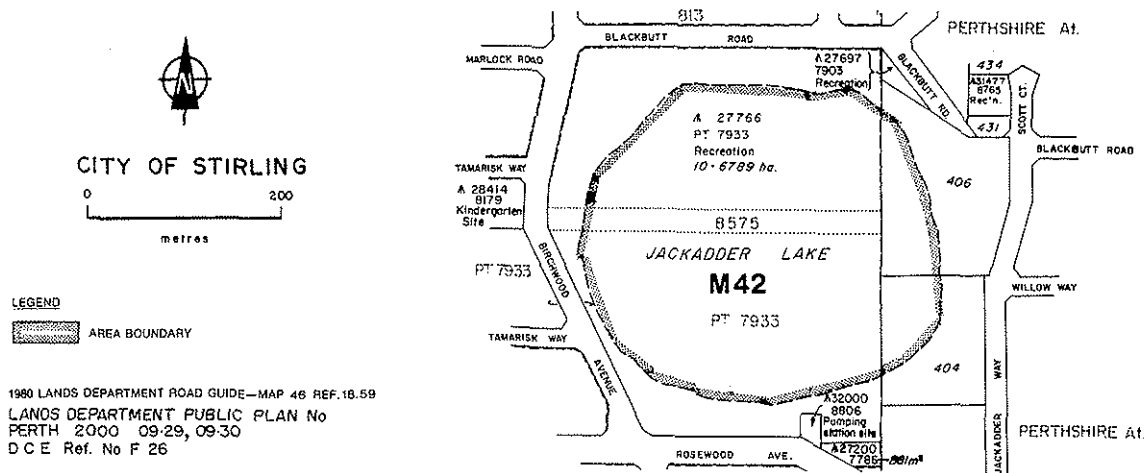


Figure 111

M43 HERDSMAN LAKE

The recommended area comprises Reserves C31906, for Parkland and Recreation, C32094, for Recreation, both not vested; part of Reserves C28763, for Recreation, vested in the City of Stirling, and C32812, for Drain, vested in the Metropolitan Water Authority; C28366, for Recreation, not vested; Special Lease 3116/7367; part of lots 1 to 6, 2, 9, 15, 50 (Perthshire Location Aq), part of lot 109 (Location 968), Herdsman Lake sub-lots 388, 393 to 400, 403, 405, part of sub-lots 389, 406 to 408, 411, all vacant Crown land; part of Herdsman Lake sub-lots 47 to 54, 80 to 86, 113, 115 to 119, 130, 131, 134 to 144, 153 to 155, 350, 367 to 374, part of lots 1 and 2 of sub-lot III, part of lot 3 of sub-lot 110, lot 9 of sub-lot 349, lot 9 of sub-lot 133, lot 4 of sub-lot 132, part of lots 1 to 4, 12 and all of Herdsman Lake sub-lots 368, 401, 402 and 404, freehold land, some of which is owned by the MRPA (Figure 112). The area has been "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The MRPA has developed a "Herdsman Lake Region Open Space Use and Development Plan" which applies the broad concepts outlined in the MRPA's original Concept Plan for the lake and its surrounds. The Use and Development Plan is designed to retain portions of the present Herdsman Lake habitat while also providing several areas for recreation. Part of the south-western section has been dredged for housing development and is being rehabilitated into a water-fowl habitat: the Department of Fisheries and Wildlife has made a proposal for the creation of a "Nature Studies Centre" in Reserve C31906 to be funded by the World Wildlife Fund (Australia).

The lake functions as an important drainage compensating basin and will continue to rely on drains for a significant part of its water input. However, increased levels of nitrogen, phosphorus, heavy metals, oil and grease have been detected near some drains. Private groundwater extraction may affect water levels. The area is affected by sewerage and drainage works and additional works may be constructed in the future. The area is also affected by several mineral claims for diatomaceous earth and peat, and sand is covered by quarrying licences issued under the local Government Act. The EPA has approved limited exploration of two claim areas for the dredging of diatomaceous earth and sand. Any further development is subject to submission of an acceptable Environmental Review and Management Programme. The EPA will not recommend commercial dredging unless the rehabilitation process is compatible with the MRPA concept plan. The area is also subject to chemical control of Argentine ants.

Most of the area is vegetated with sedgeland of bulrush and although much of the surrounding vegetation has been cleared there remain some fairly extensive areas of woodland of flooded gum, particularly in the west, where bracken forms an understorey. Swamp paperbark occurs in clumps in many places, and in the north forms a low woodland. Swishbush and wattle also occur around the northern part of the lake.

Herdsman Lake supports many water-fowl as well as bush birds and birds of prey. About a hundred species have been recorded, of which about one-third breed there. The lake bed is rich in peat and is highly productive in biological terms. It offers different types of habitat from the open water and parklands of nearby Lake Monger and Jackadder Lake. Herdsman Lake is of outstanding importance both as a summer refuge for water-birds and as a winter breeding area. The lake is also of great recreational, educational and scientific interest, especially as it is within the urban area and is easily accessible.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4), because of its value for conservation and recreation and its proximity to Perth residential areas. The area is covered by a wide range of land tenures. Parts of the area do not have conservation or recreation as primary management objectives, and because the area occupies the lower portion of its basin, much of the surrounding land use is incompatible with conservation. For these reasons the area requires a coordinated management structure. Important management considerations include: replanting and encouraging the growth of local indigenous flora; and the continual assessment of the progress of the ornamental lake developed as part of the Floreat Waters subdivision, so that experience gained from this development can be used in evaluating and implementing any future dredging proposals for Herdsman Lake.

Recommendations:

- M43.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M43.2 That the Metropolitan Region Planning Authority's concept plan for the area is endorsed.

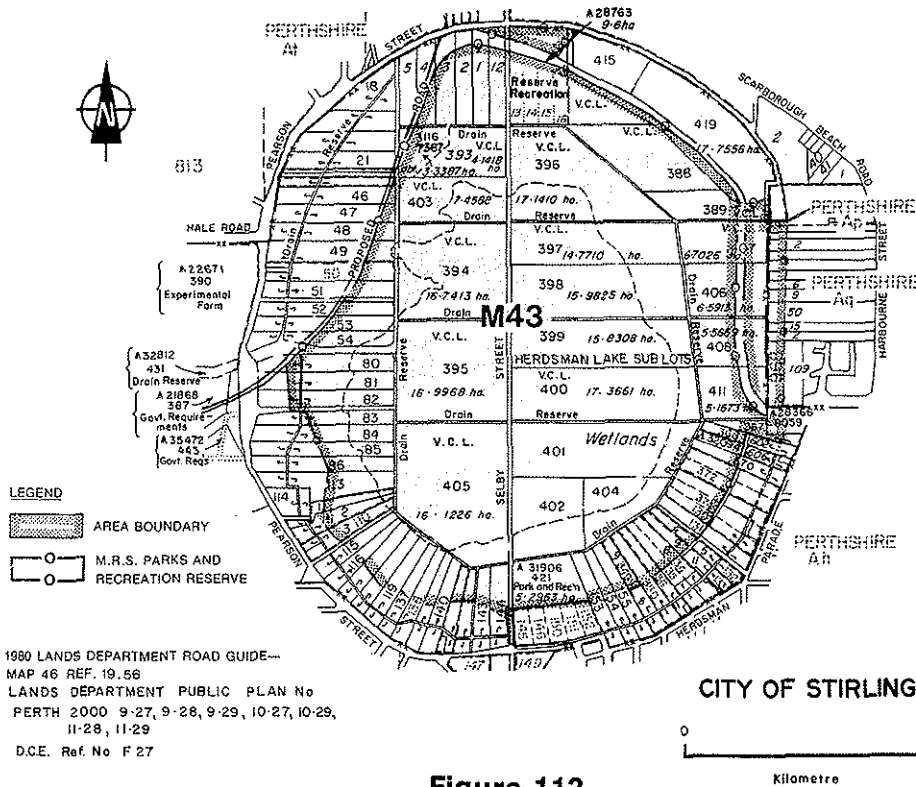


Figure 112

M44 SWAN RIVER BACKWATER, SOUTH GUILDFORD

The recommended area consists of a water area under the control of the Swan River Management Authority and a land area comprising lots 3, 55, 58 (Location 21) and part of Locations 22 and 23, freehold land owned by the MRPA; and River View Avenue lots 47 to 52 and 54 (Location 22), privately owned freehold land (Figure 113). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area contains sewerage and drainage works and a pumping station.

The area is a saline backwater with open pools of water, and vegetation which includes *Suaeda australis*, *Atriplex hartala* and *Apium prostratum*. The backwater is fringed with scattered trees of flooded gum and salt water paperbark, and the native undergrowth has been replaced by introduced species including *Centella cordifolia*, *Cynodon dactylon* and *Paspalum distichum*.

The area provides a good refuge for many species of birds including swamphen, reed warbler and sacred kingfishers.

The area contributes to open space of regional significance extending along the Swan and Helena Rivers (see Figure 1, Chapter 4). The Metropolitan Region Scheme does not include the backwater area in the Parks and Recreation "reserve", and to ensure the protection of the whole of the recommended area, the management structure requires coordination. Important management considerations include: encouraging the growth and regeneration of local indigenous flora; maintaining the water-bird habitats; only allowing recreation activities which are compatible with the conservation of flora and fauna; and restricting vehicle access.

Recommendations:

- M44.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M44.2 That the Metropolitan Region Planning Authority consider "reserving" those portions not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme.
- M44.3 That the Metropolitan Region Planning Authority and the Swan River Management Authority prepare a management plan for the area.

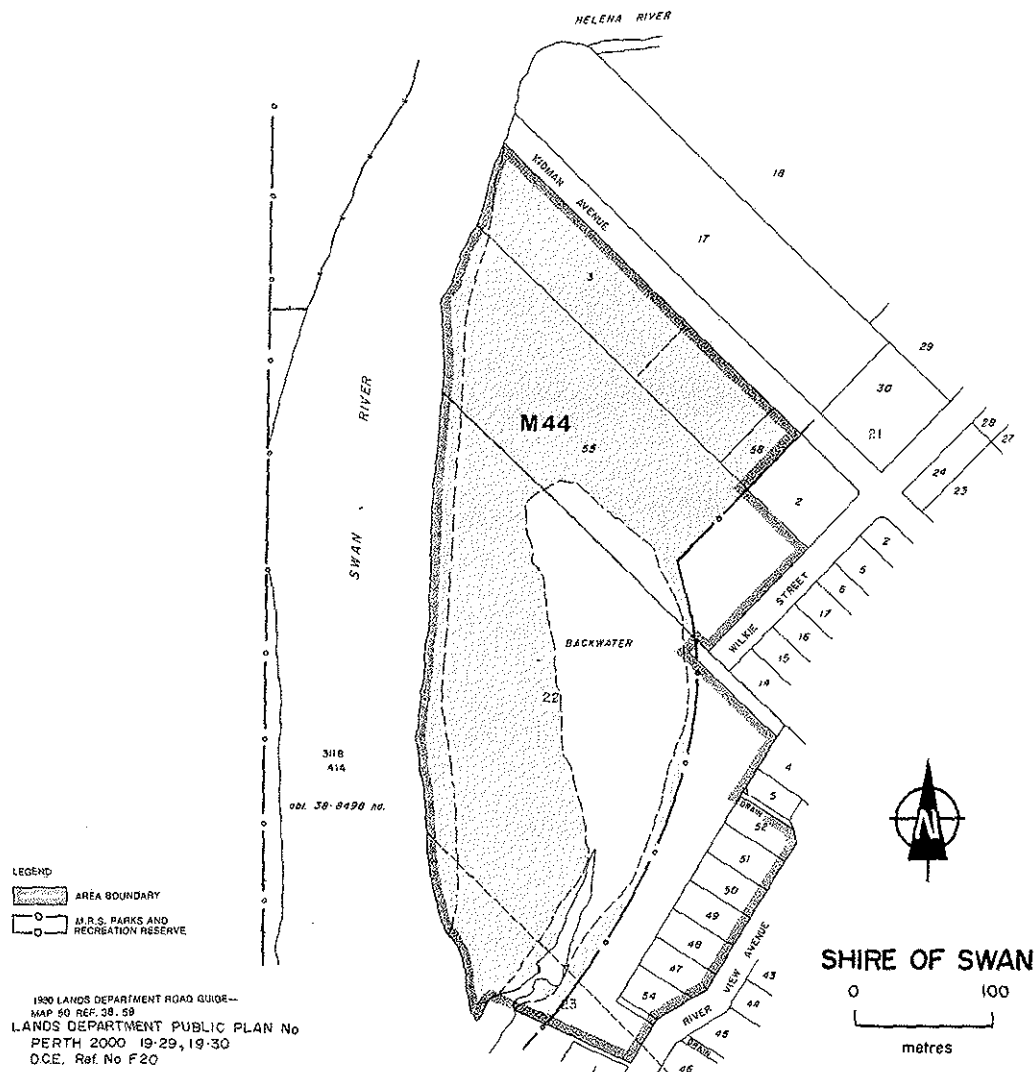


Figure 113

M45 HAZELMERE LAKES

The recommended area is situated a few kilometres south-east of Guildford and comprises parts of lots 1, 120 to 127, 133 to 135, 363 and 364 (Helena Location 20a), privately owned freehold land (Figure 114).

The area is subject to the Metropolitan Region Planning Authority's Eastern Corridor Study. Private groundwater extraction may affect water levels and there may be organic pollution due to drainage from septic tanks. The area may be affected by proposed sewerage and drainage works.

Stock grazing has eliminated almost all the fringing vegetation from the northern lake. However, the southern lake is almost completely encircled by swamp paperbark, with some flooded gum as well as Moonah paperbark at the southern end of the lake, where the fringing vegetation merges with the remnants of the surrounding woodland marri, banksia, sheoak and Christmas tree.

The lakes support a good variety of water-birds, waders as well as water-fowl, including the red-necked avocet, banded stilt and black-winged stilt, which are uncommon in the eastern part of the metropolitan area. The lakes retain water for most of the year, and so serve to some extent as summer refuges for water-birds. Water-birds on the northern lake can easily be viewed from the surrounding roads.

Stock have access to the water in both lakes, but their exclusion would assist regeneration of the vegetation and reduce degradation of the lakes' banks. The lakes cannot be used for passive recreation pedestrian access is provided across freehold land from nearby roads.

Recommendation:

M45.1 That ways and means of protecting the conservation and recreation values of the Hazelmere Lakes be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

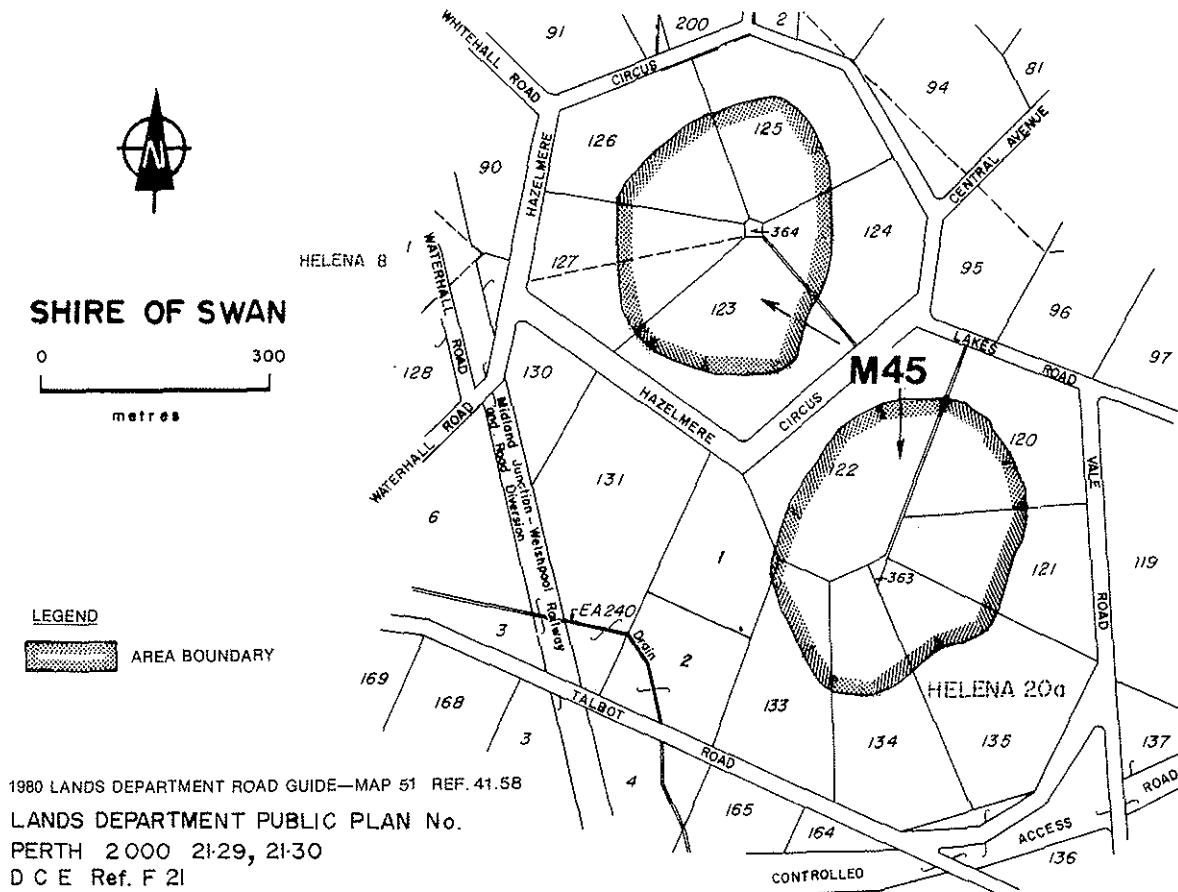


Figure 114

M46 SWANBOURNE BEACH AND RIFLE RANGE

The recommended area is situated in Swanbourne and comprises Reserves A23729 and A27250, for Recreation, both vested in the City of Nedlands; the eastern portion of Location 1911, owned in freehold the City of Perth, subject to the City of Perth Endowment Lands Act; and a portion of Location 313, most of this being covered by lease 37L/449, held by the Commonwealth, with a smaller part comprising vacant Crown land (Figure 115). The northern tip of Location 1911 is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The City of Perth section in the north supports, in equal abundance, closed-heath of wattle and open-heath dominated by melaleuca. The tops of the dunes are rich in species, including Geraldton wax, one-sided bottlebrush, snakebrush, tar bush and rats' tails. There are some patches of closed-scrub of peppermint in the northern section, and woodland of tuart and banksia with an understorey of prickly moses, scrub sheoak, boobialla and zamia in the eastern section.

The Indian Ocean foreshore is relatively undisturbed in the northern section and contains mainly acacia species. The land, however, once supported a woodland of tuart, as indicated by dead and dying trees.

There is a wide variety of birds, including the variegated and white-winged wren, white and yellow-plumed honeyeater and the white-backed swallow. The area is of great significance as a corridor for the movement of birds along the coast and thence inland through reserves such as Bold Park (M47).

Snakes in the area include the colourful western black-striped snake, which is infrequent in System 6 and rare elsewhere, the half-ringed snake and the little whip snake. The turtle frog occurs in the older dunes. It has unusual habits, spending most of its time underground where it feeds on termites. Two species of jewel beetle and one species of ant lion, which eats other insects dependent on dune vegetation and which has practically disappeared from the metropolitan area, are also found in the area.

Despite its conservation value, the MRPA questions the justification for extending the boundaries of the Parks and Recreation area.

The foreshore is used intensively for recreation. Access and facilities, however, are inadequate. The vegetation of the foredunes to the south of the Rifle Range has been destroyed by off-road vehicles and by people seeking pedestrian access to the foreshore. This traffic seriously threatens the stability of the dune system and the damage would extend further northward if access were to be provided. It is important that well-defined paths should be provided along the foreshore and foredunes in order to conserve the biologically significant dune vegetation. The North Swanbourne foreshore is poorly provided with services, lacking toilets, surf-lifesaving facilities and access for emergency vehicles.

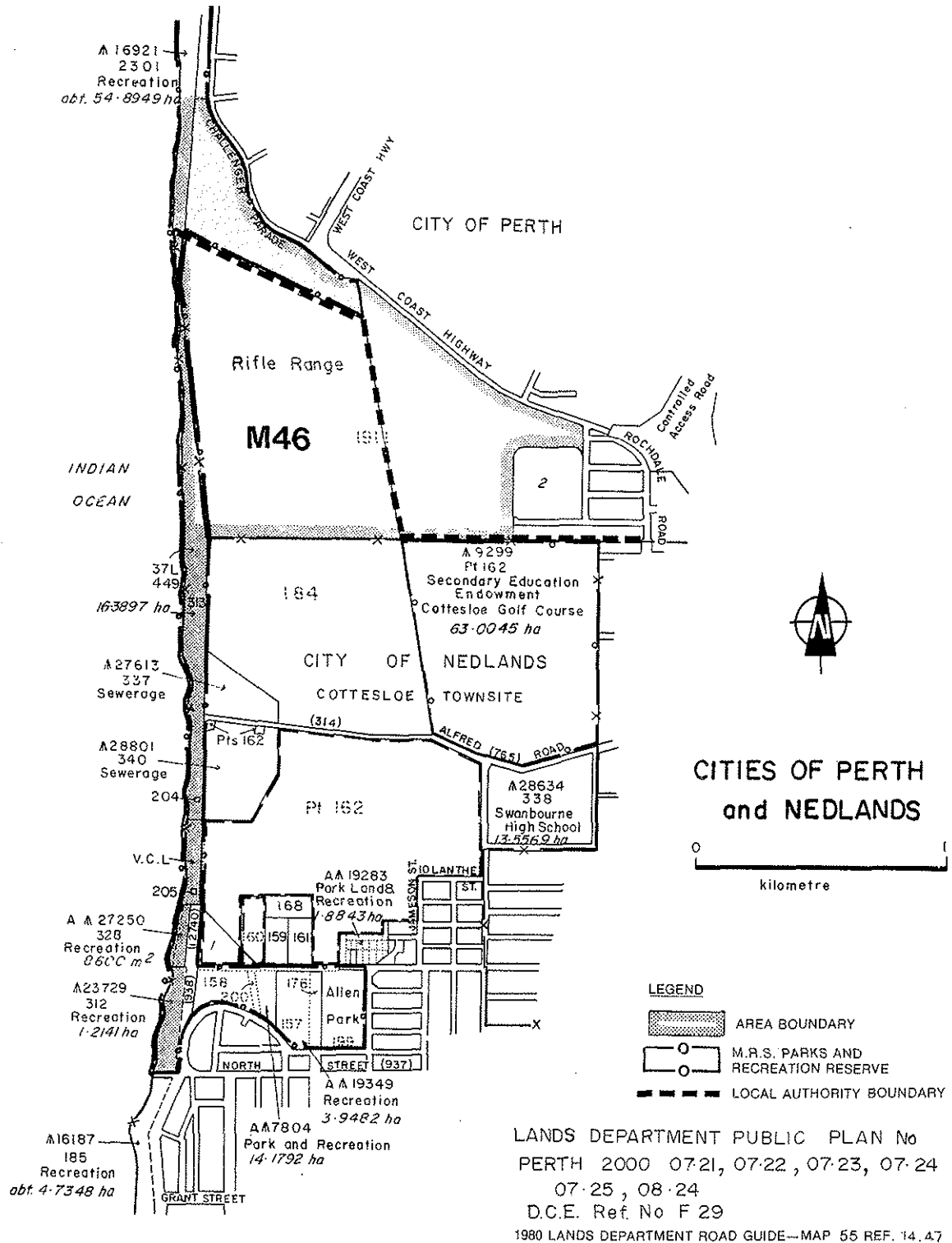


Figure 115

The recommended area contributes to open space of regional significance, in conjunction with Bold Park (M47), because of its high conservation and recreation value (see Figure 1, Chapter 4). Important management considerations for the area include: protecting and managing the dunes in a manner consistent with the conservation of flora and fauna; restoring and stabilising the damaged foredunes, south of the Rifle Range, by planting suitable dune plants, preferably locally indigenous species; prohibiting all vehicular and pedestrian access to the dunes, except along well-defined pathways; and providing sufficient facilities for the health, safety and comfort of the public using the foreshore.

Recommendations:

- M46.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M46.2 That the vacant Crown land be declared a Class C Reserve for Recreation and that the Reserve be vested in the City of Nedlands.
- M46.3 That the Nedlands City Council, in consultation with the Department of Conservation and Environment prepare a management plan for Reserves A23729 and A27250, and the vacant Crown land.
- M46.4 That the Perth City Council, in consultation with the Department of Fisheries and Wildlife prepare a management plan for Location 1911, giving particular attention to the foreshore portion.
- M46.5 That the Commonwealth of Australia retain as much uncleared land within lease 37L/449 as possible.

M47 BOLD PARK, CITY BEACH

The recommended area comprises part of Endowment Land, owned by the City of Perth, subject to the City of Perth Endowment Lands Act, including part of Locations 571, 585, 617, 1911, 2103 and part of Perthshire Locations Al and Ak (Figure 116). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Private groundwater extraction may affect vegetation in the area, which contains sewerage works and SEC lines, and may be affected by proposed road works. The proposed Western Suburbs Highway is routed to pass through the area.

The area of natural bushland and pine plantations to the south-west of Bold Park has been proposed by the Perth City Council for inclusion in the Park. The pine plantations include a quarry and a paddock which will be used for parking and picnic facilities. The Council is seeking an amendment to the Endowment Lands Act, to enable money gained from the sale of Endowment Land to be used to maintain and extend Bold Park, for which the Council has a development and management policy.

The area has deep, calcareous sands on the high sharp ridges, pale yellow and grey siliceous sands in the interdunal valleys, and dark-brown sands east of Reabold Hill.

Most of the section west and south-west of Reabold Hill is covered by woodland or open-woodland of tuart. The deeper moister soils of the valleys and depressions carry dense stands of banksia with a scattering of tuart and sheoak, and just north of the pine plantation, a few isolated jarrah. The understorey is dominated by blueboy and *Pelargonium capitatum*.

On the limestone ridges and the upper part of Reabold Hill the tree cover is sparse or absent. There are a few tuarts, but the vegetation is mainly a very rich closed-scrub or closed-heath, which includes snakebush, rats' tails and yellow lily, and where limestone is present, parrot bush, yellow leschenaultia and spider-net grevillea.

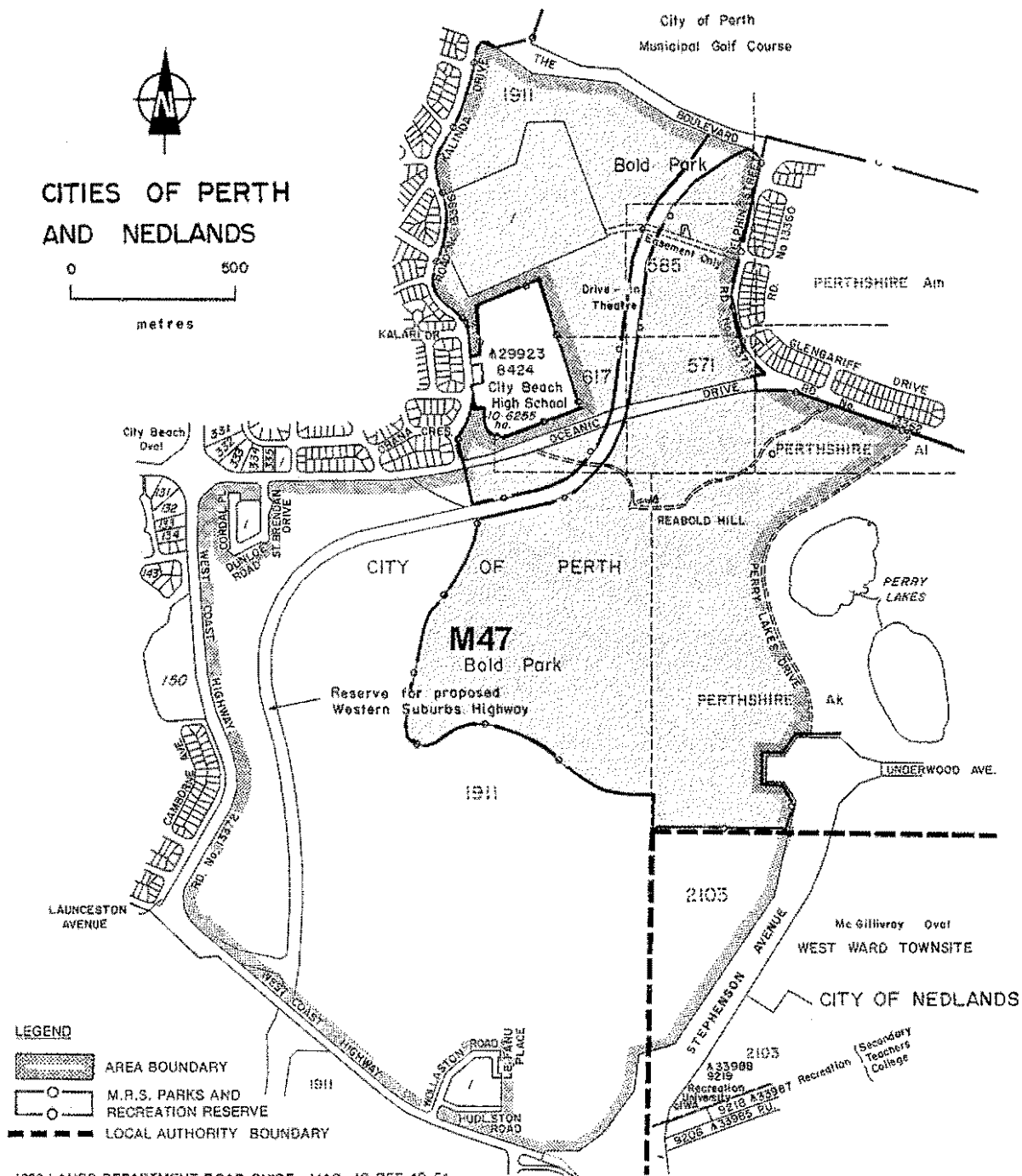
The vegetation on the northern slope of Reabold Hill, just below and east of the old quarry, is distinctive and comprises closed-scrub dominated by *Acacia xanthina* with a few emergent tuarts associated with such species as *Scaevola nitida* and chenille honeymyrtle.

The vegetation of the dry slopes and ridges comprises woodland or open-woodland of tuart, with an understorey of banksia, and a groundstorey which includes blueboy, one-sided bottlebrush and prickly moses. In the extreme south-west the vegetation includes *Olearia axillaris*, *Conostylis* and *Melaleuca acerosa*.

Along the western side of Perry Lakes Drive there is open-forest of tuart, jarrah, marri and flooded gum. Flooded gum is dominant around the small seasonal swamp near the corner of Perry Lakes Drive and Underwood Avenue, with some swamp banksia in the understorey. North of the swamp is a thicket of Fremantle mallee, which is uncommon in System 6 and rare in the metropolitan area.

Although much of the section of Bold Park between Oceanic Drive and The Boulevard is developed, there are still areas of bush. Especially significant is another smaller stand of Fremantle mallee north of Oceanic Drive, and the area south-west of the Skyline Drive-In, which supports low open-forest and low woodland of limestone marlock, which is uncommon in the metropolitan area. The grassed area around Perry Lakes contains a large number of native trees, including flooded gum, tuart and marri, with a second storey of wattle and banksia.

Bold Park supports close to a hundred varieties of birds, including a number of rare species such as the splendid wren (now lost from Kings Park) and the black-capped sittella. Species from Perry Lakes include black duck, grey teal and grebe. The reptiles in Bold Park include the bob-tailed lizard, sandhill dragon and bearded dragon, four species of skink and three of gecko. There is also a wide variety of insects, including the large colourful iridescent jewel beetle.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 46 REF. 16.51

LANDS DEPARTMENT PUBLIC PLAN No
7-25, 7-26, 8-24 - 8-26, 9-25, 9-26
D C E Ref. No F 28

Figure 116

Reabold Hill is one of the highest parts of the Coastal Plain near Perth and is used for sightseeing. The remainder of the area is popular for bushwalking, for which gravel paths have been provided, and for recreation in general.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation, recreation and education value, and its proximity to Perth residential areas. Coordinated management of the area is likely to be required, particularly in view of the proposals for road and service corridors to pass through it. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora (especially the Fremantle mallee and limestone marlock); restricting planting to local indigenous flora; and fire control.

Recommendations:

- M47.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M47.2 That the Perth City Council's proposal to maintain and extend Bold Park is endorsed.

M48 LAKE CLAREMONT

The recommended area comprises parts of Perthshire Aw lots 1, 2, 5 to 8, 58, and parts of Perthshire Locations 223, 224, 227 to 229, 231, 232, 237, 238 and 6223, owned in fee simple by the Town of Claremont (Figure 117). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is affected by sewerage and pumping works, and private groundwater extraction may affect water levels and vegetation. The area may also be affected by spraying for mosquitoes.

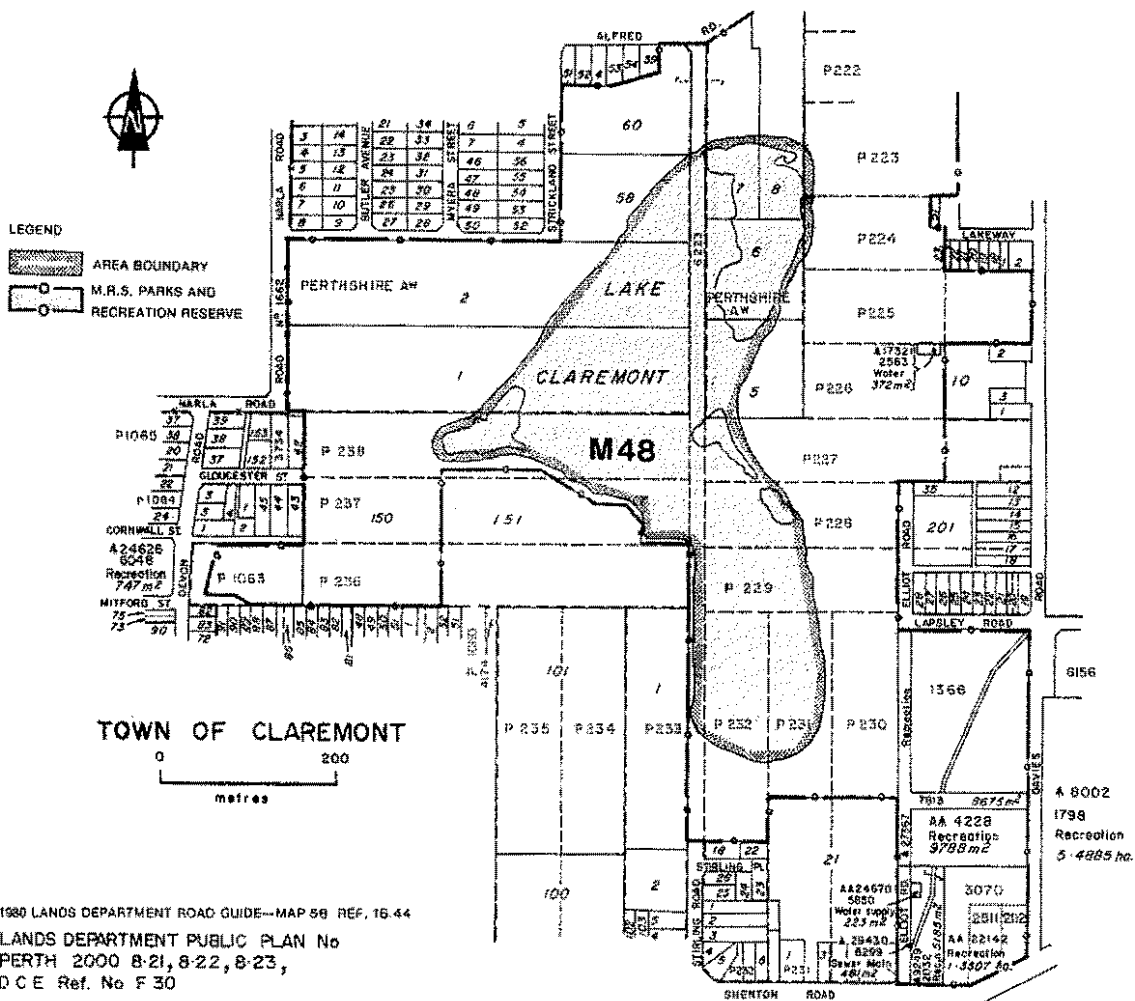


Figure 117

Lake Claremont, also known as Butler's Swamp, contains mud pond weed, bulrushes and many dead paperbarks which probably died as a result of a one metre water level rise early this century when the surrounding land was cleared. Most of the remaining vegetation is around the north-west side of the lake, where the shore is lined with paperbark and the rush *Scirpus maritimus*. Further away from the lake there is a woodland of tuart, marri and peppermint, there being many fine specimens of the last species.

The lake is normally permanent and provides a summer refuge for a wide variety of water-birds. Many of these breed there and some including the pink-eared duck are uncommon in the inner metropolitan area. The area is popular with ornithologists.

The Claremont Town Council has provided a picnic area and cycle track and has investigated methods of removing bulrushes to provide more open water for water-birds.

Important management considerations for the area include: only allowing recreation activities which are compatible with the conservation of flora and fauna; improving the lake's value as a summer refuge for water-birds; and the area's potential for water.

Recommendation:

M48.1 That the Claremont Town Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

M49 KINGS PARK

The recommended area is situated less than 1km west of Perth's Central Business District and comprises Reserve A1720, for Public Park, vested in the Kings Park Board; and C22352, for Water Supply, vested in the MWA (Figure 118).

The area contains roads, water supply reservoirs and mains, sewerage works and SEC underground cables. The Botanic Gardens and arboreta occupy 17 ha and 19 ha respectively. More than twelve hundred species of native Western Australian plants have been brought into cultivation and are displayed in this living collection. The biology of the native flora is studied to aid in bringing into cultivation more native species and in management of bushland parks.

The Kings Park Board is appointed and operated under the Parks and Reserves Act, 1894-1978.

About two-thirds of Kings Park is undeveloped bush, most of which is low open-forest or woodland dominated by sheoak, slender banksia and Menzies' banksia. Less common trees include tuart, jarrah, marri, Christmas tree and acacia.

The limestone scarp overlooking the Swan River supports quite different vegetation. Much of it is closed-scrub dominated by parrot bush with stinkwood and tree smokebush. In the rockier areas cockies' tongues, chenille honeymyrtle and *Scaevola nitida* predominate. The closed-scrub also includes Hackett's hop bush, an uncommon species restricted to the metropolitan area.

The vegetation in the Park comprises about two hundred and fifty native species, and about fifty introduced species. Introduced species include Eastern States eucalypts such as sugar gum and lemon-scented gum, and bulbous weeds such as romulea and gladiolus.

There are over sixty species of birds of which about half are regular inhabitants, including western silvereye, twenty-eight parrot, black duck and wood duck. The brush possum is the only native mammal surviving in quantity in the Park. Bob-tails, skinks and other reptiles are also to be found.

The Park's character has been altered by frequent fires and the invasion of veldt grass. Upsets in the ecological balance have led to the destruction by insects of many tuart and jarrah trees. Feral cats have eliminated some species of fauna, and reduced numbers of others. There are a number of endangered species in Kings Park.

Kings Park is an important educational resource. It is visited by more than eleven thousand children annually and has an Education Centre which runs nature study programmes. It is also used regularly for research by the Commonwealth Scientific and Industrial Research Organisation, government departments and tertiary institutions. It has important recreation value and many facilities and features are visited by over five million people a year.

Besides its internal attractions associated with its natural bushland and its scenic views over the Swan River and the city, Kings Park provides a pleasant backdrop to Perth's commercial and residential areas.

The area constitutes open space of regional significance, in conjunction with the Swan River (see Figure 1, Chapter 4), because of its high conservation, recreation and education value and its location close to the heart of the city. The area is wholly managed by the Kings Park Board; however technical and financial assistance could be provided by recognition of it as a Regional Park.

As well as having high conservation value, the area is also significant for fauna. The water rat, which is uncommon in System 6 and rare elsewhere in Australia, has been recorded in the swampy section near Bardon Park. The reed beds in the north-west are feeding grounds for many water-birds, including such species as swan, coot and crane, and could be useful nesting sites for reed-warblers, if less affected by wash from boats.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4), because of its high conservation and recreation values. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; maintaining water-bird habitats; and allowing only passive recreation.

Recommendations:

M50.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

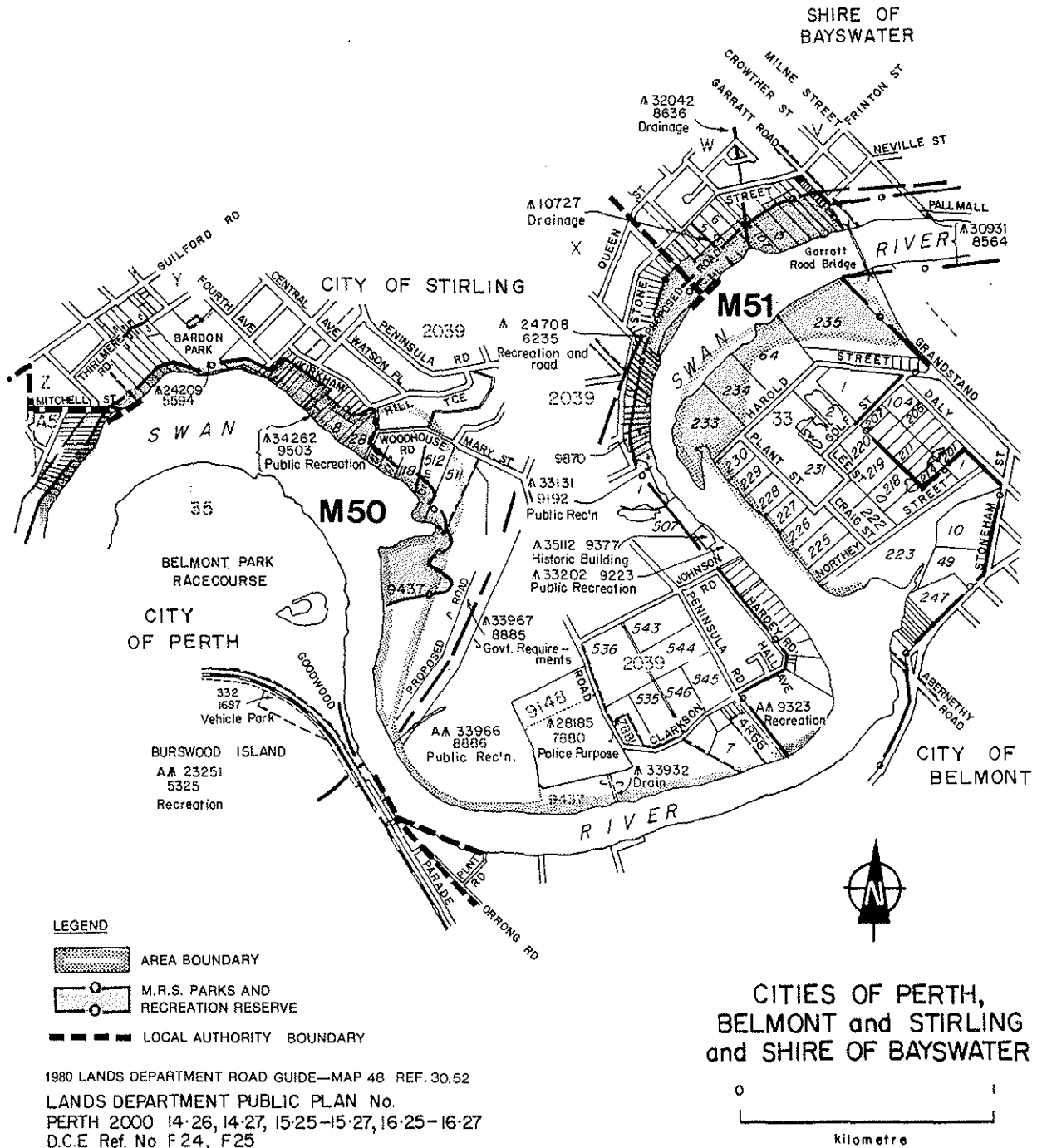


Figure 119

- M50.2 That the Metropolitan Region Planning Authority and the Stirling City Council, in consultation with local landowners, prepare a management plan for the area.
- M50.3 That ways and means of implementing the management plan recommended in M50.2 with respect to the privately owned land be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

M51 SWAN RIVER SALTMARSHES, BELMONT AND MAYLANDS

The recommended area extends from Garratt Road Bridge to about 1km downstream along the Swan River and comprises Reserve C24708, for Recreation and Road, not vested; and part of Reserve C32042, for Drain, vested in the Metropolitan Water Authority; part of lot 10, part of lots 5 to 11, lots 13, 102 to 111 and 114 (Location W), part of lots 1 to 8 (Location X), part of lots 496, 498 to 504 (Location 2039), part of lots 64, 223 to 230, 234, 235 and lot 233 (Location 33), freehold land partly owned by the MRPA (Figure 119). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is affected by clay extraction. The northern bank may be affected by the proposed "Swan River Drive". Works may be required to improve river flood capacity.

The saltmarshes are most extensive on the southern side of the river. The principal species are *Salicornia australis* and *Suaeda australis*. The southern bank carries paperbark and flooded gum and the northern bank scattered clumps of swamp sheoak. Further downstream, near the bend in the river, there are sand bars that are fairly well covered with trees, adjoining which are some saltmarshes. On the northern bank there is a flat and a saltmarsh, which carry patches of bulrush and paperbark, with native reeds and introduced grasses. On the landward margin of the flat there are marri and wattle, and scattered clumps of swamp sheoak together with some introduced willows. These saltmarshes, trees, and adjoining extensive wading areas make up one of the few undisturbed areas along the river which support a wide variety of water-birds.

The recommended area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4) because of its conservation and recreation values. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; maintaining water-bird habitats; and only allowing recreation activities which are compatible with the conservation of flora and fauna.

Recommendations:

- M51.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M51.2 That the Metropolitan Region Planning Authority, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

M52 PERTH AIRPORT

The recommended area comprises Locations 687, 783, 2803, 3346, 4886, 6246, and part of Locations 24 to 33, and 773, freehold land owned by the Commonwealth of Australia (Figure 120).

The Swan Shire Council has supported the eastward extension of Perth Airport, as indicated by the MRPA in its Eastern Corridor Report.

Private groundwater extraction may affect water levels. There are drainage works and SEC lines in the area, and it may be affected by proposed drainage works. The Dampler to Perth natural gas pipeline will pass through the area.

Although Perth Airport is more than twice as large as Jandakot Airport, a smaller portion has been left uncleared. Most of the vegetation is in the north-eastern section near Kalamunda Road, and includes woodland of marri, open-woodland of jarrah and low woodland of banksia and sheoak. In the eastern section near the Wittenoom Road railway crossing, there are winter-wet flats which carry low closed-forest of swamp paperbark and emergent flooded gum, some woodland of marri, and many other swamp plants. In the southern section along Hardey Road there is low closed-forest of paperbark species and swamp banksia, and low woodland of other banksia species, Christmas tree and pricklybark. Most of the remainder of the airport that is undeveloped is partly cleared. Trees of the above species are present in places but the understorey is usually absent.

Important management considerations for the area include: the retention, where possible, of uncleared vegetation; and encouraging, where possible, the growth and regeneration of local indigenous flora.

Recommendation:

M52.1 That the Commonwealth of Australia retain as much uncleared land as possible.

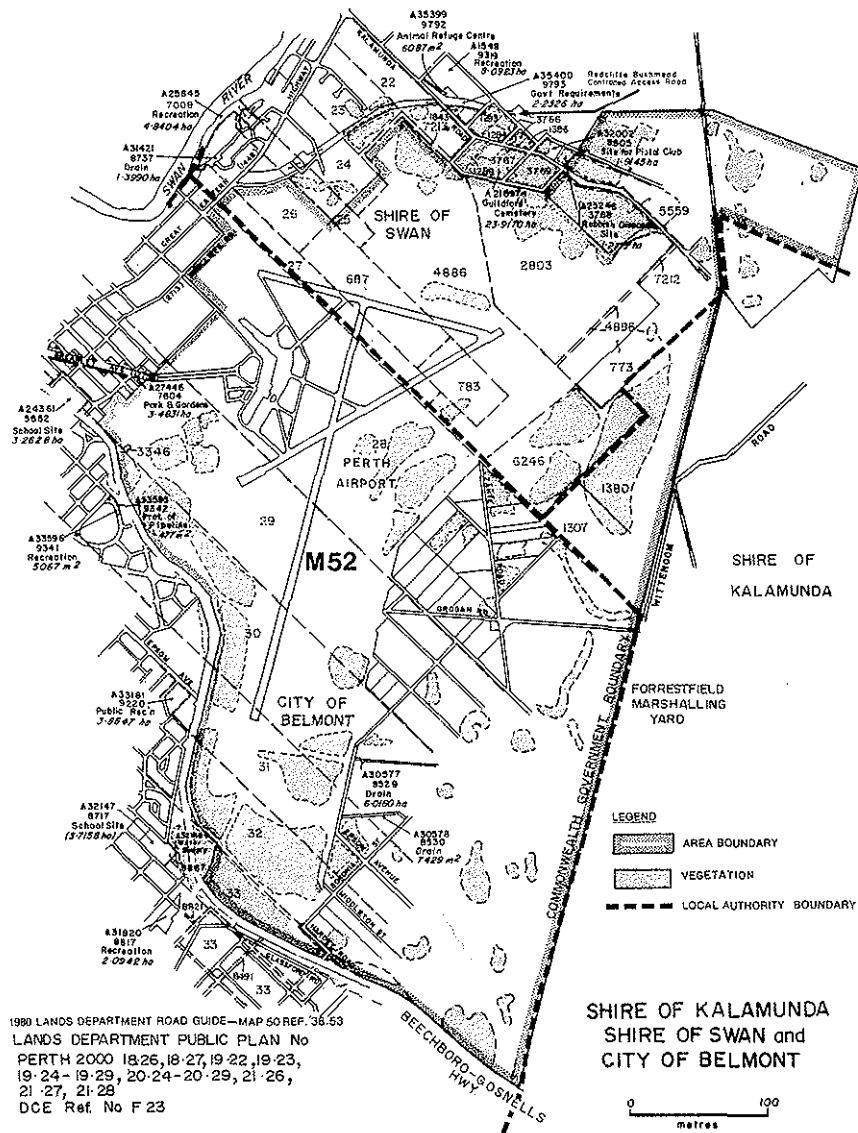


Figure 120

M53 RESERVE C29880, FORRESTFIELD

The recommended area is situated to the east of the Newburn Marshalling Yard and comprises Reserves C29880, for Government Requirements, not vested; C33525 for Government Requirements, not vested; C36238, for Road Purposes, vested in the Commissioner for Main Roads; C37997, for Community Welfare Purposes, vested in the Minister for Community Welfare, C37260, for Fire Training School, vested in the W.A. Fire Brigades Board, C37981, for Depot Site, vested in the State Energy Commission; part of Reserve C31709, for Sewage Treatment Works Disposal Site, vested in the MWA; and lots 1, 2, 31, 33, 39, 40, 43, 44 and part of lots 19, 20, 21, 30 (Location 31), privately owned freehold land (Figure 121).

The MRD has constructed the Roe Highway which passes through C29880 along its eastern side. The Dampier to Perth natural gas pipeline will pass through the area. The SEC has undertaken extensive clearing and earthworks construction within Reserve C37981; an area in the centre of Reserve C31709 is used by the MWA and the remainder is uncleared.

The area contains a significant uncleared portion of the eastern Coastal Plain near Perth. The vegetation is low open-forest of banksia, mixed with some jarrah. Over a hundred species of indigenous flora occur in the reserves. Some, including *Isopogon drummondii* and *Dasypogon* species, are of particular importance, occurring in few localities elsewhere. The swamp flats just north of the junction of Maida Vale Road and Hardey Road support low closed-heath with composition unlike other swamp vegetation near Perth.

Recommendations:

- M53.1 That the State Energy Commission, the W.A. Fire Brigades Board, the Main Roads Department and the Metropolitan Water Authority, in consultation with the Department of Conservation and Environment, manage the area so as to retain as much as possible of the natural vegetation.
- M53.2 That the protection of the conservation value of natural vegetation on the privately owned freehold land be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

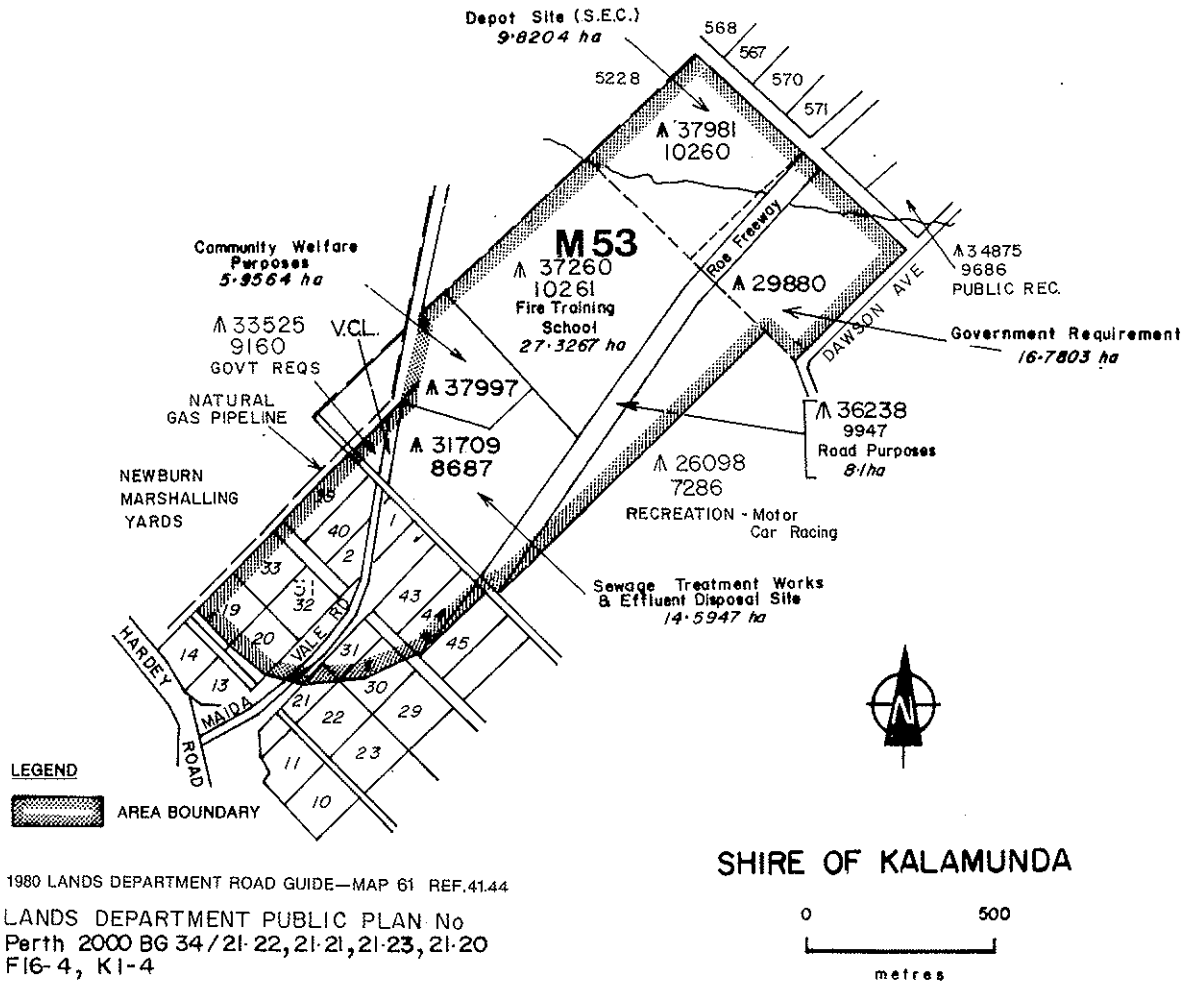


Figure 121

M54 FORESHORE RESERVE, PEPPERMINT GROVE

The recommended area is situated along the foreshore of Freshwater Bay and comprises Reserve A17113, for Recreation, vested in the Shire of Peppermint Grove (Figure 122). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The northern end of the Reserve is uncleared and supports a thriving vegetation, chiefly closed-scrub of mixed species, together with emergent tuarts. The area is significant for the structure of its vegetation since most areas of the Coastal Plain which were formerly composed of closed-scrub have been changed by frequent fires. This Reserve has apparently remained unburnt for some time, and its specimens of Rottneest cypress, wattles, parrot bush, chenille honeymyrtle and cockies' tongues are outstanding for their fully developed character. Other species occurring in the area which are now rare in the Perth area are Hackett's hop bush and tar bush.

The area is also important geologically, as it contains one of Australia's few Pleistocene deposits. There are few, if any, sites which are of comparable age and composition to the emergent shell bed near the Scotch College boat shed. The Peppermint Grove Shire Council has erected a sign which prohibits excavation or removal of material without the Shire's written permission. However, due to the vulnerability and small size of the deposit, further measures are likely to be needed in order to preserve it.

The area contributes to open space of regional significance extending along the Swan River because of its high conservation, recreation and education value (see Figure 1, Chapter 4).

Recommendations:

- M54.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M54.2 That the Geological Sites Committee, in consultation with the Peppermint Grove Shire Council, prepare a management plan to preserve the vegetation and the shell deposits.

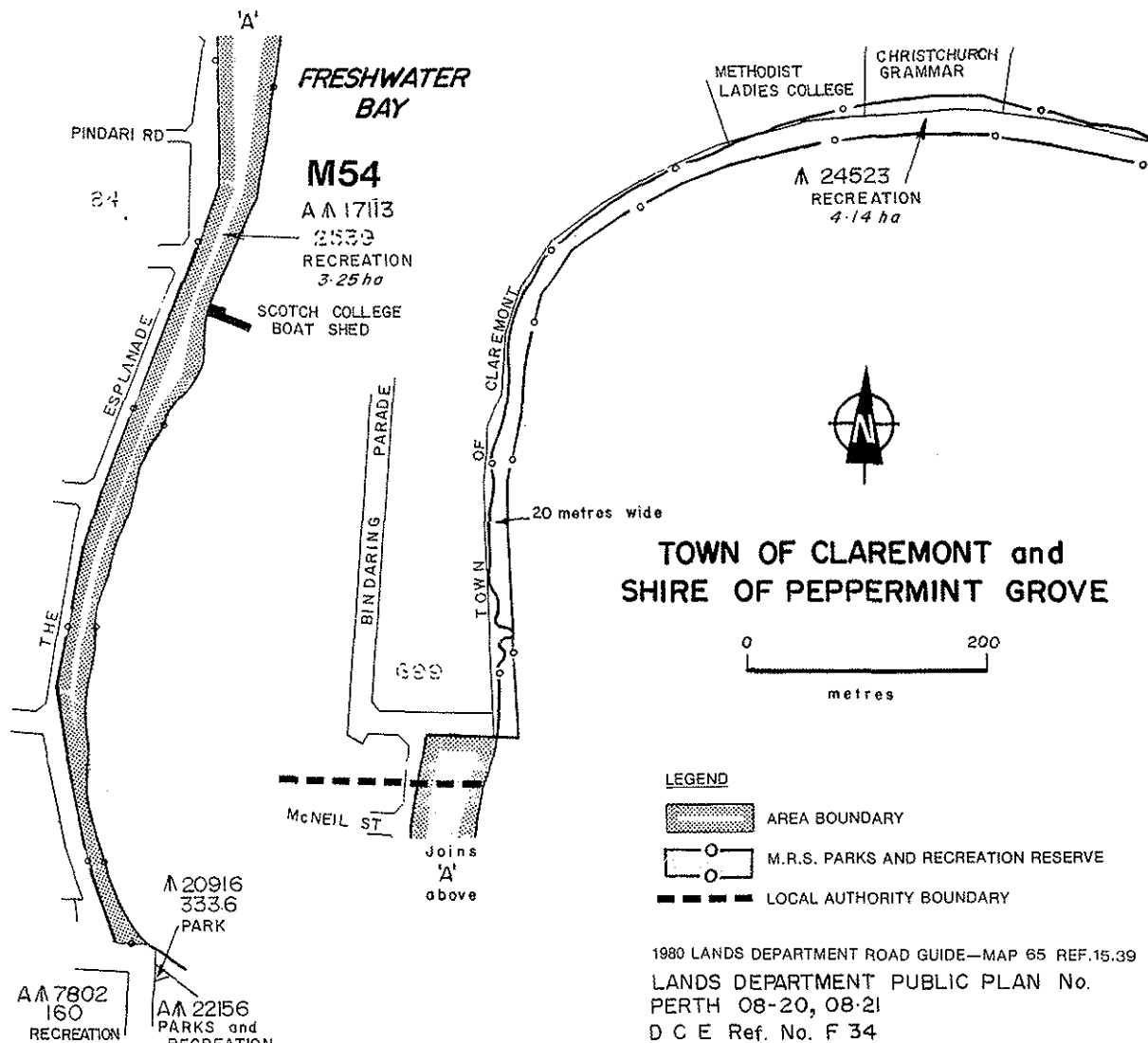


Figure 122

M55 BUCKLAND HILL, MOSMAN PARK

The recommended area comprises Reserves C9140, for University Endowment, and C27798, for Use and Requirements of the University of Western Australia, both under Crown Grant to the University of Western Australia; C9403, for Government Requirements and C11418, for Obelisk and Trigonometric Station, both not vested; C13374, for Water Supply, vested in the Minister for Water Resources; C32057, for Parklands and Recreation, vested in the Town of Mosman Park; Locations 288, 293 to 295 and part of Location 174, most of which is controlled by the Commonwealth Department of Defence (Figure 123). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The MRPA's Western Suburbs Traffic Study has investigated the possibility of road or rail alignments through this area. The MRD states that the area will be affected by road widening requirements for Stirling Highway. The MRPA views the area as having urban development potential.

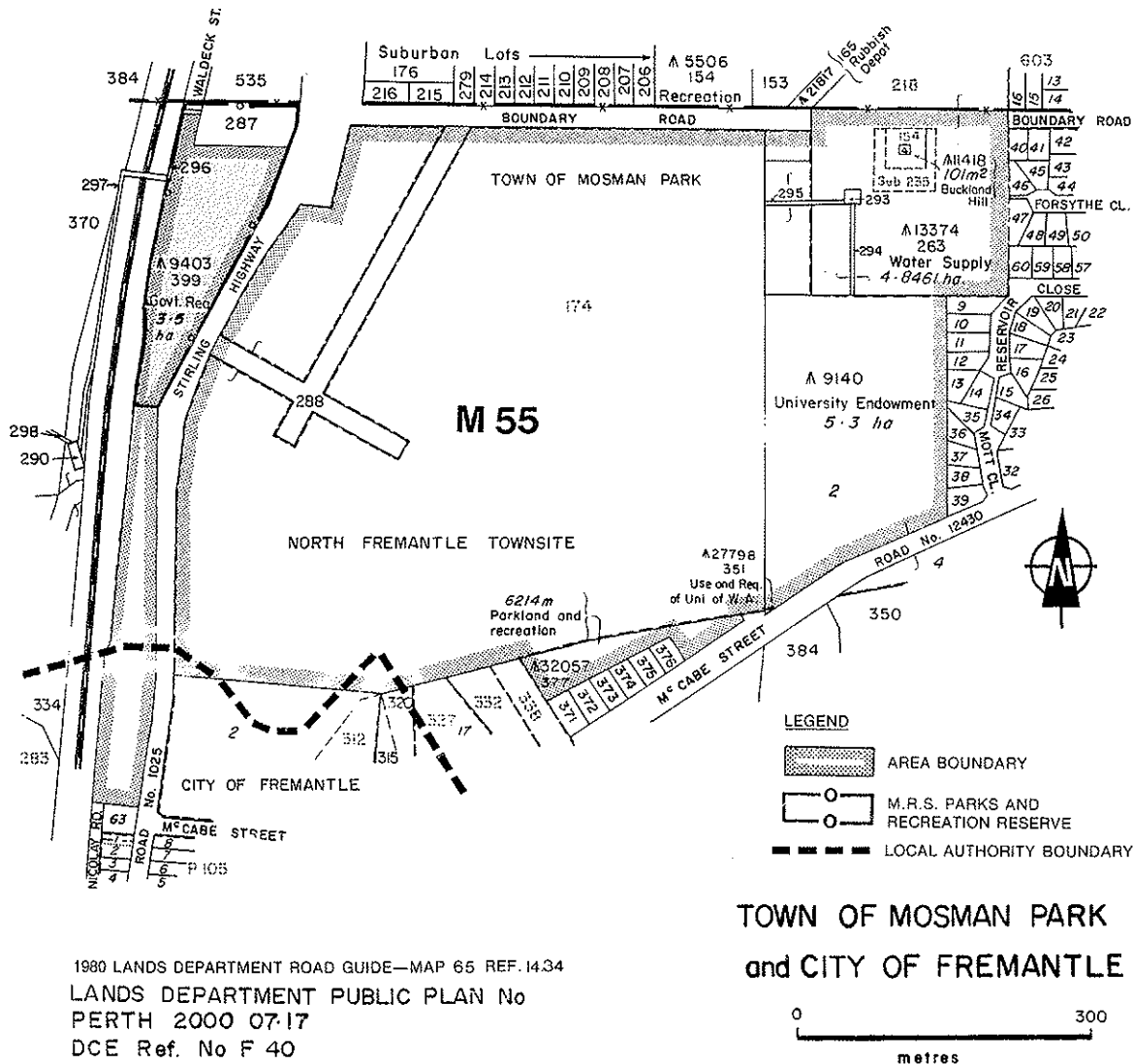
The MWA has requested that access to the service reservoir within Reserve 13374 be restricted.

The shallow sandy soils overlying limestone on the northern and north-western sides of Buckland Hill carry an open-shrubland which includes chenille honeymyrtle, *Acacia xanthina* and *Acacia lasiocarpa*. On the northern side and summit of the hill there are such species as cockies' tongues, peppermint and couch honeypot. In both areas, exotic species have become dominant.

Buckland Hill is significant for two main reasons. Firstly, it has historic value, as it was one of the sites Captain Stirling chose for the Swan River Colony. Secondly, it has regional importance as the only large undeveloped area (apart from Kings Park) on the Stirling Highway north of the river. It provides visual relief from the light industry to the south and suburbia to the north. It also provides open views to the sea, and emphasises Fremantle as a separate entity from Perth. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; and retaining the open character of the area.

Recommendation:

M55.1 That the Commonwealth of Australia and the Mosman Park Town Council, in consultation with the Department of Conservation and Environment, the University of Western Australia, and the Fremantle City Council, prepare a management plan for the area.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 65 REF. 14.34
 LANDS DEPARTMENT PUBLIC PLAN No
 PERTH 2000 07.17
 DCE Ref. No F 40

Figure 123

M56 FORESHORE RESERVES, MOSMAN PARK

The recommended area includes Chidley Point and the southern portion of Mosman Bay and comprises Reserves A3346, A25466 and C8369, for Recreation, all vested in the Town of Mosman Park; and vacant Crown land (Figure 124). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Reserve C8369 has a narrow rocky shore with a dense fringe of the rush, *Scirpus nodosus*. Behind this a steep slope rises about 50m. In places it is sandy, and in others coastal limestone forms small caves. On the slope there are scattered tuarts, thickets of wattle, a good population of *Diplopeltis heugelii* and a number of other shrub species. The slope has been disturbed, especially by frequent burning and pedestrian damage, with subsequent erosion, but enough natural vegetation remains which is worth conserving.

Although much of the vegetation has been removed from Reserves A3346 and A25466, there are some fine swamp sheoak close to the river, with slender banksia and parrot bush on the sandy slope behind. Further downstream there is a tall shrubland which includes parrot bush and three acacia species. There is also some quandong and snakebush, which do not occur anywhere else along the Swan River. The vegetation which remains is in good condition and well worth preserving.

The area has some historical interest, as there is a cave in a cliff at the Chine which was occupied in 1917 by Paul "Bunny" Statham, a Lands Department draftsman, who travelled by canoe for part of his journey to work.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4) because of its conservation and recreation value. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous species; constructing suitable footpaths, which would serve as fire breaks; preventing other pedestrian access in order to reduce erosion; and burning off as little as possible, with at least five years between burns, and preventing unauthorised fires.

Recommendations:

- M56.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M56.2 That the vacant Crown land be declared a Class C Reserve for Recreation and that the Reserve be vested in the Town of Mosman Park.
- M56.3 That the Mosman Park Town Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

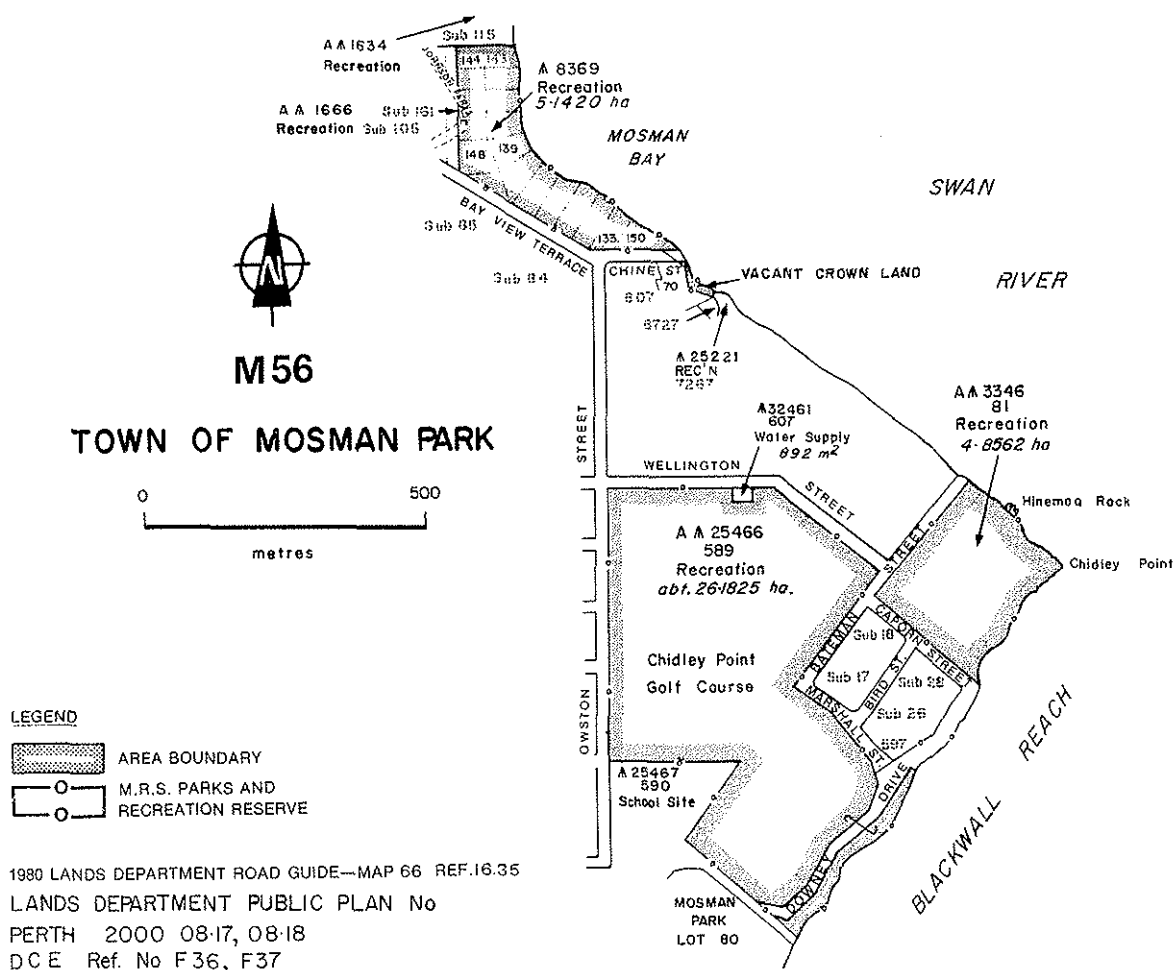


Figure 124

M57 MINIM COVE FORESHORE, MOSMAN PARK

The recommended area comprises Reserve C31157, for Park, and Reserves C31156, A1630, A1631 and C24242, for Recreation, all vested in the Town of Mosman Park; and two closed roads which are vacant Crown land (Figure 125). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

There is a proposal for the development of a restaurant on the disused quarry site within Reserve C31156.

The cliffs expose a rich fossiliferous shell bed that was probably deposited towards the latter part of the Pleistocene Era. The bed is one of the best preserved and most informative deposits of its age in Western Australia, and is located conveniently close to Perth. It has been studied by geologists and others for the past fifty years, and its value to the study and teaching of history and geology is outstanding.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4) because of its high conservation, recreation and education value.

Recommendations:

- M57.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M57.2 That the vacant Crown land be declared a Class C Reserve for Recreation and that the Reserve be vested in the Town of Mosman Park.
- M57.3 That the Geological Sites Committee, in consultation with the Mosman Park Town Council and the Metropolitan Region Planning Authority, prepare a management plan for protection of the shell deposits.

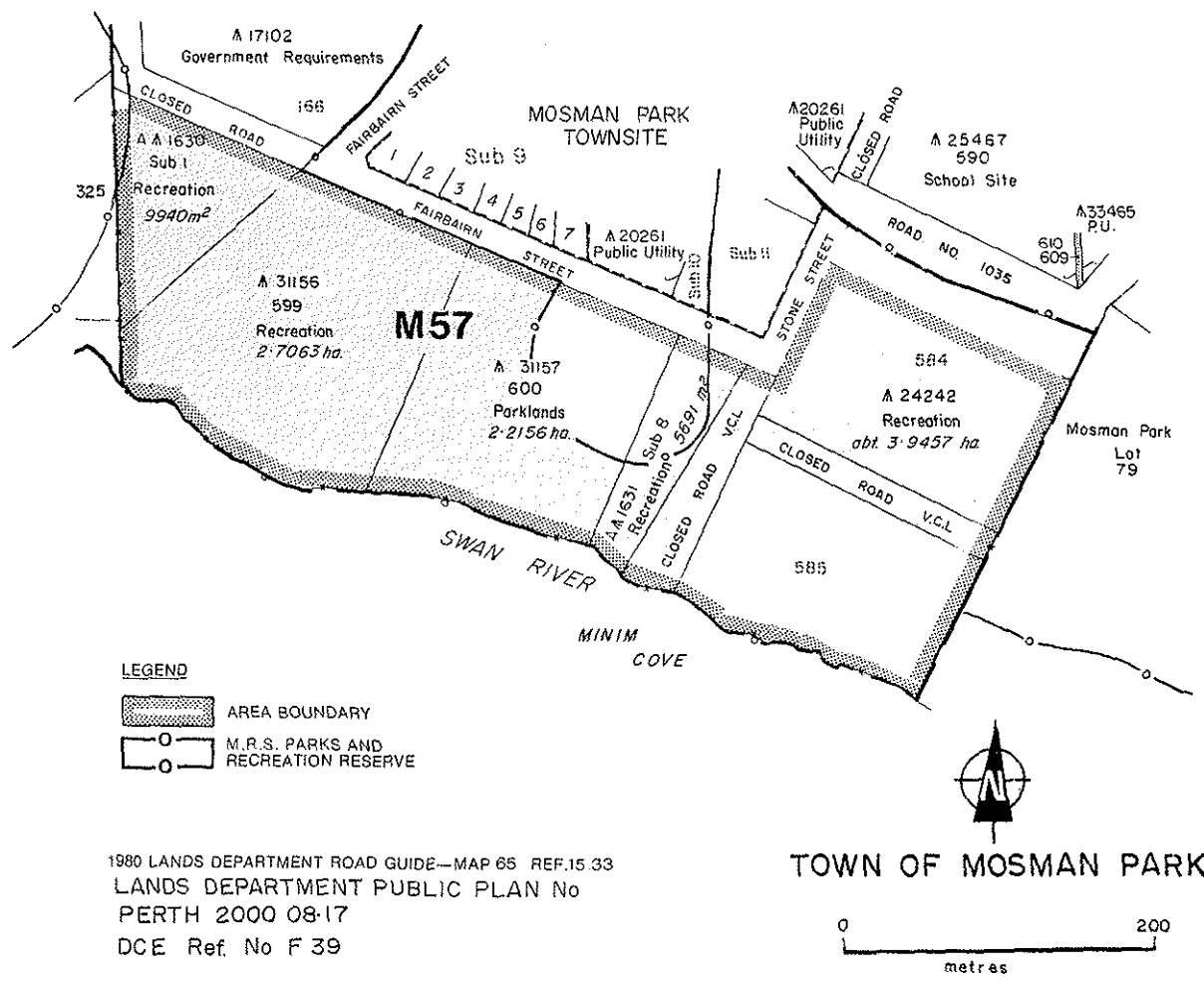


Figure 125

M58 BLACKWALL REACH FORESHORE, BICTON

The recommended area is situated on the north-eastern part of Blackwall Reach and comprises part of Reserve A4813, for Recreation, vested in the City of Melville (Figure 126). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is affected by SEC lines.

Blackwall Reach contains the only relatively untouched area of river limestone left in the region. The limestone cliffs rise sheer from the river to a height of about 20m. They provide a welcome contrast to the highly developed shores downstream and complement the opposite bank of the Reach. A few shrubs cling to the cliffs such as parrot bush, *Spyridium globulosum*, *Alyxia buxifolia* and *Olearia axillaris*. Atop the cliffs and reaching back to Honour Avenue is open-woodland of tuart with peppermint, blackboys and parrot bush.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4), because of its high conservation and recreation value.

Recommendations:

- M58.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M58.2 That the portion of Reserve A4813 west of Honour Avenue be excised and declared a Class A Reserve, for Conservation of Flora and Fauna, and that the Reserve be vested in the City of Melville.
- M58.3 That the City of Melville prepare a management plan for the area in consultation with the Department of Fisheries and Wildlife.

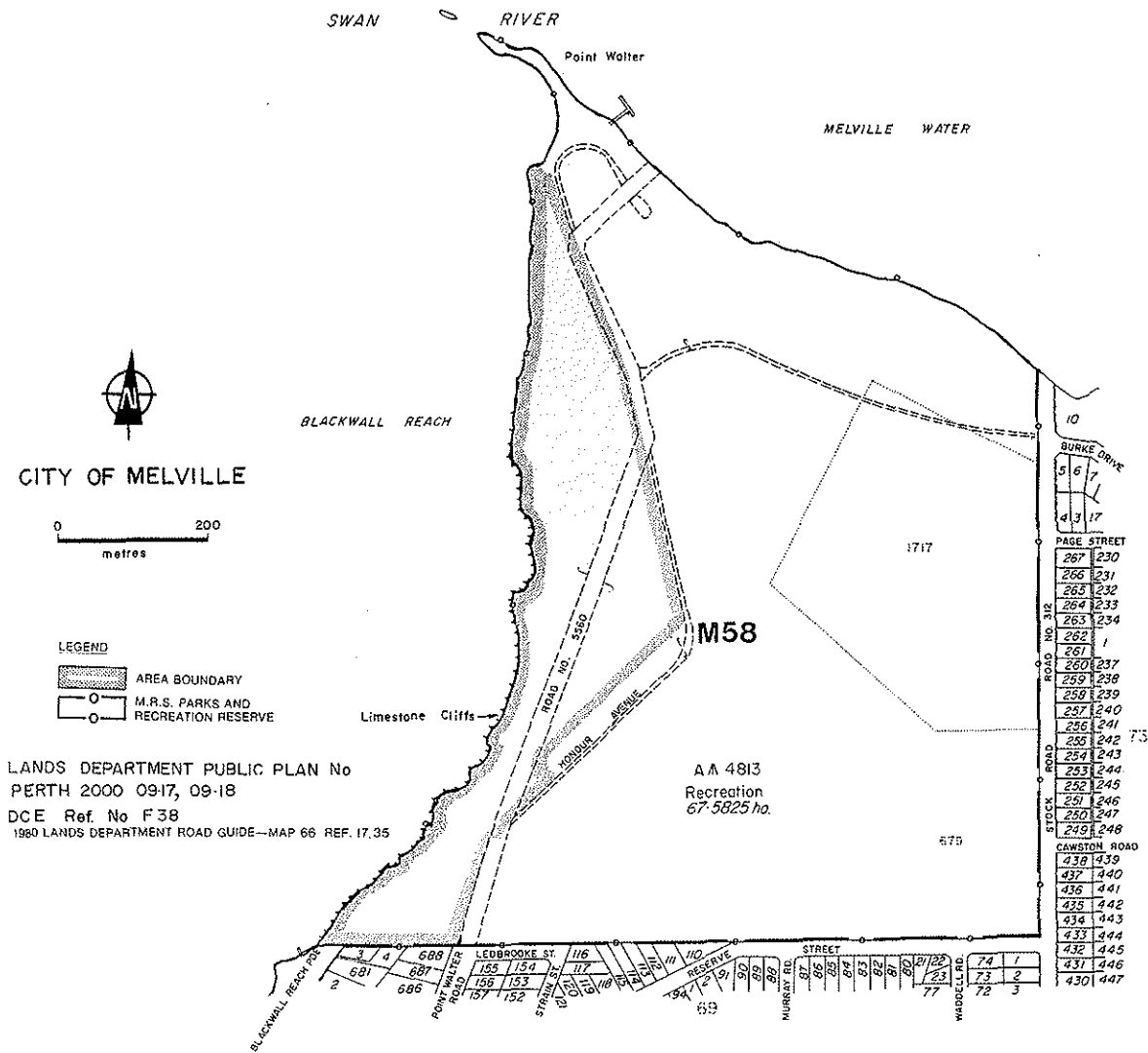


Figure 126

M59 POINT RESOLUTION FORESHORE, DALKEITH

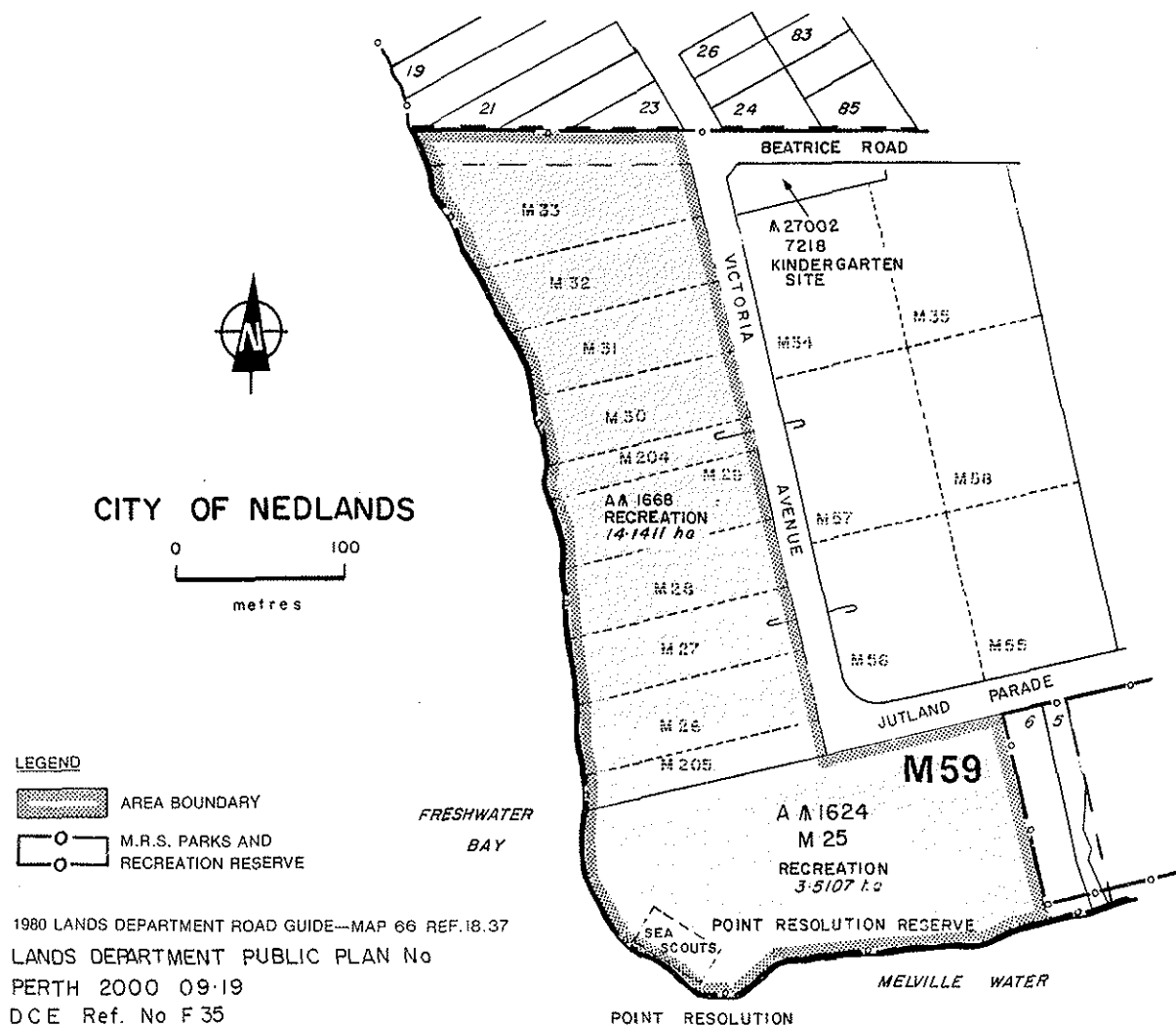
The recommended area is situated on the north bank of the Swan River in Dalkeith and comprises Reserve A1624 and part of Reserve A1668, for Recreation, both vested in the City of Nedlands, with power to lease (Figure 127). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The shoreline around the point is sandy and rocky and is backed by a short steep slope with picturesque coastal limestone pinnacles and rocks. From the Point northwards into Freshwater Bay, the dominant shrub is parrot bush, with such species as *Jacksonia furcellata* and *Scaevola nitida* and some specimens of the relatively uncommon *Grevillea crithmifolia*. The sedge *Scirpus nodosus* and the native grass *Sporobolus virginicus* occur along the shore. Towards the northern end, on a sandy flat behind the shore, is a grove of peppermints. A number of bird species have been recorded in the area, including two specimens of the rare sea-eagle. There are several exotic species — fig, a pepper tree, European olive and veldt, couch and buffalo grass.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4), because of its conservation and recreation value. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; and minimising disturbance from fire and trampling of vegetation.

Recommendations:

- M59.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M59.2 That the purpose of Reserve A1624 be amended to Parkland and Recreation.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 66 REF.18.37
 LANDS DEPARTMENT PUBLIC PLAN No
 PERTH 2000 09-19
 DCE Ref. No F 35

Figure 127

- M59.3 That the portion of Reserve A1668 to the west of Victoria Avenue be excised and added to Reserve A1624.
- M59.4 That the Nedlands City Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

M60 AQUATIC RESERVE, SOUTH PERTH

The recommended area comprises tidal flats adjacent to Reserves C21483, C33803 and C33804, immediately to the west of the Kwinana Freeway, South Perth (Figure 128).

The vegetation of the area adjacent to the Kwinana Freeway consists mainly of a belt of sedgeland dominated by giant rush and *Scirpus nodosus*. Some exotic species, particularly poplar and bamboo, have become established but these can probably be controlled.

The area is one of only three significant wading bird habitats remaining on the Swan River. (The others are the tidal flats and saltmarsh areas at Alfred Cove in Attadale [M61] and the tidal flats, lake and marsh at Pelican Pt., Crawley [M62].) Thousands of birds migrate to these areas each year from their breeding grounds in the northern hemisphere. Twenty-two species of these "transequatorial migratory wading birds" have been recorded on the Swan River, though only a few are plentiful. The most abundant species is the red-necked stint which has its breeding grounds in north-eastern Siberia and western Alaska. As many as four thousand stint have been observed on the tidal flats on the Swan River.

The migratory waders feed almost exclusively on the invertebrate life (molluscs, worms, crustaceans, etc.) which the tidal flats and marshes provide. If these areas were to be destroyed by dredging or reclamation then existing wader populations could not be maintained. The three areas complement each other, depending on tides and weather.

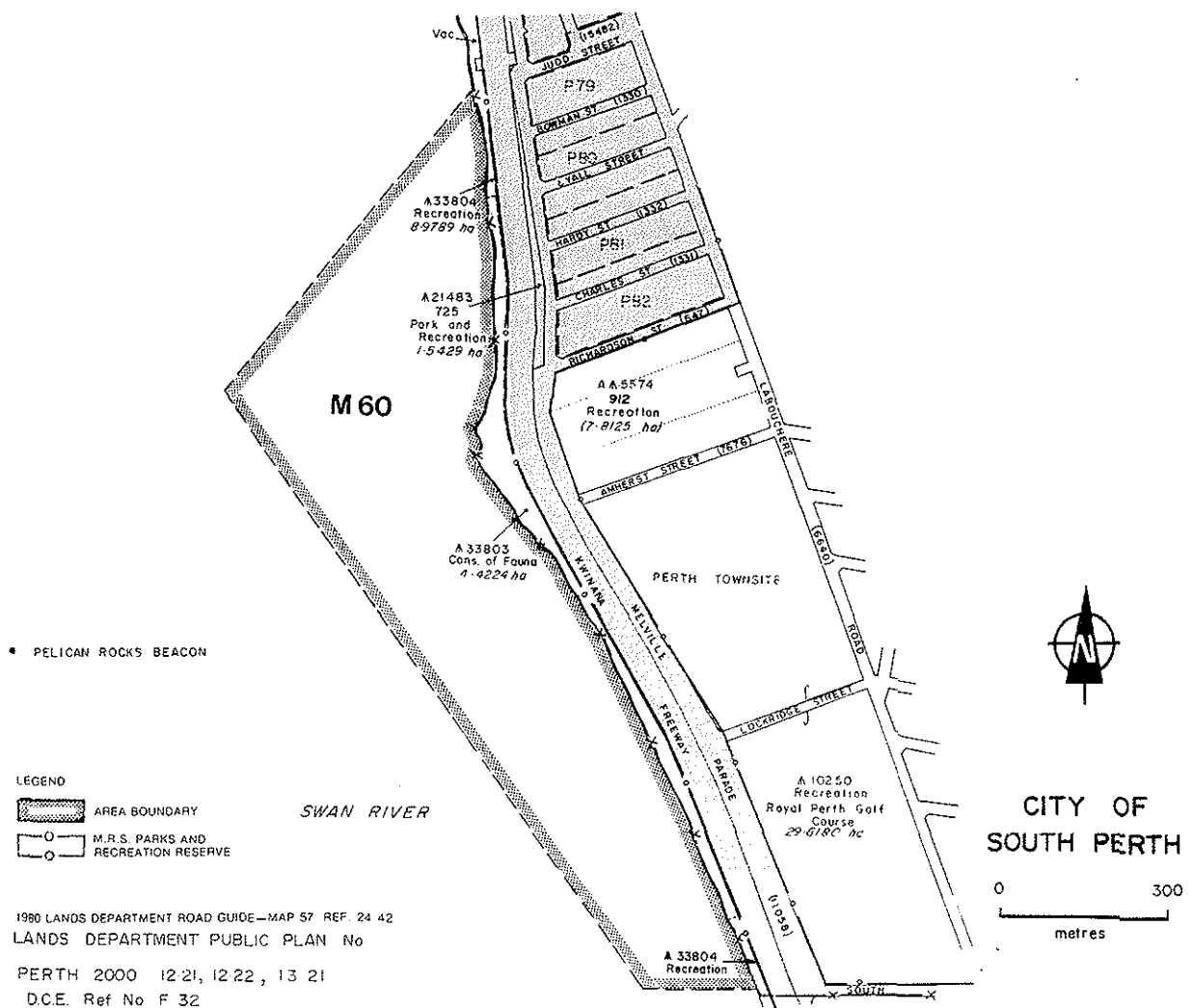


Figure 128

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4) because of its high conservation value. The whole area below high water mark is within the Swan River Management Authority management area. Although it comes under the jurisdiction of the Department of Marine and Harbours, that Department considers it to be in unnavigable waters. The W.A. Wildlife Authority rates the area as one of great environmental significance and considers it should be managed to protect that significance.

Recommendations:

- M60.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M60.2 That the area of water, as shown on Figure 128, be declared a Class A Reserve for Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

M61 AQUATIC RESERVE, ATTADALE

The recommended area comprises the tidal flats and saltmarsh areas of Point Waylen and Alfred Cove in Attadale (Figure 129).

Bordering the shoreline is a belt of samphire which is up to 50m wide in Alfred Cove. The southern section of Alfred Cove supports extensive areas of sedgeland of *Juncus kraussii*, with a few small patches of bulrush. Further north there are areas of closed-heath of *Arthrocnemum* species and near Burke Drive there is a narrow belt of low closed-forest of swamp paperbark bordered by a few flooded gums.

In Alfred Cove there is an unmodified fossil deposit of sea-shells which is of considerable scientific interest.

Also the area is one of only three significant wading bird habitats remaining on the Swan River. (The others are tidal flats in South Perth [M60], and the tidal flats, marsh and lake at Pelican point in Crawley [M62].) Thousands of birds migrate to these areas each year from their breeding grounds in the northern hemisphere. Twenty-two species of these "transequatorial migratory wading birds" have been recorded on the Swan River, though only a few are plentiful. The most abundant species is the red-necked stint which has its breeding grounds in north-eastern Siberia and western Alaska. As many as four thousand stint have been observed on the tidal flats on the Swan River.

The migratory waders feed almost exclusively on the invertebrate life (molluscs, worms, crustaceans, etc.) which the tidal flats and marshes provide. If these areas were to be destroyed by dredging or reclamation then existing wader populations could not be maintained. The three areas complement each other, depending on tides and weather.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4), because of its great environmental importance which is mainly due to its zoological significance. At present most of the shoreline abutting the proposed area (see Figure 129) is within Reserve C35066, for Conservation of Flora and Fauna, which is vested in the W.A. Wildlife Authority. The proposed area is under the jurisdiction of the Swan River Management Authority and the Department of Marine and Harbours. Protection of the area's environmental value would be enhanced by giving it security of tenure and purpose and ensuring coordinated management.

Recommendations:

- M61.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M61.2 That the area of water, as shown on Figure 129, be declared a Class A Reserve for Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- M61.3 That the W.A. Wildlife Authority consult the Swan River Management Authority and the Department of Marine and Harbours in the preparation of any management plan for the area.

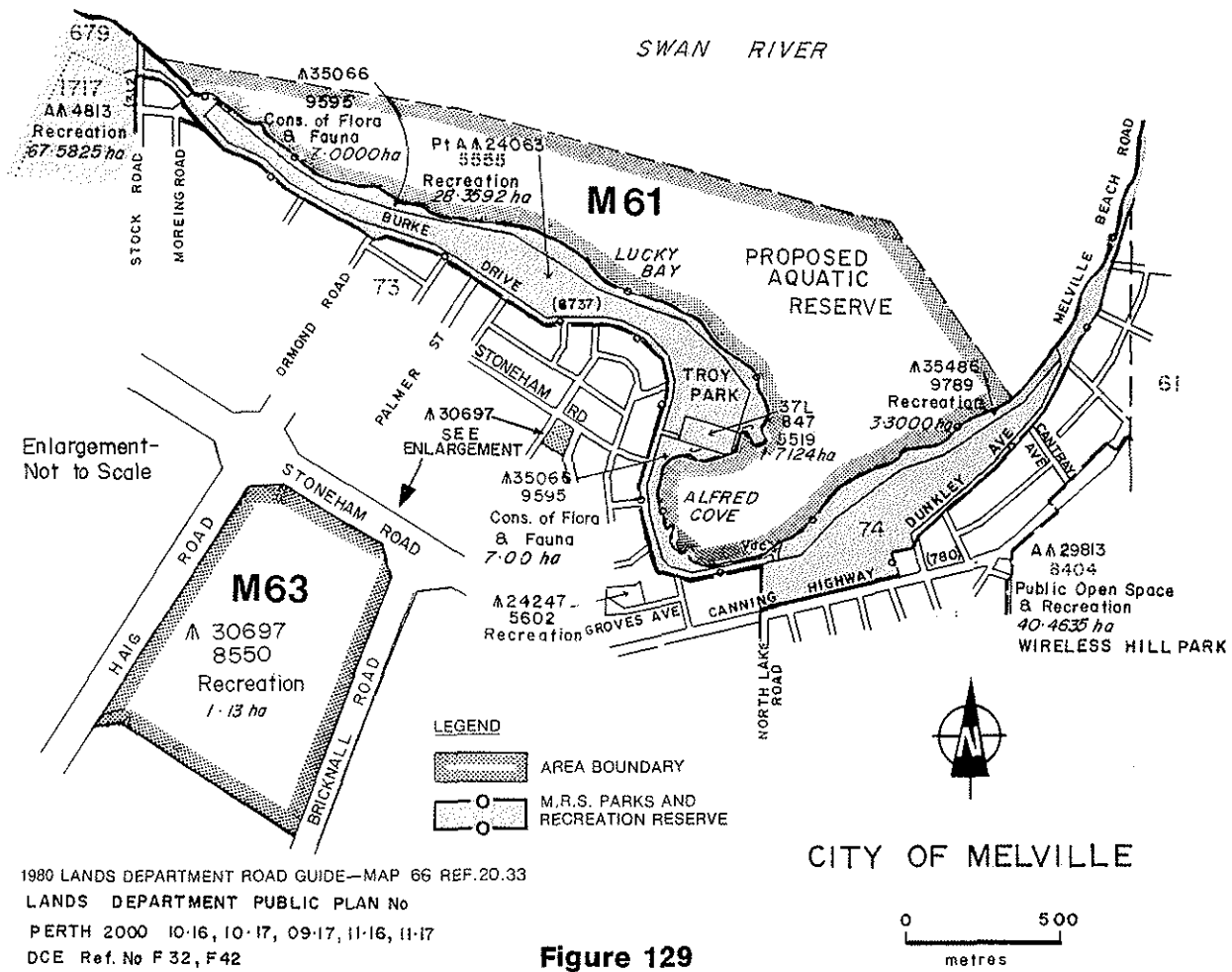


Figure 129

M62 PELICAN POINT, CRAWLEY

The recommended area comprises part of Reserve A17375, for Recreation, vested in the National Parks Authority; and tidal flats, lake and marsh at Pelican Point, Crawley (Figure 130). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

A large section of Pelican Point is covered in sedgeland of *Scirpus nodosus* and giant rush, with a few emergent shrubs of wattle in places. Near the lake there are a few small clumps of saltwater paperbark, a tree with limited occurrence along the Swan River. Further inland, near the fence around Reserve A17375, is a clump of swamp sheoak.

The area is one of only three significant wading bird habitats remaining on the Swan River. (The other are tidal flats in South Perth [M60] and the tidal flats and saltmarsh areas of Alfred Cove in Attadale [M61].) Thousands of birds migrate to these areas each year from their breeding grounds in the northern hemisphere. Twenty-two species of these "transequatorial migratory wading birds" have been recorded on the Swan River, though only a few are plentiful. The most abundant species is the red-necked stint which has its breeding grounds in north-eastern Siberia and western Alaska. As many as four thousand stint have been observed on the tidal flats on the Swan River.

The migratory waders feed almost exclusively on the invertebrate life (molluscs, worms, crustaceans, etc.) which the tidal flats and marshes provide. If these areas were to be destroyed by dredging or reclamation then existing wader populations could not be maintained. The three areas complement each other, depending on tides and weather.

The terrestrial portion of the area is a Metropolitan Region Scheme Parks and Recreation "Reserve". The aquatic portion is under the jurisdiction of both the Swan River Management Authority and the Department of Marine and Harbours.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4), because of its great environmental importance which is mainly due to its zoological significance. To enhance the quality of the habitat the whole area should have security of purpose and tenure together with a coordinated management plan.

Recommendations:

- M62.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M62.2 That the purpose of Reserve A17375 be amended to Conservation of Flora and Fauna, and Recreation, and that the Reserve be vested in the National Parks Authority.
- M62.3 That the area of water, as shown in Figure 130, be added to Reserve A17375.
- M62.4 That the National Parks Authority prepare a management plan for the aquatic area (see Figure 130) in consultation with the Swan River Management Authority and the Marine and Harbours Department.

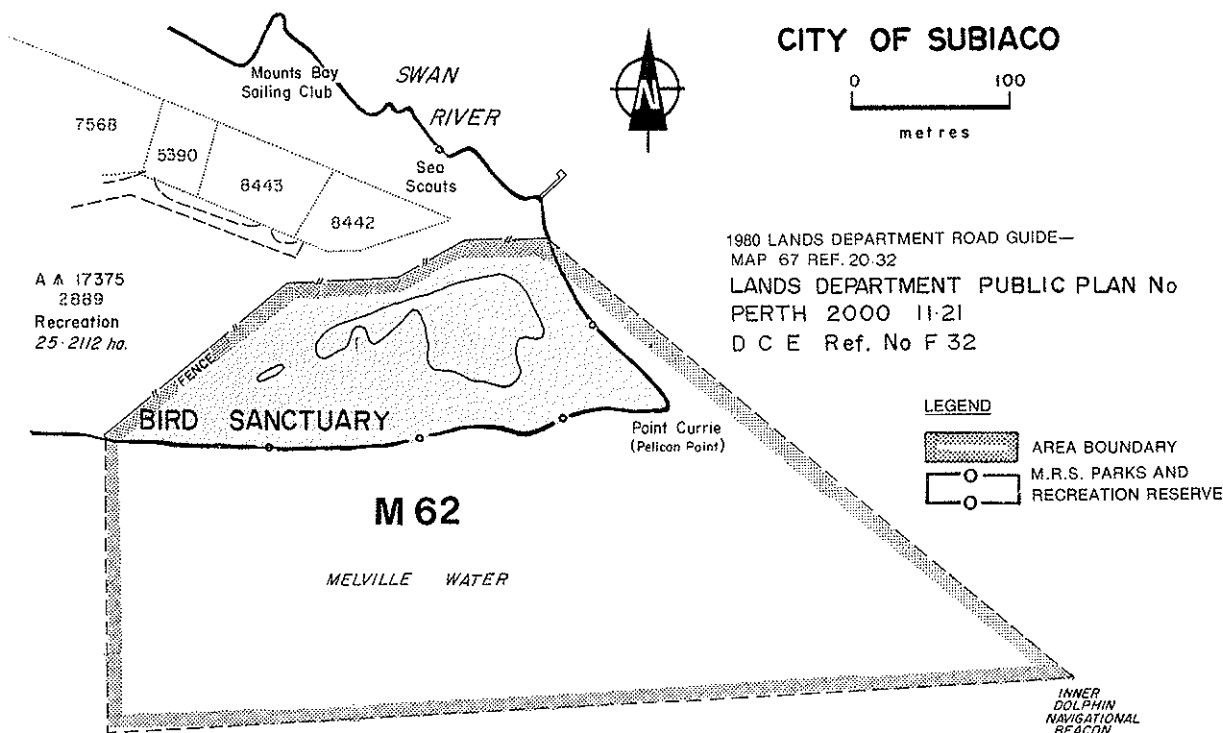


Figure 130

M63 HARRY SANDON PARK, ATTADALE

The recommended area is situated in the eastern section of Attadale and comprises Reserve C30697, for Recreation, vested in the City of Melville (Figure 129).

The area is flat and sandy, and supports a low woodland of marri together with smaller trees of banksia and some sheoak. Stinkbushes, blackboys and zamias are common and there is a population of smokebush. The vegetation generally is in good condition in spite of the occurrence of veldt grass and other weeds. This area and Reserve C35066 at Alfred Cove are the only reserves in Attadale which retain natural vegetation.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; and retaining the Reserve in its natural condition as far as possible.

Recommendations:

- M63.1 That the purpose of Reserve C30697 be amended to Parkland.
- M63.2 That the Melville City Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

M64 WIRELESS HILL PARK, ARDROSS

The recommended area is situated immediately south of the Canning Highway between Alfred Cove and Ardross and comprises Reserve A29813, for Public Open Space and Recreation, vested in the City of Melville (Figure 131).

The Reserve has several roads leading to the summit, several lookout towers and a children's playground. The Telecommunications Museum has been established here.

There are drainage works in the Reserve.

The area covers most of Wireless Hill, which is a high consolidated dune. In the south-eastern section there is woodland of marri and jarrah, with a second storey of banksia and sheoak, and an understorey which includes blueboy, *Jacksonia sericea* and bacon-and-eggs. Other species include kangaroo paw and cats paw, which make good displays in spring. Geraldton wax has been extensively planted around the lookout.

Much of the rest of the vegetation has been disturbed to some extent. There is a heavy infestation of perennial veldt grass which is unlikely to be reduced since the open habitat encourages its growth. The Reserve is the only large uncleared area remaining in the district.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora, especially in the south-eastern portion, and retaining the natural vegetation as much as possible; and only allowing recreation activities which are compatible with the conservation of flora and fauna.

Recommendation:

M64.1 That the Melville City Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

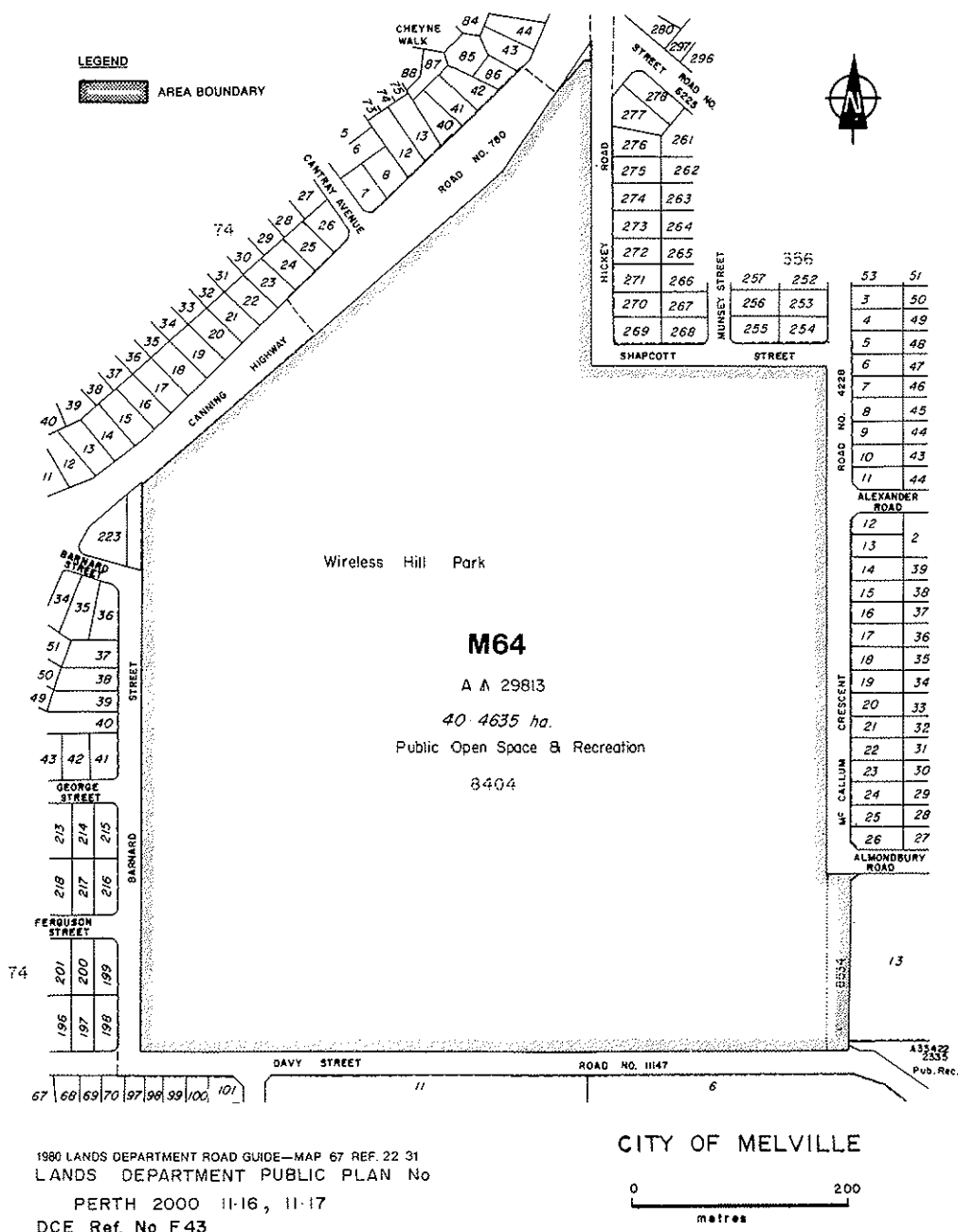


Figure 131

M65 POINT HEATHCOTE FORESHORE, APPLECROSS

The recommended area is situated on the shore and steep slope behind Point Heathcote and comprises Reserve C32738, for Recreation, and part of Reserve C29604, for Hall Site, both vested in the City of Melville (Figure 132). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area consists of rocky headland of coastal limestone carrying a number of native shrubs. These include *Acacia cyclops*, *Scaevola nitida* and cockies' tongues. A low open-woodland of banksia and sheoak, with shrubs such as parrot bush, tree smokebush and woollybush, occurs along Waylen Bay.

The area contributes to open space of regional significance extending along the Swan River (see Figure 1, Chapter 4), because of its high conservation and recreation value.

Recommendations:

- M65.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M65.2 That the Meville City Council, in consultation with the Department of Conservation and Environment and the Swan River Management Authority, prepare a management plan, giving consideration to encouraging the growth and regeneration of local indigenous flora.

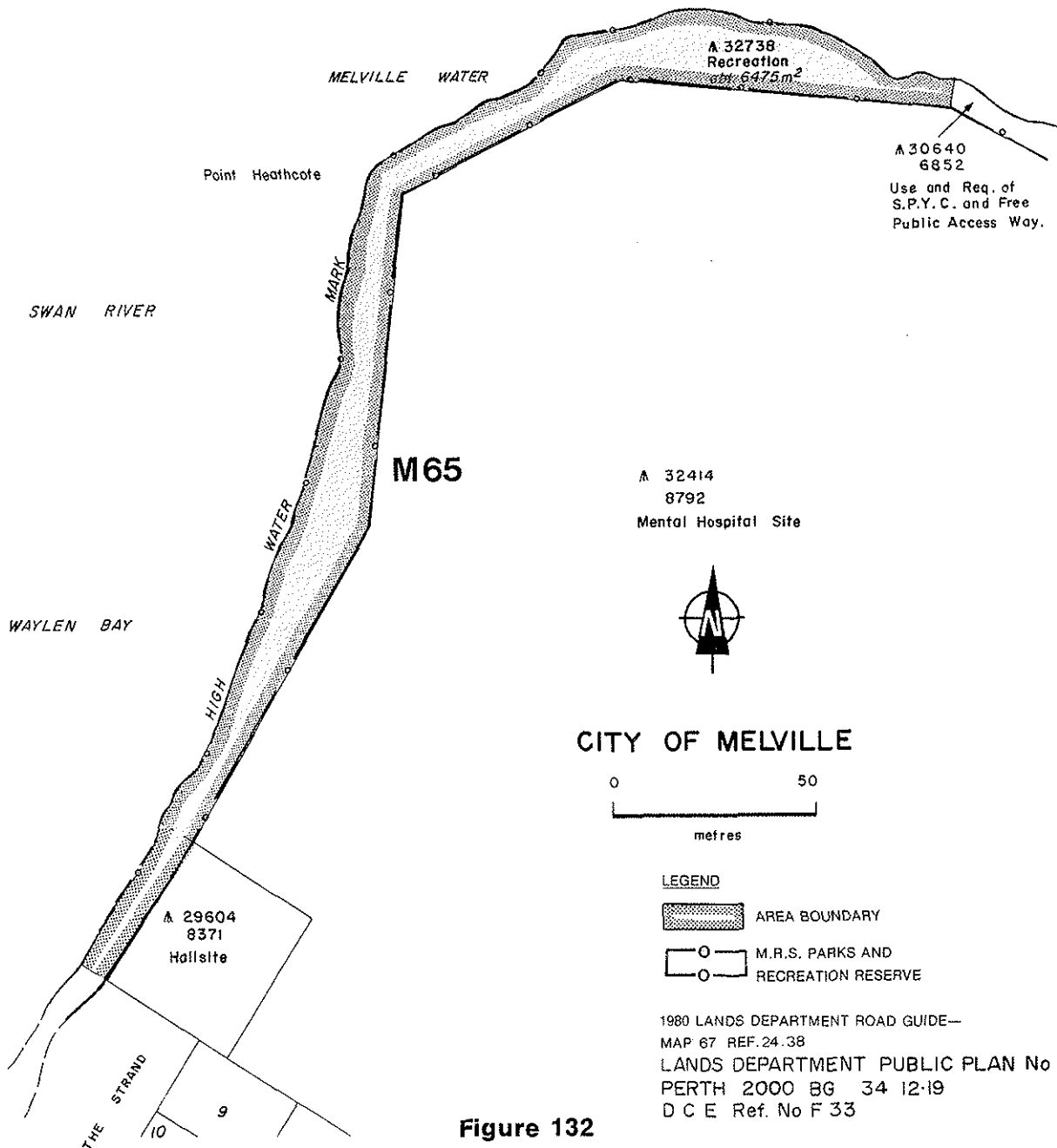


Figure 132

M66 MOUNT HENRY, MANNING

The recommended area comprises the whole of the Mount Henry Peninsula, being lot 2 and part of lots 1 and 5 (Location 37), freehold land owned by the Christian Brothers (Figure 133). The foreshore is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Sewerage works have been proposed for the area and the Kwinana Freeway and a cycleway pass through the area.

Mount Henry occupies a prominent headland with limestone outcrops. It is covered by open-woodland of tuart, merging into low open-woodland of marri, jarrah and Christmas tree with a very varied understorey including woollybush, *Adriana quadripartita* and *Daviesia juncea*. At the base of the hill there is a small stand of swamp cypress. Along the river bank there is a different range of flora, including *Juncus kraussii*, *Scirpus nodosus* and *Suaeda australis*. The area supports over a hundred native species in all.

Aquinas College uses the area extensively for biological studies, and Mount Henry itself is an important feature of the Canning River landscape. The area contributes to open space of regional significance extending along the Canning River (see Figure 1, Chapter 4), because of its high conservation and recreation value.

Recommendations:

- M66.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M66.2 That the Metropolitan Region Planning Authority and the Christian Brothers, in consultation with the Department of Conservation and Environment, prepare a management plan for the area giving consideration to the growth and regeneration of local indigenous flora.

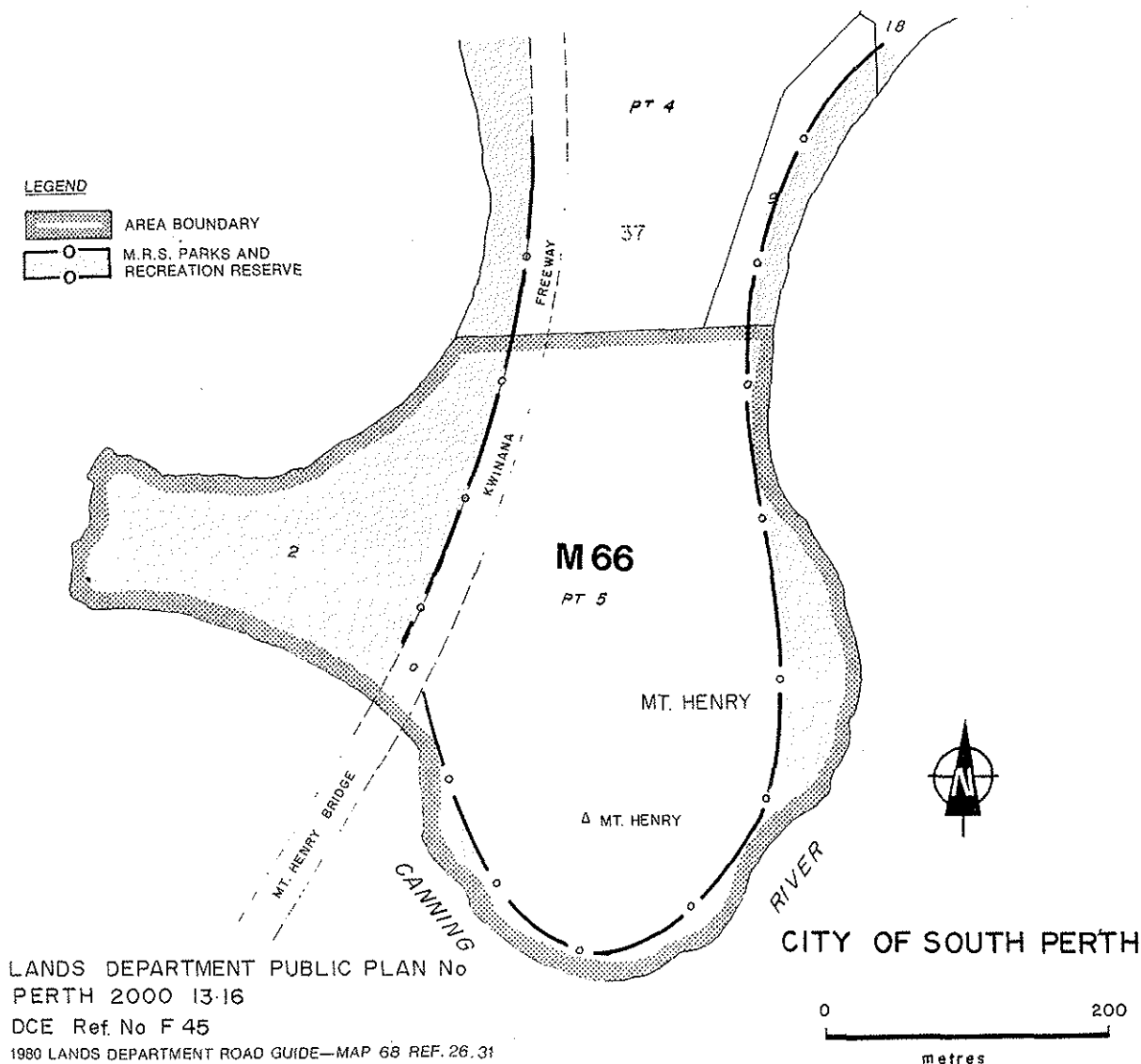


Figure 133

M67 CANNING RIVER FORESHORE, SALTER POINT TO CLONTARF

The recommended area is situated on the northern shore of the Canning River near Manning and comprises Reserve C23967, for Recreation, vested in the City of South Perth, and part of lots 14 to 17 and 58 (Location 37), privately owned freehold land (Figure 134). The foreshore strip is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area has been disturbed by drains, landfill and trail-bikes. There are sewerage and drainage works in the area.

The land not "reserved" for Parks and Recreation is the subject of a study in urban design and subdivision being undertaken by the Christian Brothers, and the MRPA anticipates that reservation of more land under the Metropolitan Region Scheme will result.

In the centre of Salter Point at the south end of Reserve C23967, there is a lagoon which is connected to the river by a narrow channel. The lagoon is surrounded by a dense band of sedges, consisting mainly of *Juncus kraussii* and some *Gahnia trifida*, with *Suaeda australis*, *Atriplex* species and samphire in more open spaces. There are several areas of salt water couch, sometimes mixed with *Samolus repens* and *Scirpus nodosus*. There are also several stands of swamp sheoak and some paperbarks. Behind the shore there is a low, sandy rise which carries native plants, including Christmas tree, stinkwood and *Dasypogon bromeliaefolius*. A narrow fringe of the sedges, samphires and paperbarks extends north along the foreshore, but landfill has destroyed it next to Salter Point Parade and in areas north of Howard Parade.

The northern portion of Reserve C23967 carries dense swamp vegetation dominated by myrtles with other species including swamp tea-tree, *Astartea fascicularis*, and rare *Melaleuca leptoclada*. There are also several stands of salt water paperbark.

The lagoon is unique on the Swan and Canning Rivers and although the remaining vegetation is limited in extent, it contains an interesting complex of species. The area contributes significantly to the appearance of the river, and the vegetation protects the banks.

The Clontarf foreshore is flat, low-lying and swampy with a low sandy ridge just behind the shore in some parts. There are many stands of saltwater paperbark and other paperbark species, which become very dense towards the eastern end. Sedges such as *Juncus kraussii* are common in the understorey and there are several shrub species, including prickly moses and *Hakea varia*.

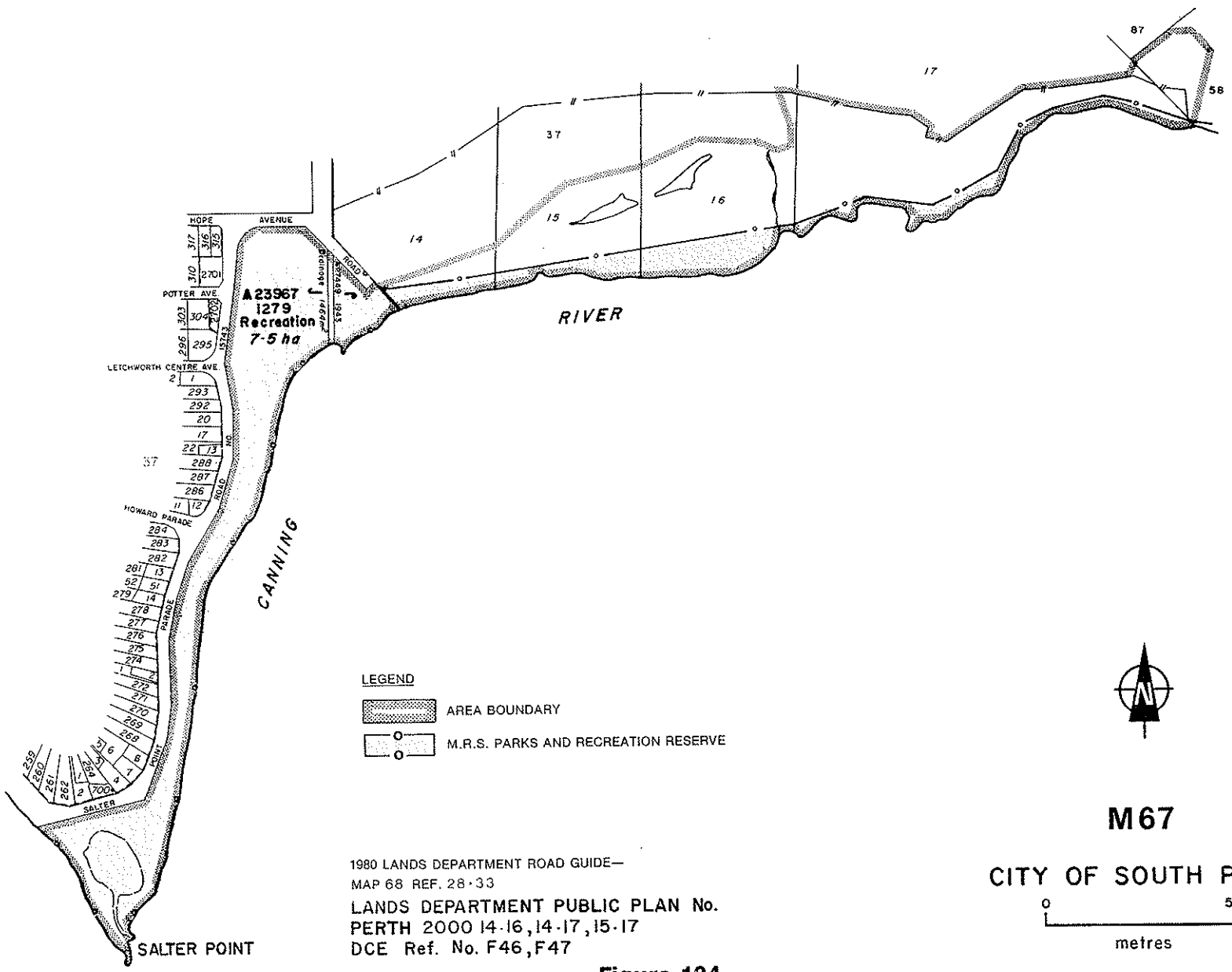
Some areas are dominated by sedges. There are also areas of samphire which include an uncommon herb of the leschenaultia family. On the shoreline there are a few swamp sheoaks. Over thirty species of plant communities have been recorded. There is no similar foreshore vegetation elsewhere on the Canning or Swan Rivers.

The variety of vegetation and water bodies, including swamp and tidal marsh, provides several faunal habitats. There are many groups of species, including amphipods, copepods and water-snail.

The area contributes to open space of regional significance extending along the Canning River (see Figure 1, Chapter 4) because of its high conservation and recreation value. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; preventing land uses which may adversely affect the environment; and only allowing recreation activities which are compatible with the conservation of flora and fauna, and restricted to disturbed areas.

Recommendations:

- M67.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M67.2 That the Metropolitan Region Planning Authority consider "reserving" those portions not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme.
- M67.3 That the South Perth City Council, in consultation with the Department of Conservation and Environment and local landowners, prepare a management plan for the area.



1980 LANDS DEPARTMENT ROAD GUIDE—
 MAP 68 REF. 28·33
 LANDS DEPARTMENT PUBLIC PLAN No.
 PERTH 2000 14·16, 14·17, 15·17
 DCE Ref. No. F46, F47

Figure 134

M68 CANNING RIVER, RIVERTON BRIDGE TO NICHOLSON ROAD BRIDGE

The recommended area comprises Reserves C7773, for Parks and Recreation, C26103, for Public Recreation, C27604, for Recreation, all vested in the City of Canning; C1289, for Landing Places, under the control of the City of Canning; C24717, C24973, C25474 and C28740, all for Recreation, and C20265 for Public Utility, all not vested; and freehold land, some of which is owned by the MRPA (Figure 135). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

There are existing drainage works. The area may be affected by proposed sewerage and drainage works, and by the proposed Chapman Road — Spencer Road connection. The conservation value of any reserve would be significantly decreased by road developments. There are also several regional roads running close by and some crossing the area.

The City of Canning has prepared a draft Canning River Region Open Space Management Plan which was subject to public submissions. This is currently being reviewed and it is envisaged that the final plan will be jointly undertaken by the Metropolitan Region Planning Authority and the Canning City Council.

The section downstream from the Kent Street Weir consists of the best estuarine vegetation of the Canning and Swan Rivers. It supports halophytic (salt tolerant) plants which are absent upstream. The margins of the river banks and islands carry low open-forest and low closed-forest of swamp sheoak and paperbark species, with a varied understorey of sedges, rushes, shrubs and small trees. The saline river flats carry mainly samphire dominated by *Arthrocnemum bidens* and two types of sedgelands. Beyond the wetland vegetation there is an area of low open-forest of flooded gum and paperbark, with a few swamp sheoaks. The whole area was originally surrounded by species such as marri, jarrah and pricklybark, but now only remnants remain, on the higher, better drained land.

The area is inhabited by about eighty-five bird species, of which sixty are likely to nest there. They include seven duck species and five species of birds of prey. Freshwater soaks on the edge of the wetland are important as a supply of drinking water for birds.

In the section upstream from the weir, the vegetation is mainly confined to trees along the river banks, including flooded gum and swamp paperbark. Bulrushes occur in damp, low-lying places near the river, and there is a dense growth of native water plants. Between the weir and the footbridge, which connects Willcock Street to Greenfield Street, there is a backwater with extensive fringing vegetation which affords refuge to large flocks of birds. This backwater, together with the area downstream from Kent Street Weir, is particularly valuable for conservation. The section upstream from the footbridge is more suitable for parkland.

The recommended area, together with the Upper Canning and Southern Rivers [M75], constitutes open space of regional significance (see Figure 1, Chapter 4), because of its high conservation and recreation values and its proximity to the Perth residential areas. Not all land under the various tenures within the area has conservation and recreation as primary management objectives. Therefore to ensure the enhancement of these values, coordination of the management structure is required.

The City of Canning's draft Canning River Region Open Space Management Plan covers most of the recommended area and delineates areas ranging from those of natural environmental value with restricted access to areas suitable for recreation, leisure and sporting activities. The draft management plan includes proposed management guidelines to enhance the conservation and recreation values of the river and terrestrial environments.

Important management considerations for this area include: encouraging the growth and regeneration of local indigenous flora; allowing pedestrian access and non-motorised boats in the areas of high conservation value; only allowing recreation compatible with the conservation of flora and fauna; providing pathways along the foreshore; maintaining the Kent Street Weir; preventing sanitary landfill and dumping; and maintaining the flow of fresh water in the Canning River.

Recommendations:

- M68.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M68.2 That the City of Canning's draft management plan for the Canning River Region Open Space is endorsed.
- M68.3 That for the section between Riverton Bridge and the footbridge, all existing Land Act Reserves occupying areas of high conservation value be made A Class, that their purposes be amended to Conservation of Flora and Fauna, and that their vesting be determined during the development of the final management plan.

M68.4 That for the section from the footbridge to Nicholson Road Bridge, all existing Land Act Reserves be made A Class, that their purposes be amended to Parklands, and that their vesting be determined during the development of the final management plan.

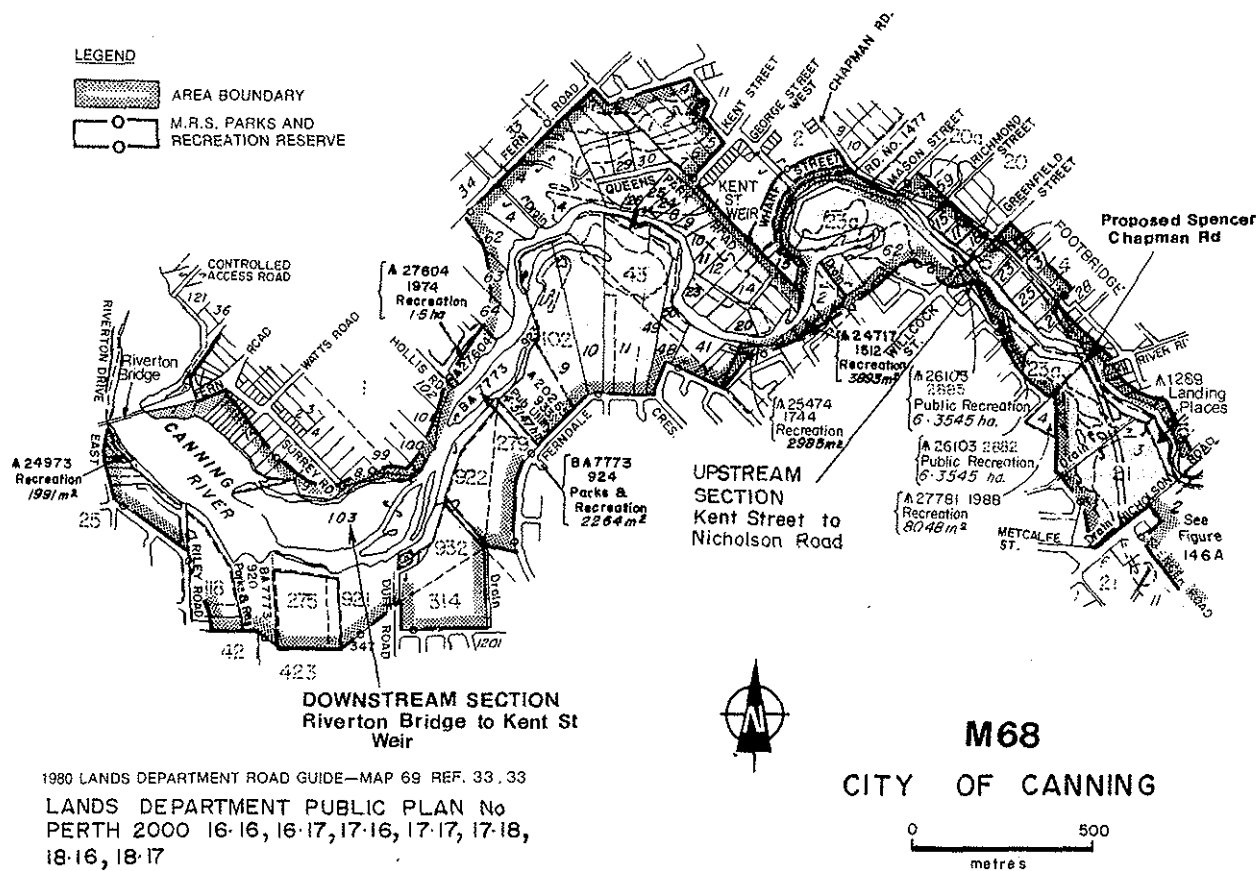


Figure 135

M69 KENWICK SWAMP

The recommended area is situated on Bickley Road in Kenwick and comprises lots 9 to 16, 77 and 78 (Location 382), owned by the University of Western Australia and used for botanical research and teaching (Figure 136). It is "reserved" for Special Uses under the Metropolitan Region Scheme.

The swamp is threatened by a falling water table. Private groundwater extraction may affect water levels and vegetation, and there may be pollution due to drainage from local septic systems. The area may be affected by future sewerage and drainage works.

Most of the land is low-lying and seasonally damp or inundated. There is a sandy rise across the block towards the north-eastern end. Low heath occurs on the swamp flats, where changes in elevation are reflected in changes in species. In the lowest areas the heath is open, with shrubby species such as *Hakea sulcata* and *Petrophile longifolia* and many herbaceous species. Where the soil is slightly saline, the sapphire *Arthrocnemum halocnemoides* and the unusual *Selenothamnus squamatus* have become established, and there are small meadows of sedges. On the slightly higher areas the heath is denser, and includes *Beaufortia squarrosa*, *Verticordia lindleyi*, *Baeckea tenuifolia*, undescribed species of *Banksia*, *Grevillea* and *Calothamnus*. The last is found only in this area. Swamp cypresses emerge above the low shrubs. The sand ridge supports low woodland, dominated by banksia and pricklybark, with an understorey which includes *Jacksonia floribunda*, woollybush and buttercup.

Kenwick Swamp is the only surviving area of its kind and its exceptional concentrations of unusual plants makes it very attractive to botanists. The associations of plants which occur there are unique and several species are unknown outside the area.

Important management considerations for the area include: minimising the impact of surrounding development on the swamp's water level; fire control; and reducing weed infestation.

Recommendations:

- M69.1 That the University of Western Australia, in consultation with the Department of Fisheries and Wildlife, prepare a management plan.
- M69.2 That if the University of Western Australia wishes to dispose of the land in the future it should be purchased when available and declared a Class A Reserve for Conservation of Flora and Fauna, and that the Reserve be vested in the W.A. Wildlife Authority.
- M69.3 That ways and means of providing a protective buffer area around Kenwick Swamp be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

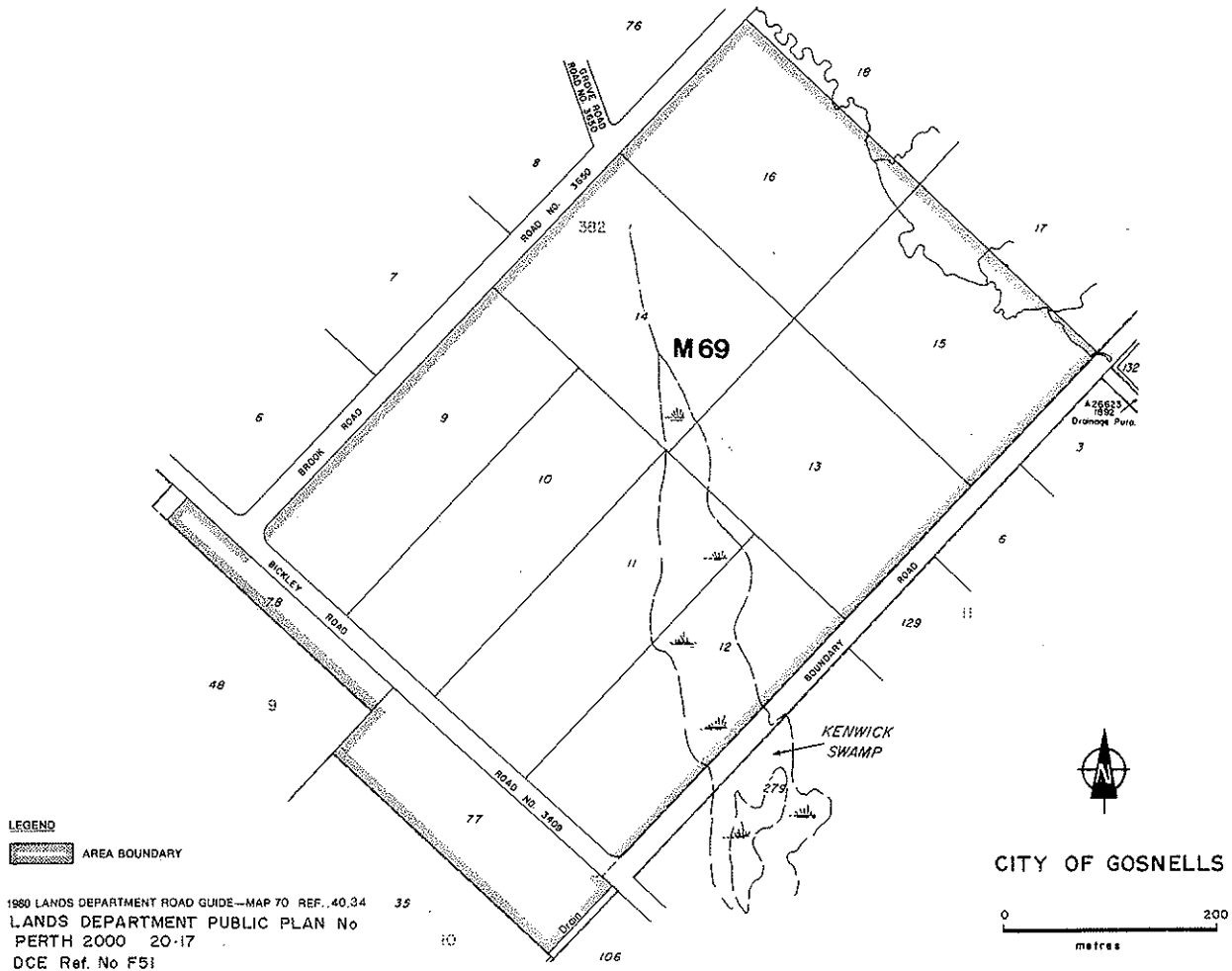


Figure 136

M70 HEATHLAND, WATTLE GROVE

The recommended area is situated about 2km west of the foot of the Darling Scarp in Wattle Grove and comprises lot 211, of Canning Location 3, privately owned freehold land (Figure 137). The land is almost flat, the soil consisting of pale brown sandy clay which in winter becomes damp, though without surface water. This landform is poorly represented in existing reserves. The vegetation is a low closed-heath which is rich in species, with several rare plants including an unnamed species of dryandra known only in one other locality (which is not a reserve), a low variant of *Jacksonia floribunda*, and rainbow plant. There is also a scattering of marri, woody pear, Christmas tree and black gin. Other species include *Lambertia multiflora*, *Verticordia densiflora* and *Cyathochaete avenacea*. The area is in good condition, with little weed infestation. The conservation value of the area is high due to the presence of rare plant species and the high quality of its vegetation generally. Because the area is privately owned, ways and means of protecting its conservation value should be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

Recommendation:

M70.1 That ways and means of protecting the conservation value of Lot 211 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

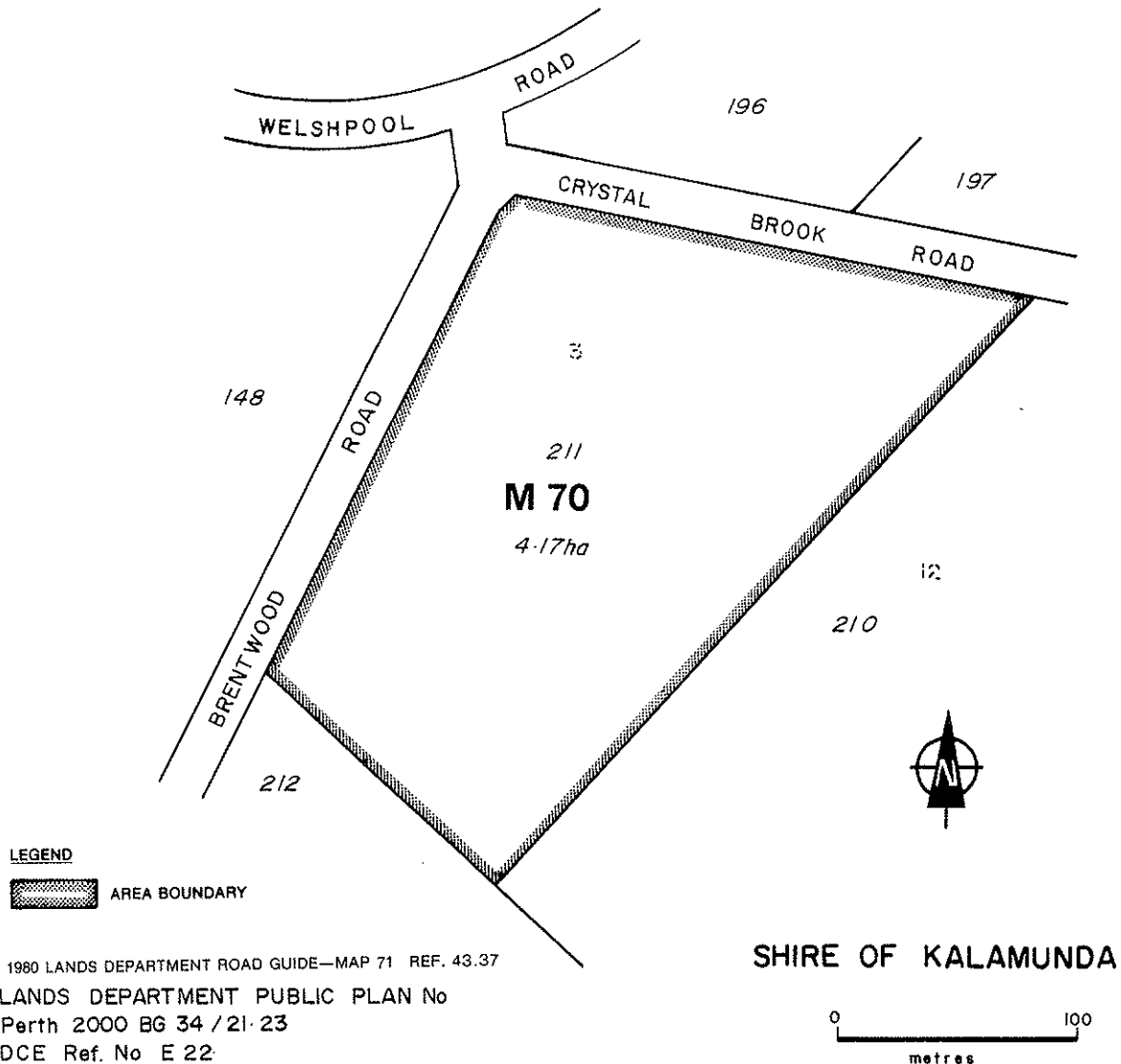


Figure 137

M71 CANTONMENT HILL, FREMANTLE

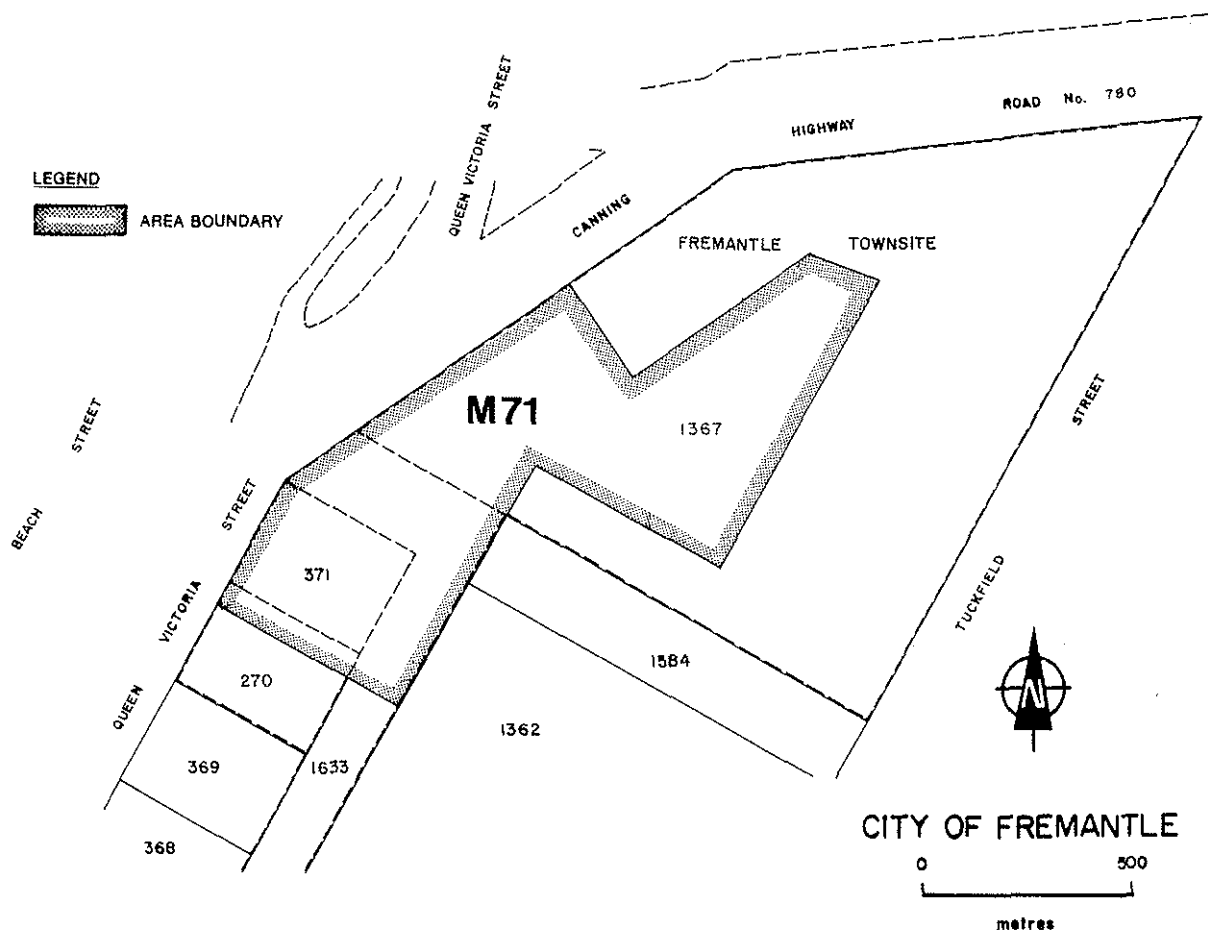
The recommended area is situated at the southern end of Fremantle Bridge and comprises Cockburn Sound Location 371 and part of Cockburn Sound Locations 270, 1367 and 1633, owned by the City of Fremantle (Figure 138).

The area contains vegetation comprising tall open-shrubland of wattle, cockies' tongues, *Melaleuca acerosa*, chenille honeymyrtle and a number of other species. An unusual occurrence is a possible hybrid between the two last named species. The block is one of the few pieces of land in Fremantle to retain any natural vegetation and it is a natural museum in that it provides an example of the Fremantle landscape as it was at the time of settlement.

Cantonment Hill is a significant historical site. It was one of the first-named sites in the region and marked the eastern end of early Fremantle. Early settlers embarked at the Cantonment on a ferry to Perth, and for many years the hill was used as a signal station for vessels entering and leaving Fremantle Harbour.

Recommendation:

M71.1 That the Fremantle City Council in consultation with the Department of Conservation and Environment prepare a management plan for the area, giving consideration to the growth and regeneration of local indigenous flora.



1980 LANDS DEPARTMENT ROAD GUIDE — MAP 75 REF. 13.28.
 LANDS DEPARTMENT PUBLIC PLAN No
 PERTH 2000 7-14
 DCE Ref. F 41

Figure 138

M72 SIR FREDERICK SAMSON PARK, SAMSON

The recommended area is situated in a valley a few kilometres north of Coolbellup and comprises Reserve C34233, for Public Recreation, not vested; and lots 578 and 629, freehold land, owned by the City of Fremantle (Figure 139).

The area is affected by sewerage works and more have been proposed.

A strip of vegetation in the south-east of the Park has been cleared. The remainder supports woodland, mainly of jarrah with some tuart and marri and a few understorey trees of banksia species and sheoak. The groundstorey is dominated by blackboy, mixed in places with zamia, and other species include yellow pea, red runner and bacon-and-eggs. The area contains sixty species and presents one of the few opportunities in Fremantle to set aside an area of bush. However, the area is currently under pressure from off-road vehicles and is deteriorating.

The area is currently zoned Public Open Space in the Town Planning Scheme, and is intended for passive recreation.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; and giving priority to passive recreation activities which are compatible with the conservation of flora and fauna.

Recommendations:

- M72.1 That the purpose of Reserve C34233 be amended to Public Recreation and Parkland and that the Reserve be vested in the City of Fremantle.
- M72.2 That the freehold land be added to Reserve C34233.
- M72.3 That the Fremantle City Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

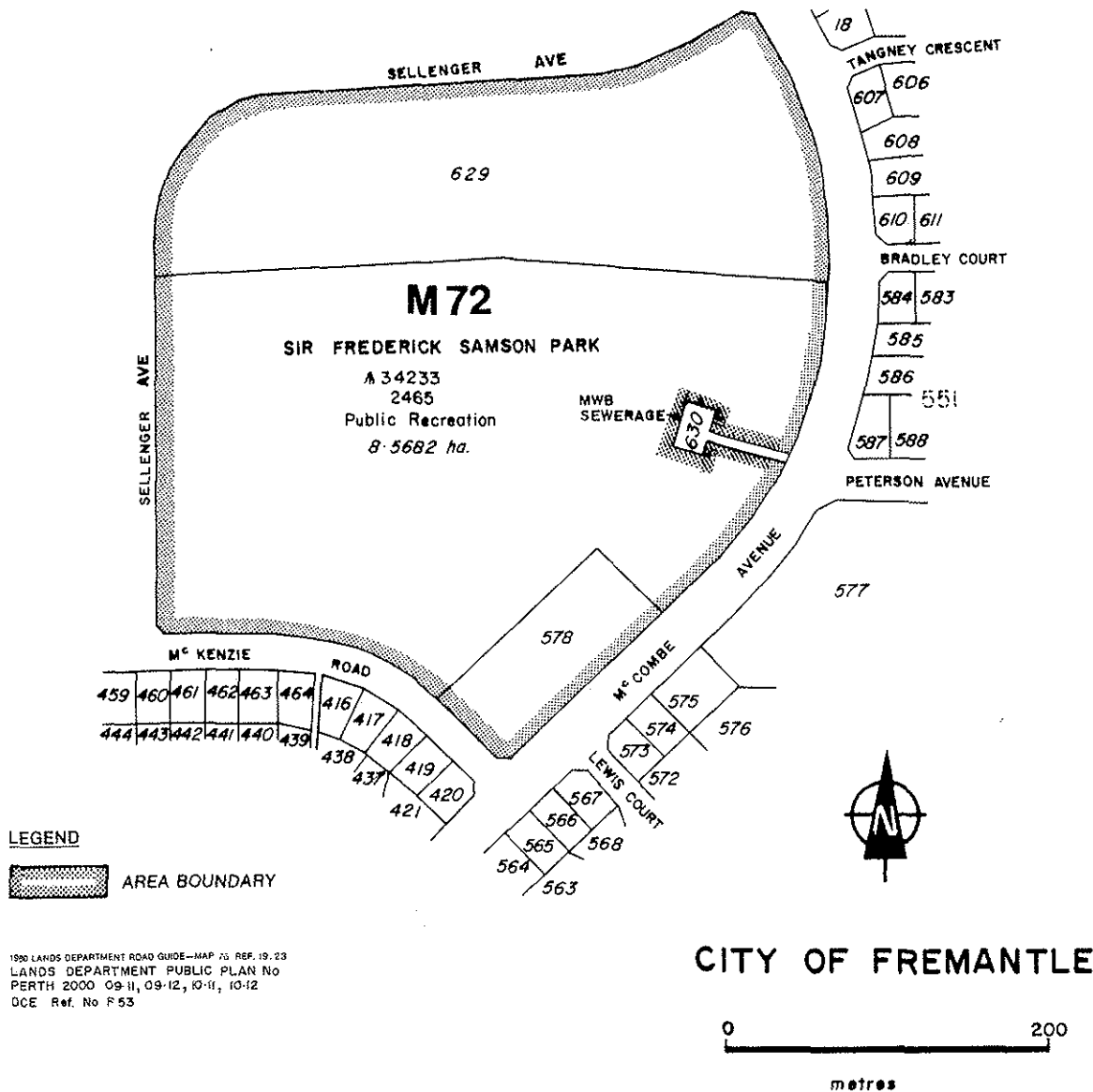


Figure 139

M73 BOORAGOON LAKE

The recommended area is situated immediately north of Leach Highway in the suburb of Booragoon and comprises Reserve G25318, for Public Recreation and Drainage, vested in the City of Melville (Figure 140).

There are drainage and sewerage works in the area.

Unlike most metropolitan lakes, Booragoon Lake's surrounds are well covered with natural vegetation. Round the margin there is a low woodland and low open-forest of flooded gum and paperbark. The centre contains dense thickets of *Melaleuca teretifolia*.

The lake provides a habitat for coot, crane, rail and swamphen. Ducks nest in the lake, and are protected by its good cover of vegetation.

The Melville City Council maintains the lake's water level and does not allow the waters of nearby Blue Gum Lake to flow into Booragoon Lake. This has led to a marked increase in numbers of gilgies, a freshwater crayfish, which in turn has resulted in three species of cormorant nesting permanently at the lake. The area also occupies the lower portion of the drainage basin and any management plan should consider important aspects such as surface runoff and through-flow which could cause damage to the lake's environment.

Recommendation:

M73.1 That the purpose of Reserve G25318 be amended to Parkland, Public Recreation and Drainage.

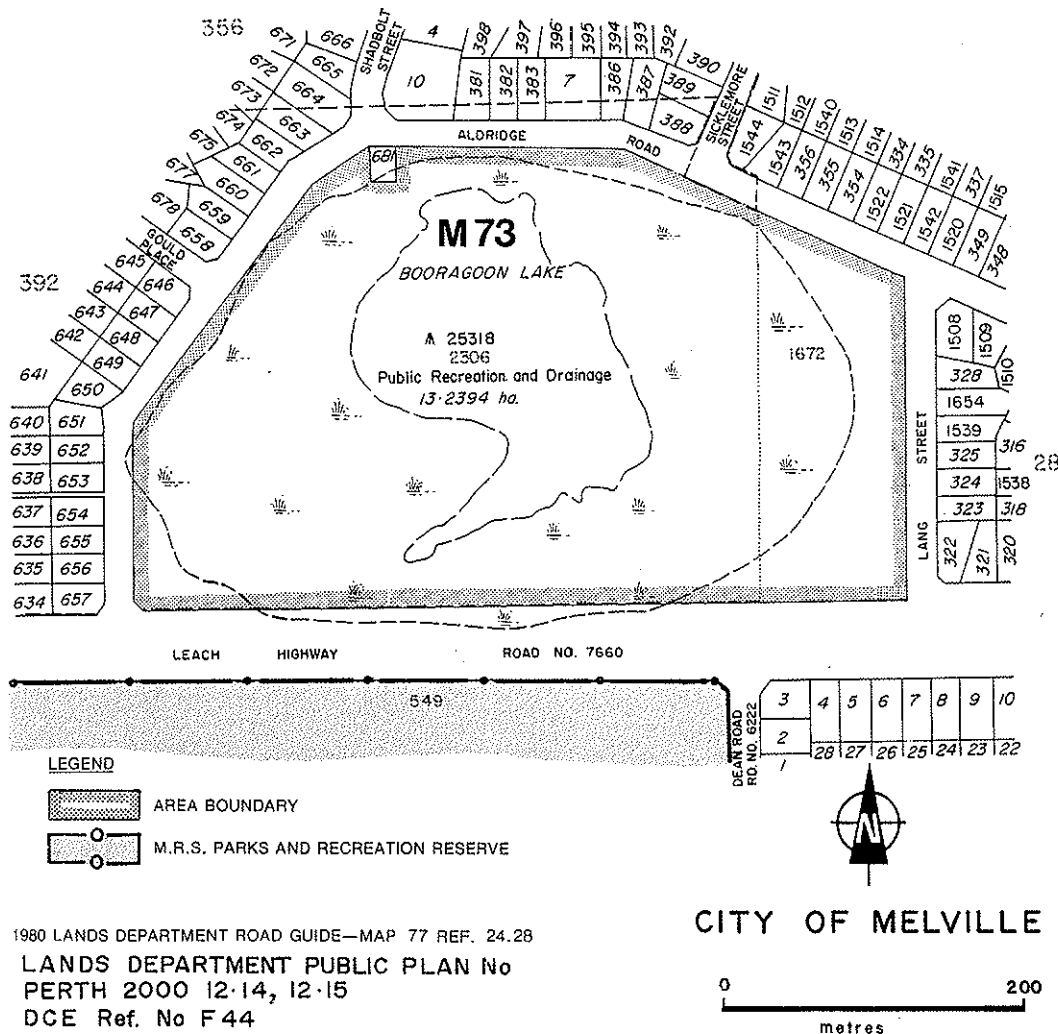


Figure 140

M74 BULL CREEK

The recommended area is situated about 1km south-east of Mount Henry Bridge and comprises Reserve C29130, for Public Recreation, vested in the City of Canning; Reserve C32563, for Recreation, vested in the City of Melville; and vacant Crown land (Figure 141). The western part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is affected by sewerage and drainage works.

Bull Creek flows into the Canning River, lies within two local authorities (Cities of Melville and Canning) and is bisected by Leach Highway. The recommended area forms a natural pocket within the surrounding urban areas, and contains a number of species of native flora which are of high conservation value. It also has a natural drainage function.

Downstream from Leach Highway the creek is hidden in a dense growth of paperbark and flooded gum with shrubs such as *Astartea fascicularis*, *Agonis linearifolia* and bracken fern. Where the creek widens into the Canning River, it is fringed with a dense growth of *Juncus kraussii*. Upstream from Leach Highway the creek occupies a narrow gully with the same species, although the paperbark and flooded gum are less frequent. Beyond Rossmoyne Senior High School other shrubs are present, including *Albizzia lophantha* which is rare on the Coastal Plain. The sandy rises on each side of the creek support a low woodland of banksia, sheoak and jarrah, with an understorey which includes woollybush and spearwood, and a variety of smaller shrubs. On the southern side of the creek, just upstream from Leach Highway, there is a raised swamp with a number of orchid species, and the creek itself contains an uncommon form of *Eriochilus scaber*.

One of Western Australia's largest dragonflies, *Petalura hesperia*, has been collected from the swampy ground alongside Bull Creek. This insect is very rare and has not otherwise been collected for a number of years.

Recommendations:

- M74.1 That the respective purposes of Reserves C29130 and C32563 be amended to Conservation of Flora and Fauna.
- M74.2 That the triangular portion of vacant Crown land abutting the northern boundary of Reserve C32563 be declared a Class C Reserve for Conservation of Flora and Fauna and that the Reserve be vested in the City of Melville.
- M74.3 That preparation of management plans for the whole area be encouraged and that any management plan be done in consultation with the Department of Fisheries and Wildlife.
- M74.4 That both the Cities of Canning and Melville (where appropriate) together with the W.A. Wildlife Authority request Rossmoyne Senior High School and the Anglican Church to recognise the importance of the area for conservation of flora and fauna in the management of their adjacent land.

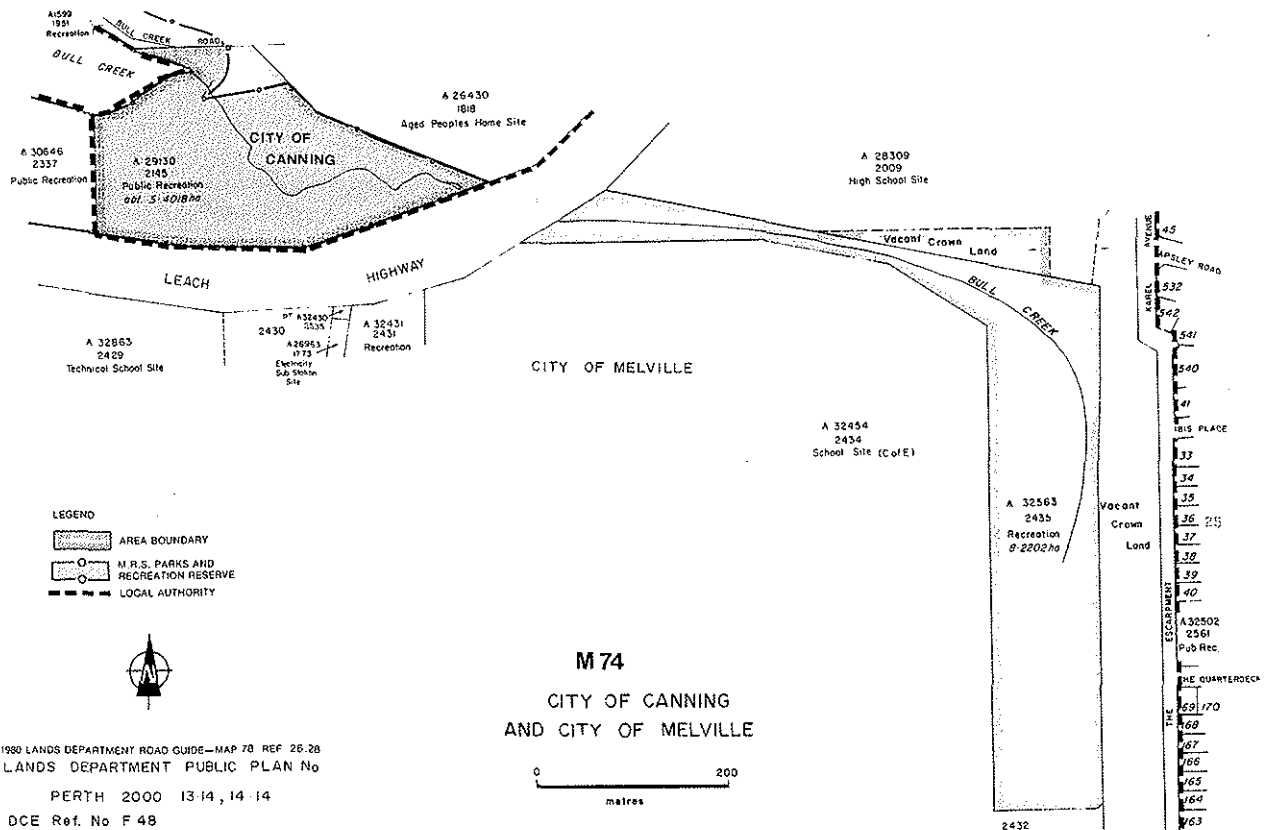


Figure 141

M75 UPPER CANNING AND SOUTHERN RIVERS

The recommended area comprises Canning River and its fringes, from Nicholson Road Bridge to the boundary of the State Forest, together with those parts of the Southern and Wungong Rivers within the City of Gosnells (Figure 142A and B). Much of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme or is being considered for possible future "reserves".

The area is affected by sewerage, drainage and pumping works. More works have been proposed and a pipehead dam may be built below the junction of Stinton Creek. If the dam is built, public access might be restricted by Catchment Zone regulations. The Dampier to Perth natural gas pipeline will pass through the area. The Roe and Beechboro — Gosnells Highways are planned to pass through the area.

The Metropolitan Region Planning Authority has prepared a land use plan for the area between Nicholson Road and Spencer Road. The Rotary Club of Thornlie has coordinated a "Community Riverside Project" for the Thornlie region.

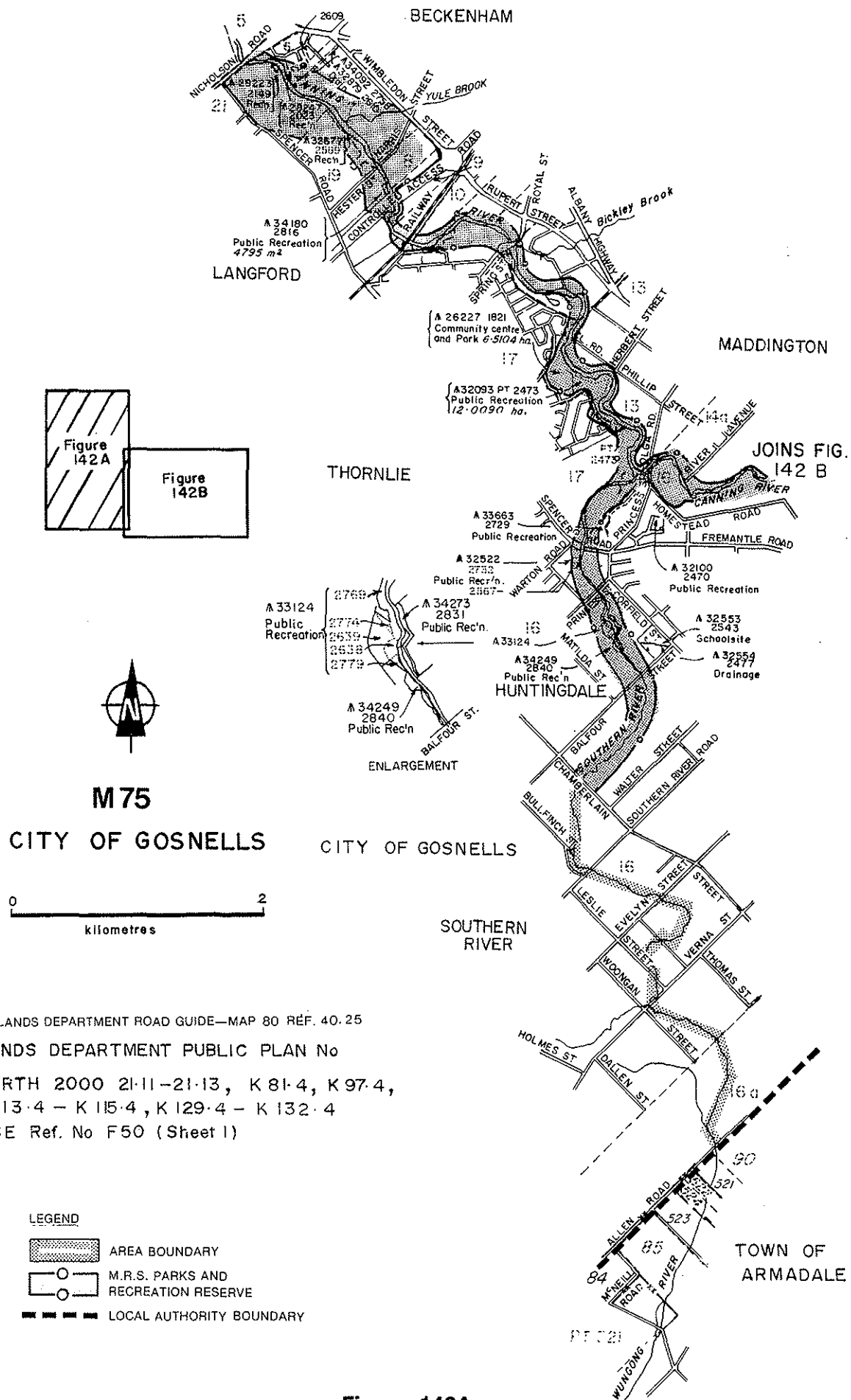
The Canning River is well fringed with flooded gums and paperbark along the west bank between Nicholson Road Bridge and Royal Street, and the east bank is fairly thickly fringed near where Yale and Bickley Brooks join the Canning. Native species have been almost entirely lost from the ground flora. Between the river's confluences with Bickley Brook and the Southern River, both banks are well covered mainly with flooded gum, but also with a few paperbarks. Horses, cattle and sheep have eliminated most of the ground cover, but there are seedlings of flooded gum and the shrub species *Labichea punctata*, *Acacia saligna* and prickly moses. Grasses and weeds abound.

The Southern River, from its confluence with the Canning River to its continuation as the Wungong River, is fairly well wooded with flooded gum on both banks, although the ground flora has been mostly lost. Along the lower reaches there are paperbark and *Acacia saligna* and patches of *Juncus* and *Baumea* species. Along the Wungong River remnants of woodland of jarrah and marri occur in places on the slopes above the banks, with an understorey which includes large clumps of *Cyperus vaginatus* and occasional *Lobelia olata* and *Acacia saligna*. Grasses and weeds abound.

The area, together with M68 (Canning River, Riverton Bridge to Nicholson Road Bridge), constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values, its proximity to Perth's residential areas and the occurrence of regional roads passing through and close by the area. Land tenure and land use are varied, and although portions have been formally designated as open space much of the area comprises land uses whose primary management objectives do not include conservation or recreation. To enhance these values the management structure within the recommended area requires coordination. Important management considerations include encouraging the growth and regeneration of local indigenous flora; only allowing recreation activities which are compatible with the conservation of flora and fauna; preventing vehicular access but providing parking space and access for canoeists; providing pathways along the foreshore; and removal of fences which span the rivers.

Recommendations:

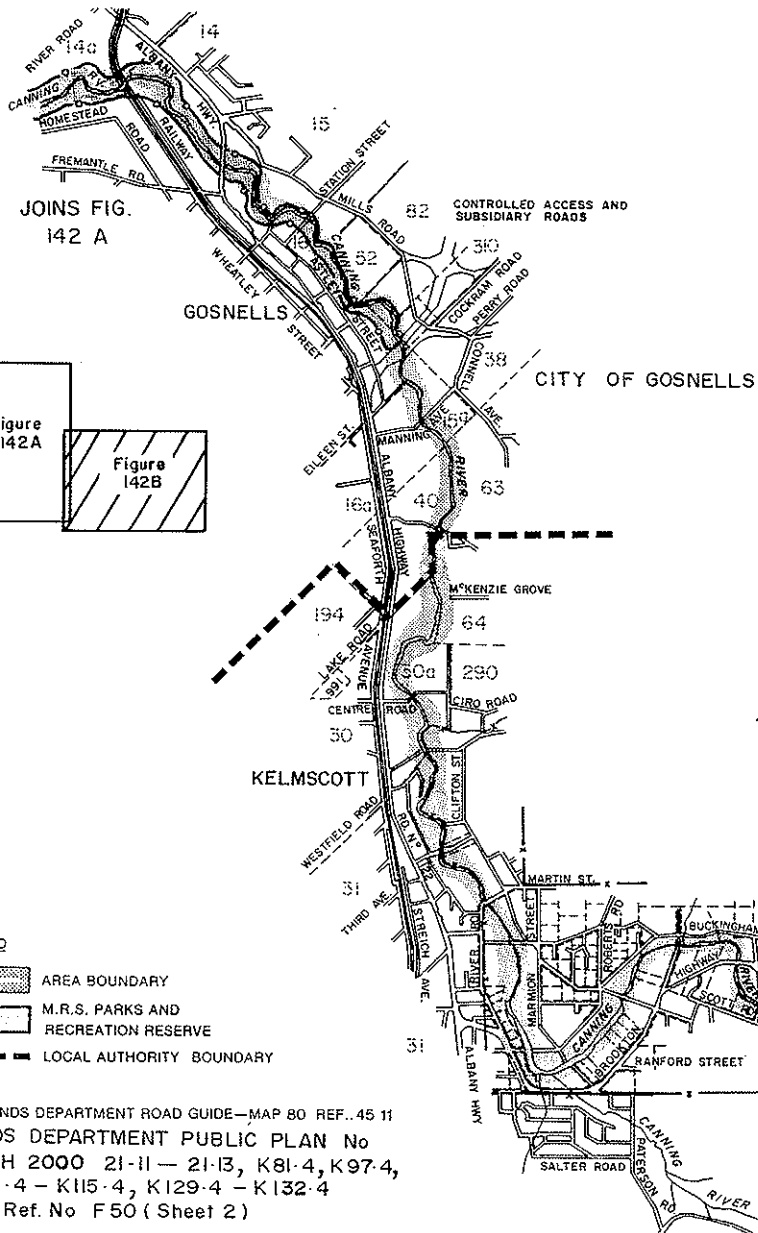
- M75.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M75.2 That the Metropolitan Region Planning Authority's proposal to extend the area "reserved" for Parks and Recreations under the Metropolitan Region Scheme is endorsed.
- M75.3 That the Metropolitan Region Planning Authority's land use plan for that portion of the area between Nicholson Road and Spencer Road is endorsed.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 80 REF. 40.25
 LANDS DEPARTMENT PUBLIC PLAN No
 PERTH 2000 21-11-21-13, K 81-4, K 97-4,
 K 113-4 - K 115-4, K 129-4 - K 132-4
 DCE Ref. No F50 (Sheet 1)

- LEGEND**
- AREA BOUNDARY
 - M.R.S. PARKS AND RECREATION RESERVE
 - LOCAL AUTHORITY BOUNDARY

Figure 142A



M75

CITY OF GOSNELLS and
TOWN OF ARMADALE



TOWN OF ARMADALE

ROLEYSTONE

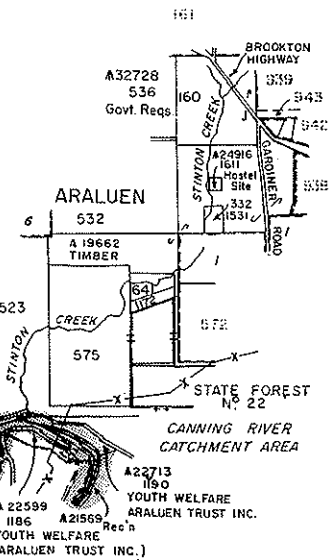


Figure 142B

M76 MARY CARROLL PARK, GOSNELLS

The recommended area is situated on Eudoria Street in Gosnells and comprises Reserves C31993, for Bird Sanctuary and Park, C29919 and C28361, both for Public Recreation, all vested in the City of Gosnells; C35611, C34696 and C35746, all for Public Recreation, not vested; part of Reserve C24998 for School Site, not vested; part of lots 4, 8, 9, 22, 23, 31, 47, 49 and 100, lots 2, 3, 5, 6, 12, 14 to 18, 20, 21, 22, 108, 502 to 506, 959, 964 to 966, and lots 9 and 10 adjacent to Percy Street, lots 10, 11, 12 and part of lot 23 adjacent to Eudoria Street, and lots 10 and 15 adjacent to May Street (Location 16), all freehold land (Figure 143).

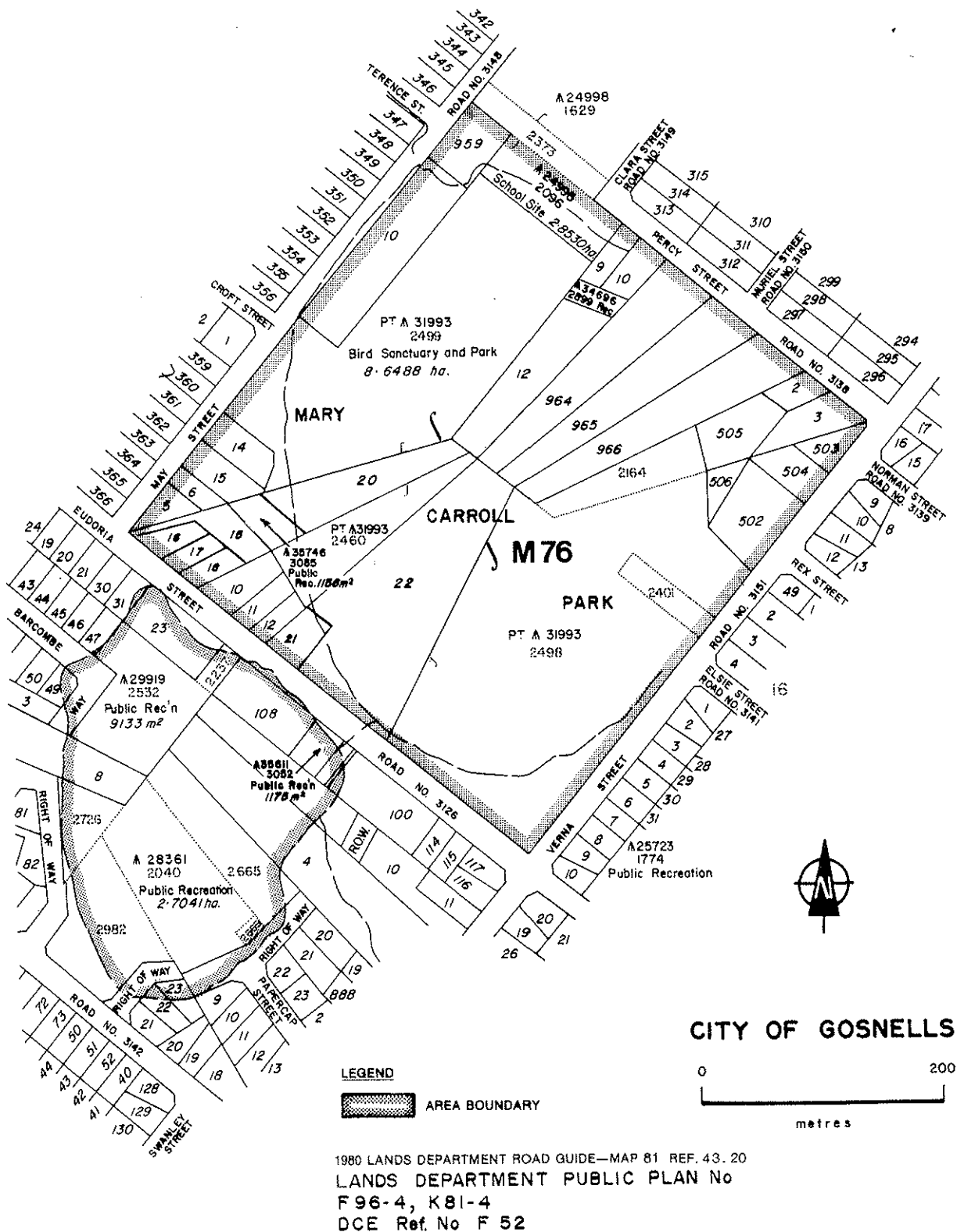


Figure 143

Private groundwater extraction may affect water levels, and there may be pollution by local septic systems. The area may be affected by future sewerage and drainage works.

The lake in Mary Carroll Park is fringed with flooded gum and swamp paperbark, except the southern section which has been developed for parkland and includes a children's playground. In places there are remnants of the transition to woodland of marri and banksia. There is permanent open water in the northern section of the wetland, and the remainder is covered with bulrushes.

There is a seasonal swamp in the land to the south-west of Eudoria Street. It is surrounded by a dense growth of paperbark and flooded gum, which merges into woodland of marri and jarrah. There are bulrushes in disturbed places, and an infestation of salvinia has been reported during several wet seasons. This swamp forms a contrast to the permanent water in Mary Carroll Park. It provides sanctuary for a variety of birds and is a reservoir of wetland flora in the area.

The Gosnells City Council has prepared a concept plan for the Park with advice from the Department of Fisheries and Wildlife, and works have been carried out to improve the area's water-bird habitats and enhance the area's recreational value.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; limiting developments to the southern section of the area; and maintaining water levels in the wetlands.

Recommendations:

- M76.1 That the purpose and vesting of Reserves C31993 and C28361 is endorsed.
- M76.2 That the southern portion of Reserve C24998 be excised and added to Reserve C31993.
- M76.3 That Reserve C29919 be cancelled and its area added to Reserve C28361.
- M76.4 That the Gosnells City Council's concept plan for the area is endorsed.
- M76.5 That ways and means of protecting the conservation value of the freehold land be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

M77 RESERVE C22865, KALAMUNDA, AND RESERVE C20641, BICKLEY

The recommended area is situated about 2km east of Kalamunda and comprises Reserve C20641, for Water Supply, vested in the Minister for Water Resources; Reserve C22865, for Parks and Recreation, not vested; and lot 930 and part of lot 738, freehold land owned by the MRPA (Figure 144). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area is within the Lower Helena River Catchment, a source of water supply. There are SEC lines in the area.

The area is of significant conservation value as it provides a good example of the natural scarp vegetation, which is being reduced in extent through increasing settlement.

Reserve C20641 contains a lateritic ridge. The vegetation is open-forest of jarrah with some marri, bull banksia and sheoak, with an understorey which includes *Grevillea wilsonii*, blackboy and *Isopogon sphaerocephalus*. There are also two uncommon plants, *Hemigenia pritzelii* and an unnamed species of *Thysanotus*.

Reserve C22865 rises from Mundaring Weir Road up a gravelly slope to the general level of the Darling Plateau. The vegetation is open-forest and woodland, dominated by jarrah and marri, with sheoak, bull banksia and a rich understorey of typical forest species, such as couch honeypot, *Hakea amplexicaulis* and *Bossiaea ornata*. The vegetation has been removed in several small areas, two of which have been replanted with pines.

Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora; and restricting recreation activities to areas where the vegetation is already disturbed.

Recommendations:

- M77.1 That the purpose of Reserve C20641 be amended to Parkland and that the Reserve be vested in the Shire of Kalamunda.
- M77.2 That the purpose of Reserve C22865 be amended to Parkland and that the Reserve be vested in the Shire of Kalamunda.
- M77.3 That the Kalamunda Shire Council, in consultation with the Department of Conservation and Environment, prepare a management plan for the area.

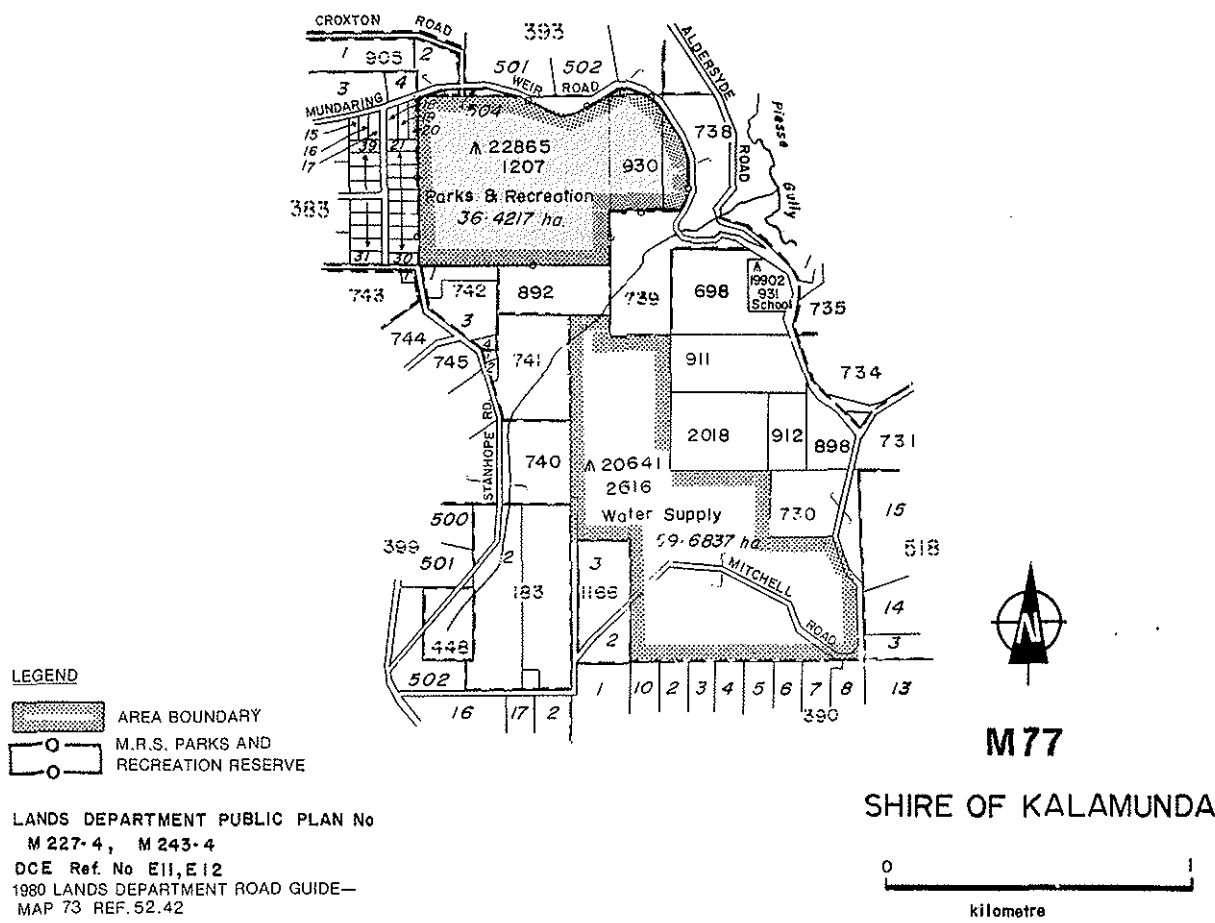


Figure 144

M78 RESERVE C10601, CARMEL

The recommended area is situated on the east side of Canning Road beyond the head of Bickley Road, in Carmel, and comprises Reserve C10601, for Timber, not vested (Figure 145).

The reserve is within the Bickley Brook Catchment. It is affected by organic pollution, and public access may be restricted by Catchment Zone regulations. It may be affected by a proposed dam and pumpback station, and improvements to Canning Road. There are SEC lines in the area.

The Reserve occupies a high lateritic ridge; the vegetation is open-forest of jarrah and marri and is in good condition other than having been disturbed in part by tracks and gravel pits. From the highest point there are views across the Bickley Brook valley to the coastal plain.

Recommendations:

- M78.1 That the purpose of Reserve C10601 be amended to Water, and that the Reserve be vested in the Metropolitan Water Authority.
- M78.2 That the Metropolitan Water Authority prepare a management plan for Reserve C10601, giving consideration to the conservation of flora and fauna.

M79 RESERVE C21172, CANNING MILLS

The recommended area is situated about 3km south of Carmel and comprises Reserve C21172, for Water, vested in the Minister for Water Resources (Figure 145).

The Reserve is within the Victoria Reservoir Catchment, a source of water supply. There are SEC lines in the area, and future improvements to Canning Road may affect it.

The Reserve rises from the bed of Munday Brook to the lateritic capping of the Darling Plateau. Open-woodland of Moonah paperbark and yarri lines the creek and narrow clay flats alongside. Common shrubs are *Agonis linearifolia*, swishbush, *Trymalium ledifolium* and *Acacia alata*, and an interesting herbaceous flora occurs on open, winter-wet areas near the creek. Typical open-forest of jarrah and marri occurs on the higher lateritic slopes.

Recommendations:

- M79.1 That the present purpose and vesting of Reserve C21172, Canning Mills, is endorsed.
- M79.2 That the Metropolitan Water Authority prepare a management plan for Reserve C21172, giving consideration to the conservation of flora and fauna.

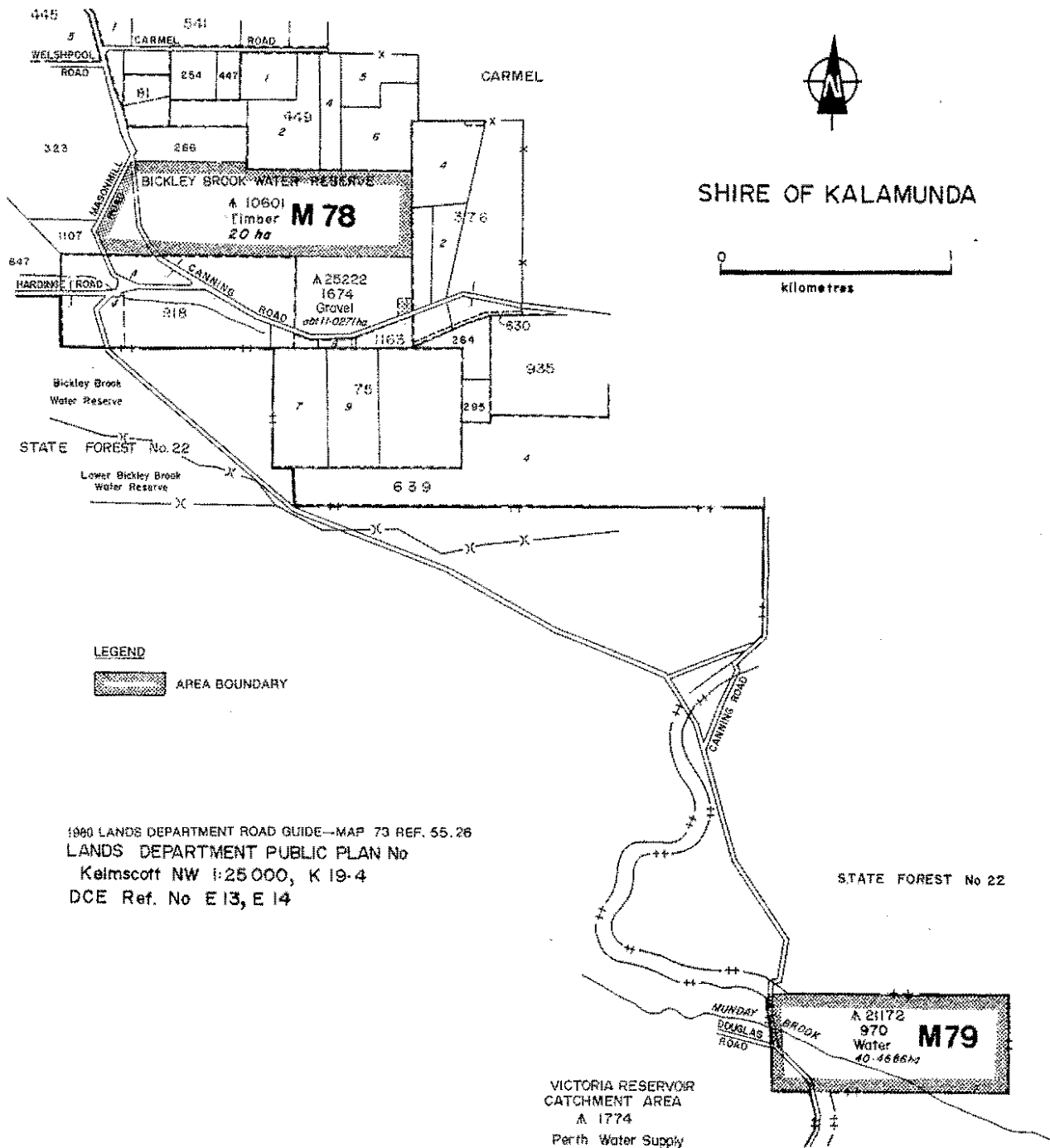


Figure 145

M80 DARLING SCARP

The recommended area extends from Kalamunda Road in the north almost to Wungong Brook in the south. It includes the Scarp face itself, portion of the Darling Range immediately east of the Scarp, and portions of the upper slopes and ridges above the south of the Canning River (Figures 146A to F).

The area runs north-south for a distance of about 24km. It comprises numerous Land Act Reserves, and freehold land, owned privately and by the MRPA. Most of it is 'reserved' for Parks and Recreation under the Metropolitan Region Scheme. Additional land has been proposed for 'reservation' in the Stage A South-East Corridor Report.

In the area from Kalamunda Road in the north almost to Brookton Highway in the south, the land outside the existing Parks and Recreation boundary comprises: lot 8 (Location 222), lot 5 (Location 300), part of Reserve C12083 (near Albert Road), part of Armadale AA lots 453 and 467, Locations 450, 451 and land to the north-west of these, Locations 1, 2, 3, 5, 6 and 23 (near Gosnells Road), the western portion of Location 338 and part of a subdivision south of Armadale AA lots 134 and 135 (adjacent to Brookton Highway) (Figure 146A to D).

Further south, to the east of Armadale and north of Albany Highway is an area often known as the 'Armadale Common', consisting of Reserves C4127 for Common and Timber for Settlers, C25022, C25023, C25024, C25025 and C25026, all for Gravel, all vested in the Town of Armadale; and C33742, for Public Recreation, not vested; lot 4 (Location 31) owned by the MRPA; Part lot 188, lot 189 (Location 31), lots 3 and 91 (Location 631), and Locations 1357 and 2004, privately owned freehold land (Figure 146F).

Further east from the 'Armadale Common' area described above is an area consisting of the slopes on either side of Churchman Brook. This area comprises lots 10 and 50 (Location 31), part of Part lots A and 1, lots 1, 3, 4, 10, 11, 12, 36, 37, 40, 41 and 103 and part of lots 1 and 100 (Location 32), all owned by the MRPA; and lot 4 and part of lot 1 (Location 31), part of lot 1 (Location 681), freehold land mostly owned by the MRPA (Figure 146E).

To the south of the 'Armadale Common', in Bedforddale, is Bungendore Park. This area comprises Reserves A4561, for Parklands, vested in the Town of Armadale; C10433 for Gravel, not vested; and vacant Crown land (Figure 146F).

There are several SEC powerlines in the area, and more are proposed. The area may also be affected by proposals for a gas pipeline and by the upgrading of Welshpool Road. Emmaus Christian Primary School has been built on land adjacent to Bungendore Park. Portion of the area is within the Alcoa Mining Lease but has no potential for bauxite mining. There are deposits of white clay immediately south of Bungendore Park. Portions of the Scarp are affected by prime aggregate quarries, the aggregate being important for concrete production, building and road construction. An exchange of land owned by a quarrying company and Crown land (portions of Reserves 11681 and 7415) has been negotiated. The Darling Escarpment Aggregate Resources Committee, a sub-committee of the MRPA's Basic Raw Materials Resources Committee, has investigated quarrying on the Scarp and completed its Report in 1982.

The City of Gosnells is currently preparing a recreation management plan for the area in the vicinity of the Readymix quarry.

The MRPA, following its Stage A South-East Corridor Report, is 'reserving' western and southern extensions to Bungendore Park to include Wungong Gorge, comprising Locations 49, 54, 59, 62, 93, 94, 97, 98, 144, 198 to 202, 239, 291, 307, 538, 553 and 632, all freehold land. This 'reservation' would enhance the value of the Scarp as a potential regional park, as the valley floor would provide an area suitable for more intensive recreational use than is desirable elsewhere along the Scarp.

The Scarp is the most prominent landform in System 6, rising to a maximum height of 300m. It consists of granite outcrops, ridges, valleys supporting winter-flowing creeks, several 'hanging' swamps, dolerite dykes, laterite screes and the laterite capping of the western edge of the Darling Range.

Most of the Scarp flora is represented in the areas described above. There are open-forests of jarrah and marri, marri and wandoo woodlands, small areas of paperbark, and flooded gums along the creeks. There is a stand of the very rare salmon white gum *Eucalyptus lane-poolei* above the Sixty Foot Falls on Ellis Brook. The second storey includes such species as bull banksia, rock sheoak and parrot bush. Bungendore Park supports a rare species of dryandra, *Dryandra praemorsa*. Throughout the area are blackboy and zamia as well as several stands of black gin. The heath and groundstorey are very rich in species, which include hairy jugflower, acacia, Wilson's grevillea, *Grevillea endlicheriana*, and an unnamed species of buttercup which is restricted to the top of the Scarp east of Perth. There is a variety of herbaceous plants, including orchids, trigger plants, lilies and small sedges. Bracken is common on the southern slope of Bungendore Park, above Wungong Gorge.

The most important areas floristically are the spur and valley to the south of Crystal Brook, the northern side of Bickley Valley, the Ellis Brook Valley above the Sixty Foot Falls and the spur to the north of this valley, the valley through which Mills Road passes, and the western and southern slopes of Bungendore Park. These areas all require particularly careful management, with the control of bush fires requiring special attention, and they should be managed primarily for conservation, with some provision (e.g. narrow walking paths) for recreation activities. The impact of trail bikes is currently a problem.

The high recreation value of the area stems from the variety of activities for which it is attractive. These include walking, picnicking, sightseeing, nature study, rock climbing on both natural and man-made rock faces, and the use of trail bikes in disused quarries. Currently popular areas include Lesmurdie Falls and the Bickley Valley. The rock faces at Churchman Brook provide a valuable resource for rock climbers, both in rescue training and for recreation. The portions of the Scarp under consideration are particularly important in that they provide an almost continuous north-south open space link, adjacent to major residential areas, and within easy access by major roads and by public transport.

Scenically, these portions of the Scarp contrast with other areas which have been partly cleared, developed for residential use, or which are dissected by east-west or north-south roads. The Scarp forms a natural skyline behind much of the city, and provides panoramic views over the city and the Coastal Plain and even as far as Garden Island. The 'Armadale Common' area provides a visual backdrop to the rural holdings of the valleys to the north and south. From the ridges and spurs along the Scarp there are attractive views into adjacent valleys, for example, Ellis Brook and the Sixty Foot Falls, Mills Road Valley, the Canning River and Churchmans Brook, Neerigen and Carradine Brooks, and the rugged Wungong Gorge.

Although much of the vegetation is in its natural state, ground flora has been disturbed or destroyed in places, as a result of clearing, grazing, gravel extraction and rubbish disposal. However, revegetation of some of the gravel pits in Bungendore Park has already begun. Some of these sites may be suitable as picnic areas.

The recommended area in itself constitutes open space of regional significance and also contributes to the larger area of open space of regional significance extending along the Darling Scarp (see Figure 1, Chapter 4) because of its high conservation, recreation and scenic values and its proximity to Perth residential areas. Not all land in the area has these values as primary management objectives and to ensure their enhancement, the management structure requires coordination. Important management considerations include: concentrating recreational activities and vehicular access away from floristically important localities, such as at the top and base of the Scarp; ensuring that vehicular access does not take the form of a continuous north-south route along the Scarp; excluding roads entirely from the valley south of Crystal Brook and from Ellis Brook Valley, and ensuring that no further roads are constructed in the Bickley Valley and the Mills Road Valley; allowing only non-motorised activities off any sealed roads; developing narrow walking paths but not horse riding trails in floristically important areas; developing disused quarries and gravel pits either for recreational use (e.g. picnic or rock climbing sites) or for parkland through rehabilitation of their native flora; and ensuring that no more gravel is extracted from Reserve A4561. Important quarry management considerations include: the high conservation, recreation and scenic values of this portion of the Darling Scarp; the comparative cost and marketability of aggregate quarried elsewhere on the Darling Scarp; the need to limit the visual impact of quarrying and other developments; and rehabilitation of quarry sites after extraction is complete.

Recommendations:

- M80.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M80.2 That the Metropolitan Region Planning Authority consider 'reserving' those portions not already 'reserved' for Parks and Recreation under the Metropolitan Region Scheme.
- M80.3 That the vacant Crown land adjacent to Reserve A4561 be declared an A Class Reserve for Parklands and that the Reserve be vested in the Town of Armadale.
- M80.4 That the operators of quarries be required to produce assessments of the environmental implications of existing and future quarries and plans for their rehabilitation and restoration.
- M80.5 That roads be excluded entirely from the valley south of Crystal Brook, and the Ellis Brook Valley, and that no further roads be constructed in the Bickley Valley and Mills Road Valley.

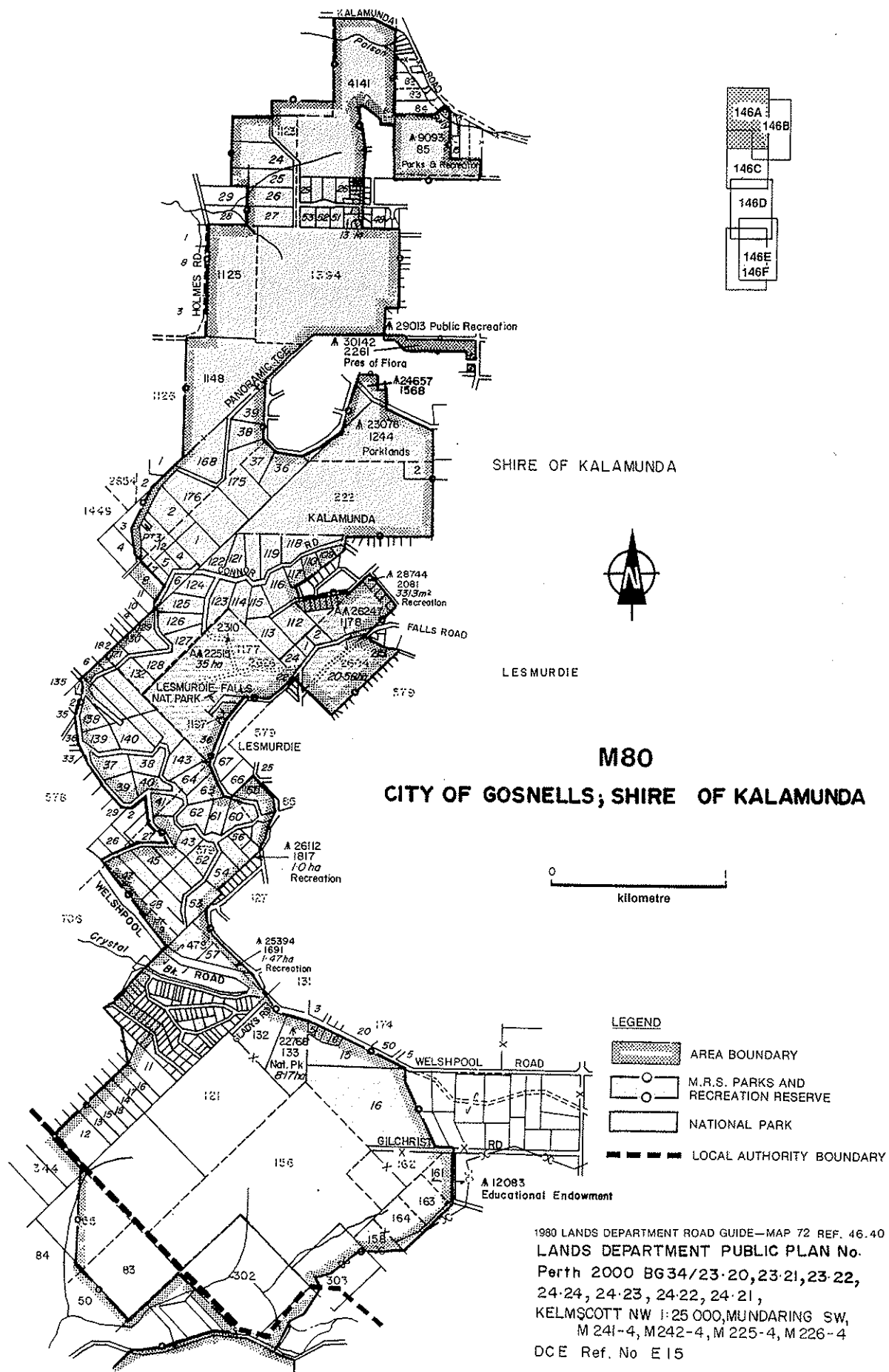


Figure 146A

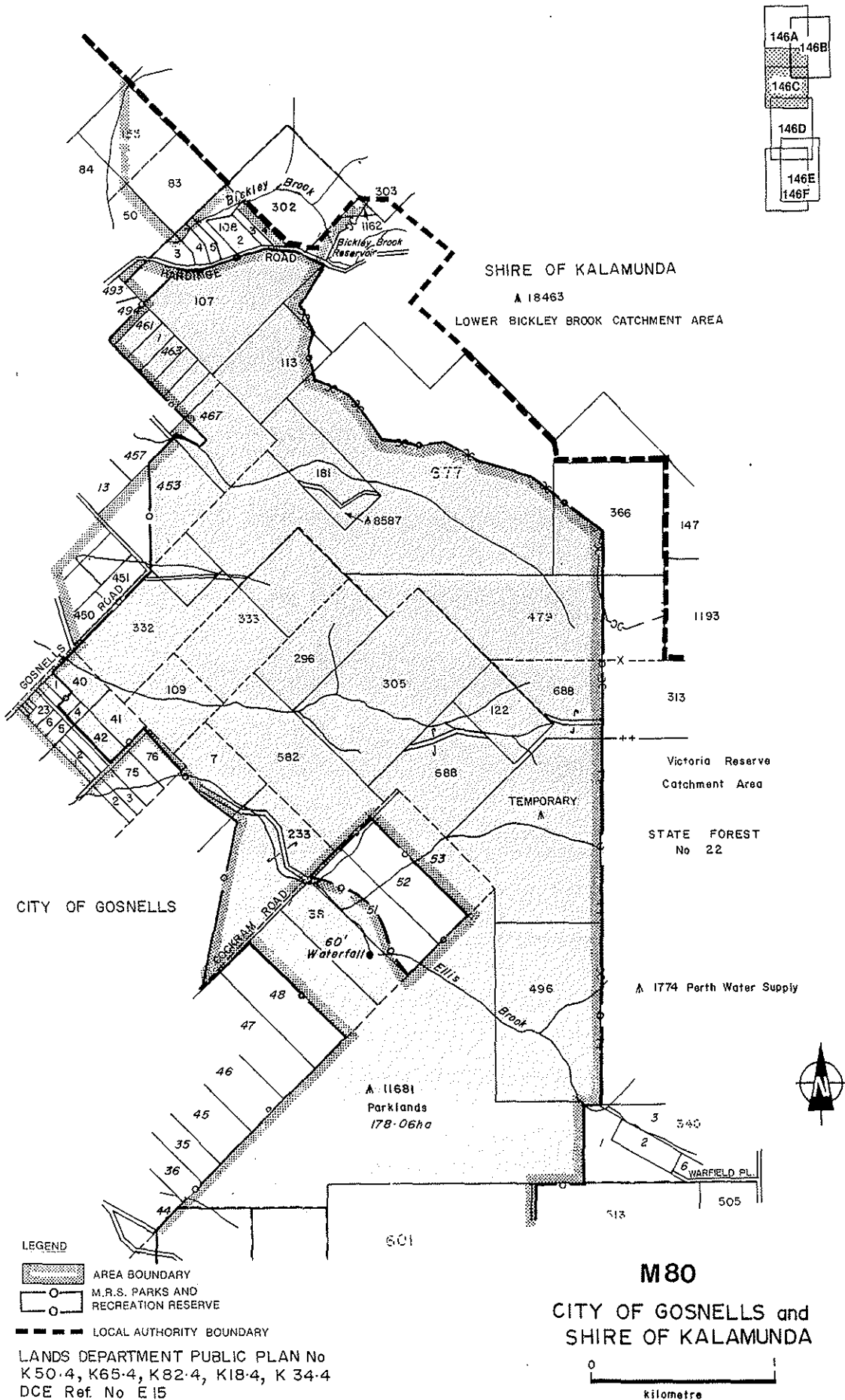
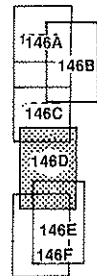
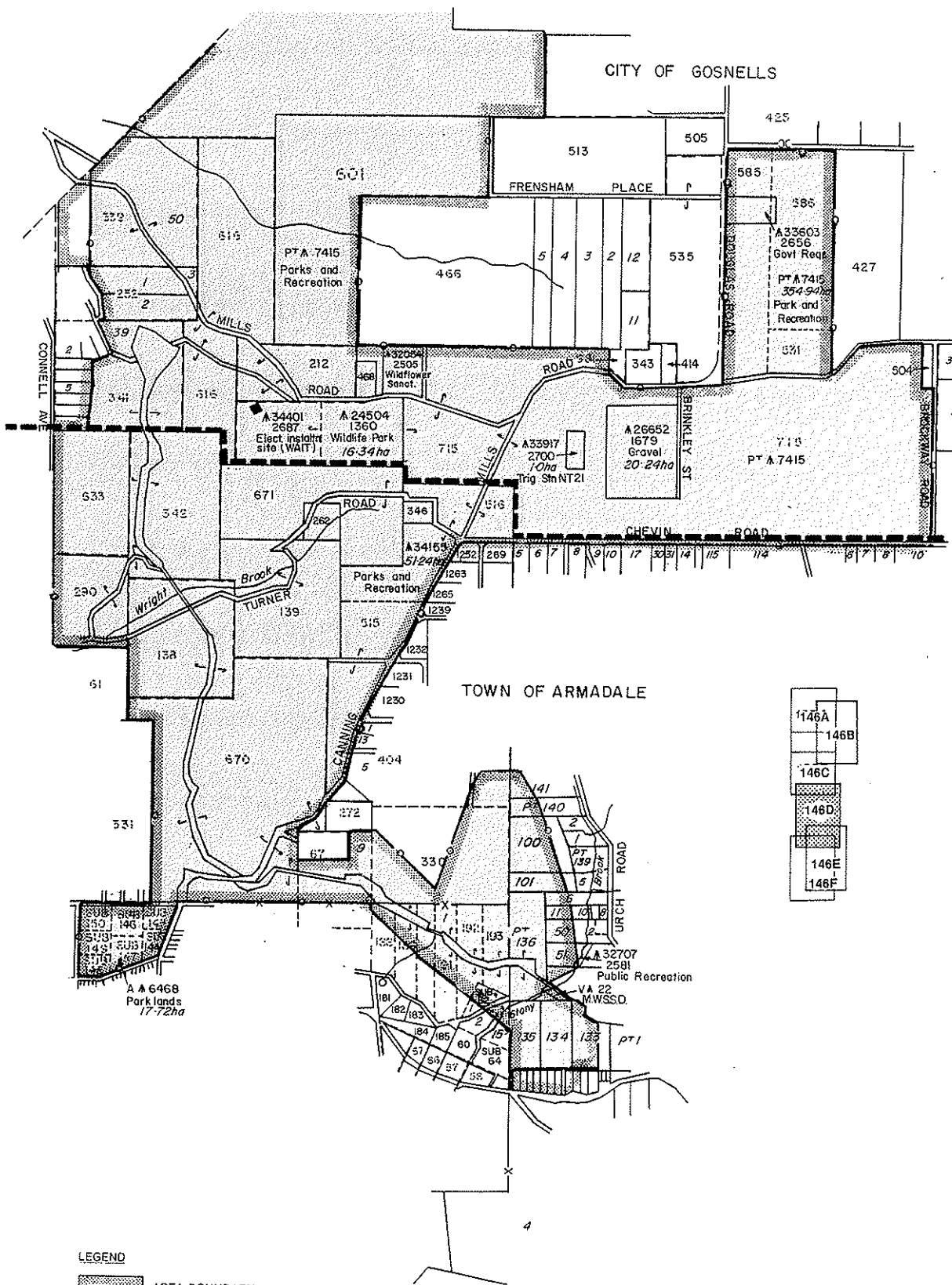


Figure 146C



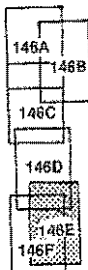
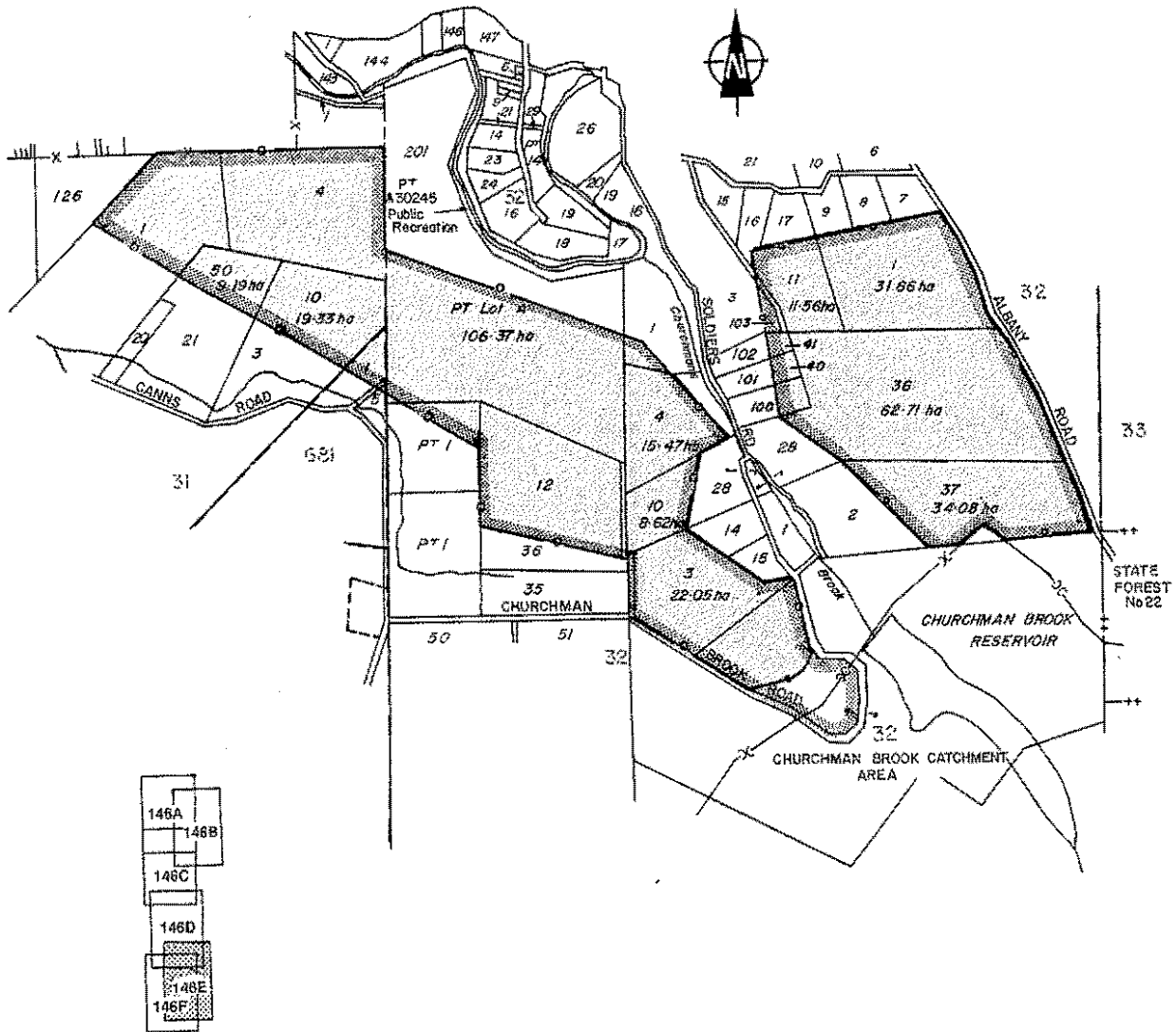
- LEGEND**
- AREA BOUNDARY
 - M.R.S. PARKS AND RECREATION RESERVE
 - LOCAL AUTHORITY BOUNDARY

M80
CITY OF GOSNELLS
TOWN OF ARMADALE





LANDS DEPARTMENT PUBLIC PLANS N°
 K81-4, K82-4, K97-4, K98-4, K99-4, K113-4,
 K114-4 and KELMSCOTT NW 1:25000
 DCE Ref. No E15
 1980 LANDS DEPARTMENT ROAD GUIDE—MAP 92 REF. 48.18

Figure 146D



LEGEND

-  AREA BOUNDARY
-  M.R.S. PARKS AND RECREATION RESERVE

1980 LANDS DEPARTMENT ROAD GUIDE—MAP 102 REF. 50.08
 LANDS DEPARTMENT PUBLIC PLANS N°
 K 131-4, K 130-4, K 146-4 and KELMSCOTT
 S.W. 1:25000
 DCE Ref. No E18


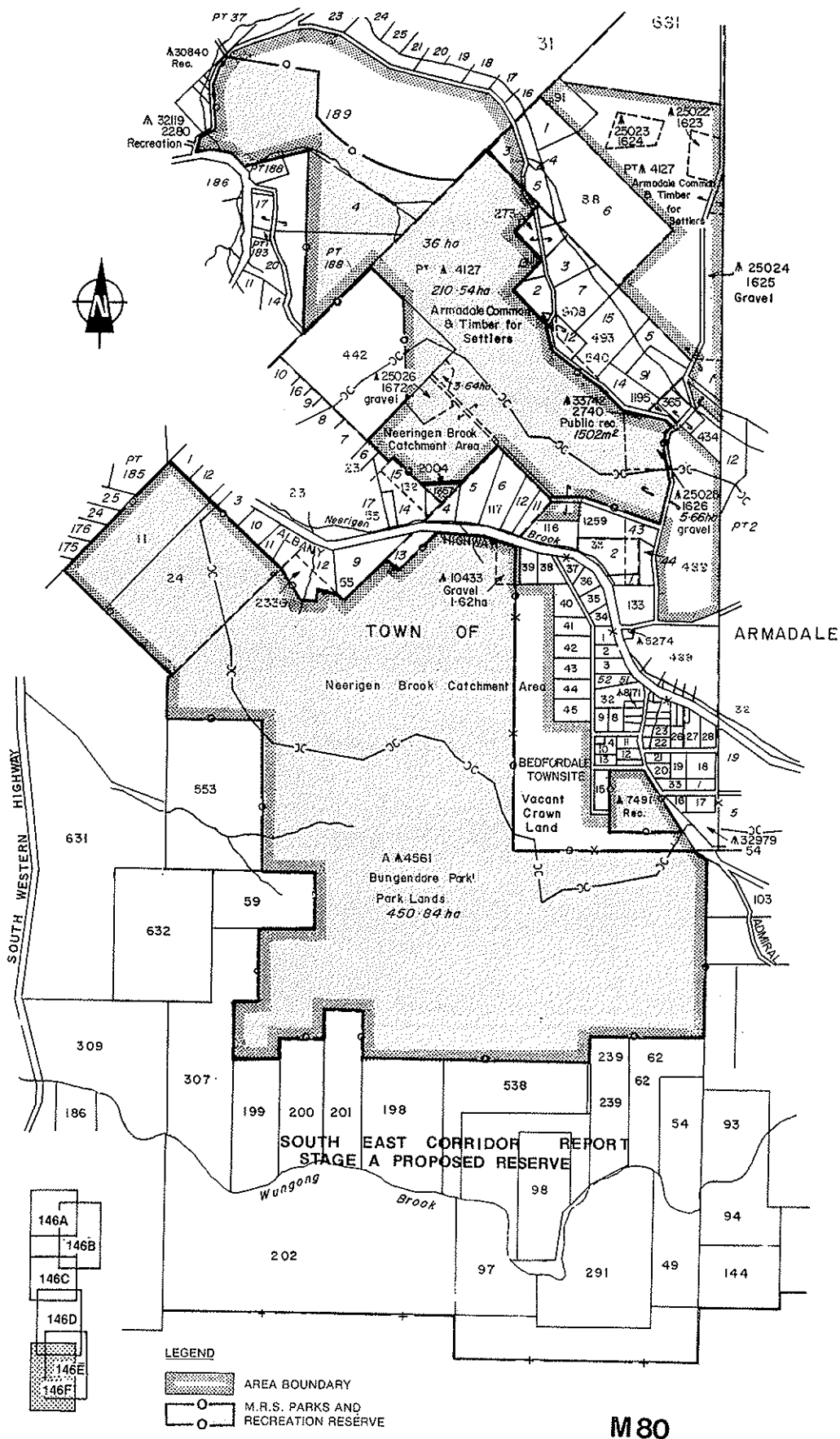
M 80
TOWN OF ARMADALE

 kilometres

Figure 146E



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 102 REF. 46.06
 LANDS DEPARTMENT PUBLIC PLAN No
 K 161-4, K 193-4
 DCE Ref. No E 17

M80
TOWN OF ARMADALE
 0 1
 kilometre

Figure 146F

M82 RESERVE C5704

The recommended area is situated to the east of Wungong Brook dam site and south of Bedfordale, and comprises Reserve C5704, for Timber, not vested (Figure 148).

The Reserve is within the Wungong Dam Catchment.

It is in a dissected area of the Darling Plateau with several streams passing through it. The predominant vegetation is open-forest of jarrah and marri which is typical of the region.

The creek bank vegetation is an outstanding feature. It consists of a fringe of low-woodland of Moonah paperbark and swamp banksia with a dense understorey. *Boronia molloyae*, a northern outlier of a species found mainly near the south coast, is common. Near the creeks there are several granite outcrops with their associated vegetation, and there are some excellent stands of black gin on the slopes.

A number of species in the area are fire-sensitive and need to be protected. Timber is currently being cut on the higher slopes of the Reserve. Some small areas in the northern end have been cleared, apparently for gravel extraction.

Recommendations:

- M82.1 That the purpose of Reserve C5704 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the Metropolitan Water Authority.
- M82.2 That the Metropolitan Water Authority consult the Forests Department in regard to possible management of the Reserve by the Forests Department, and that consideration be given to not extending timber cutting downhill toward the valley floor.

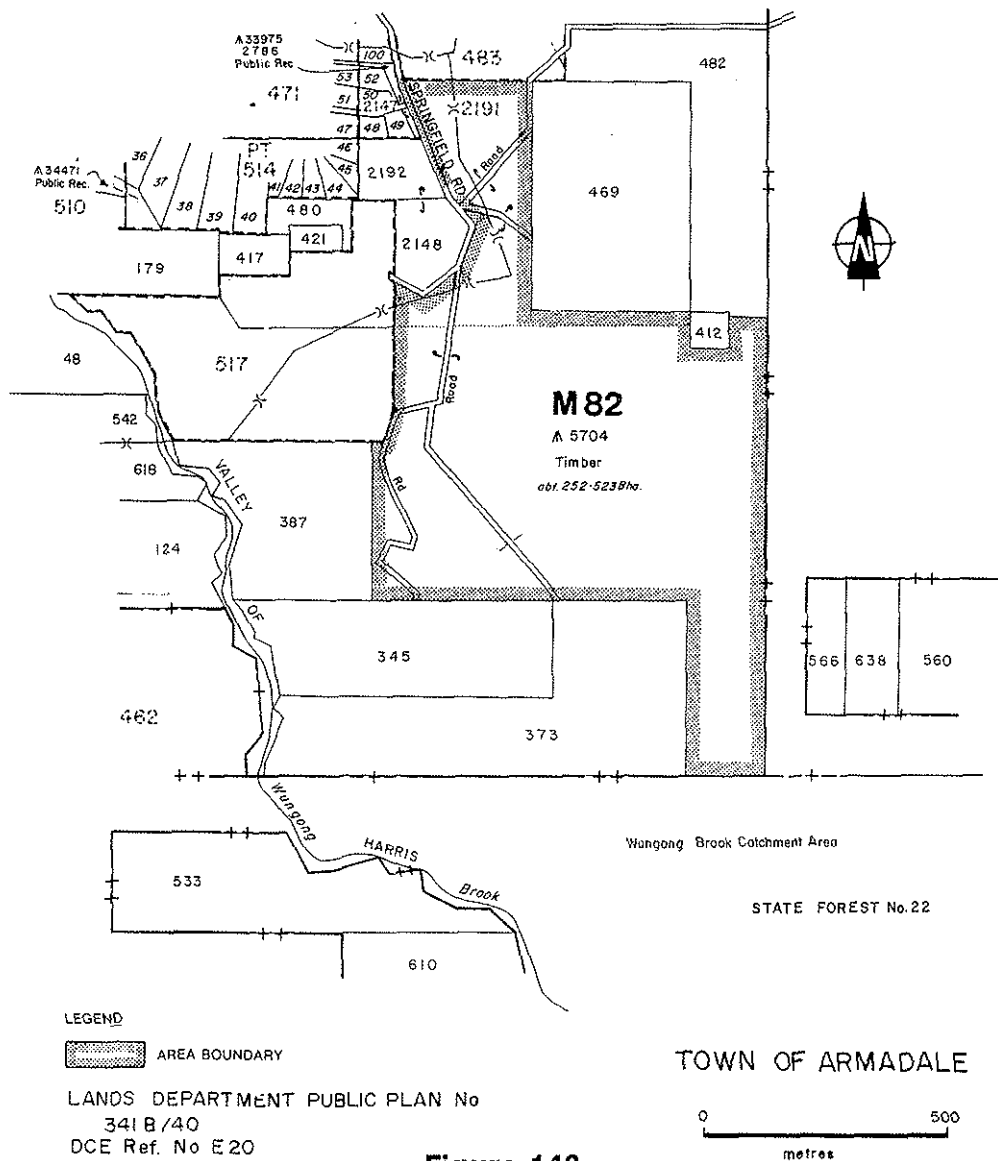


Figure 148

M83 RESERVE C2457, MUNDIJONG

The recommended area is situated about 3km south of Byford and comprises Reserve C2457, for Parkland and Recreation, vested in the Shire of Serpentine-Jarrahdale (Figure 149).

The Reserve is within a potential artesian intake area and any MWA groundwater extraction may affect water levels. The area has potential for clay, loam and sand, but there are no existing claims.

The area contains alluvial soils, little of which is represented in conservation reserves, this being the largest area of its type available for reservation on the Coastal Plain. A low open-forest covers the Reserve, with an upper storey of jarrah, woody pear, slender banksia and bull banksia. The understorey is quite diverse and includes some species that are not common on the Coastal Plain, examples being *Astroloma stomarrhena*, *Gompholobium knightianum* and *Pronaya elegans*.

Recommendation:

M83.1 That the purpose of Reserve C2457 be amended to Conservation of Flora and Fauna, and that the Reserve be vested in the W.A. Wildlife Authority.

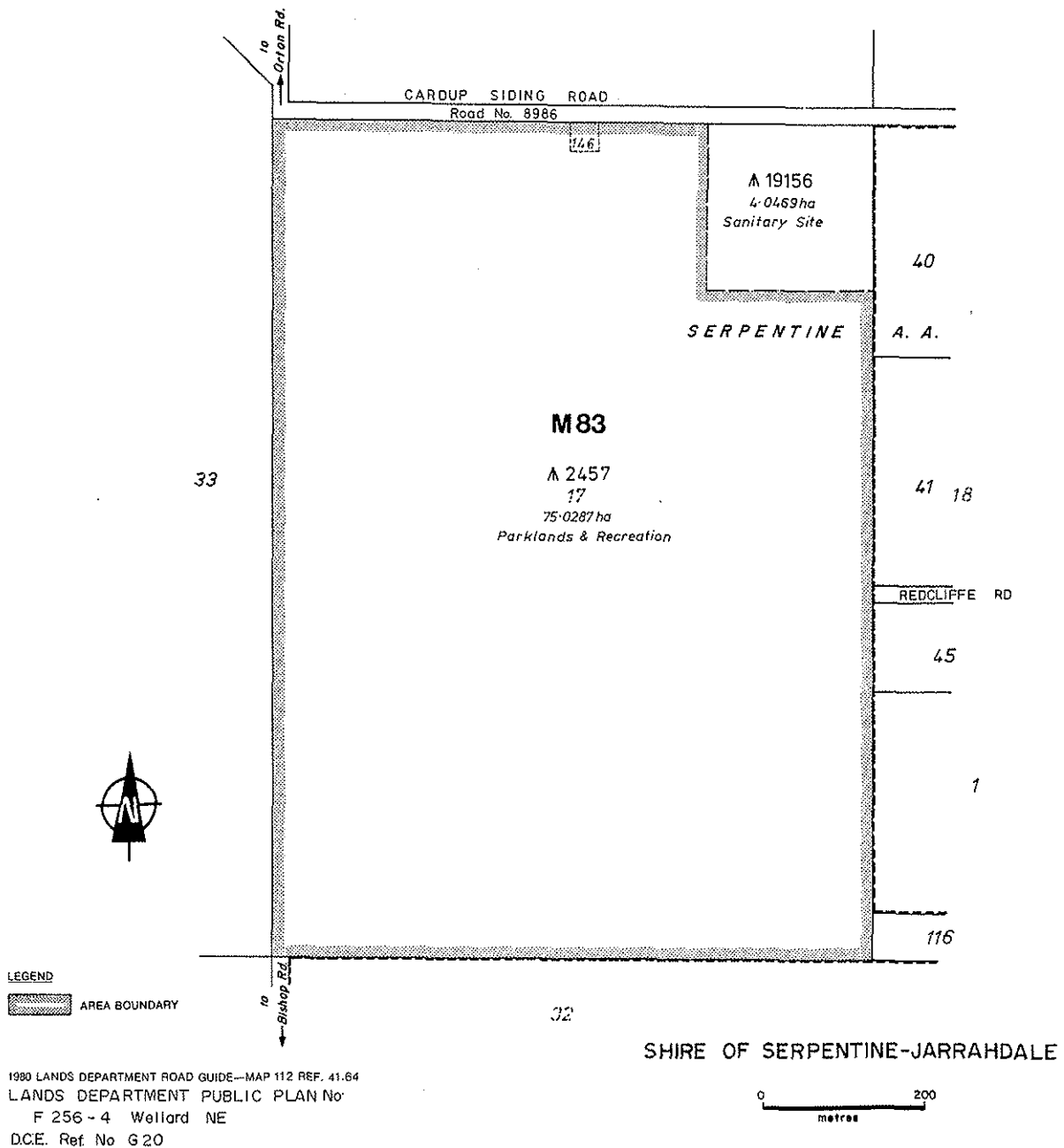


Figure 149

M84 GOORALONG MANAGEMENT PRIORITY AREA

The recommended area is situated about 40km south-east of Perth and most of it comprises State Forest, being Gooralong Management Priority Area. The management priority as designated in the Forests Department Working Plan No. 87 is conservation of flora, fauna and landscape. Also included in the recommended area are Reserves B988, for Rockingham Jarrah Timber Company, not vested, and B990, for Camping, vested in the Shire of Serpentine-Jarrahdale; Cockburn Sound Locations 178, 306, 333 and 624, freehold land held in the name of the Crown; and Cockburn Sound Location 68, privately owned freehold land (Figure 150).

The MPA is within the Gooralong Brook Water Reserve. A dam is to be built on the Serpentine River below the junction of the Carralong and Gooralong Brooks and public access may be restricted by Catchment Zone regulations. The area is within the Alcoa Mining Lease but has little potential for bauxite. Army training has taken place within it.

The MPA is important in conserving vegetation types which are poorly represented in other reserves in the high rainfall areas as a result of clearing and damming.

Upland vegetation includes open-forest of jarrah and marri, with an understorey of bull banksia and snottygobble. The valley consists of open-forest of jarrah and marri with some yarri and a shrub understorey. Wandoo woodlands occur on the Darling Scarp. Some of the area within the MPA is uncut and relatively undisturbed.

The area is extensively used for recreation such as bushwalking and camping.

This area, together with Serpentine National Park (M85), Karnet MPA (M86) and Serpentine MPA (M87), which includes freehold land held privately and by various Government agencies, Land Act Reserves (including a National Park), State Forest and water catchment areas, constitutes open space of regional significance (see Figure 1, Chapter 4). It also contributes to the larger area of regional open space extending along the Darling Scarp. The area is of regional significance because of its high conservation and recreation values and its proximity to Perth residential areas and nearby rural settlements. Not all the land under the various tenures has conservation and recreation as primary management objectives and to enhance these values the management structure, together with that of M85, M86 and M87, requires coordination. Important management considerations for the area include the need for fire protection, allowing only those recreation activities which are compatible with the conservation of flora and fauna, and the phasing out of army training programmes.

Recommendations:

- M84.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M84.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Gooralong Management Priority Area.
- M84.3 That Reserve B990 be cancelled and its area added to State Forest to be managed as part of Gooralong Management Priority Area.
- M84.4 That Reserve B988 be cancelled and its area added to State Forest to be managed as part of Gooralong Management Priority Area.
- M84.5 That the freehold land held in the name of the Crown be managed by the Forests Departments as if part of Gooralong Management Priority Area.
- M84.6 That, if Recommendation M84.2 is implemented and if alternative camping facilities are required, the Forests Department consult the Serpentine-Jarrahdale Shire Council and other relevant authorities for the purpose of land exchange.
- M84.7 That the portion of Gooralong Management Priority Area situated between Cockburn Sound Locations 361 and 436, be excised and added to Reserve A28862 (see M85).

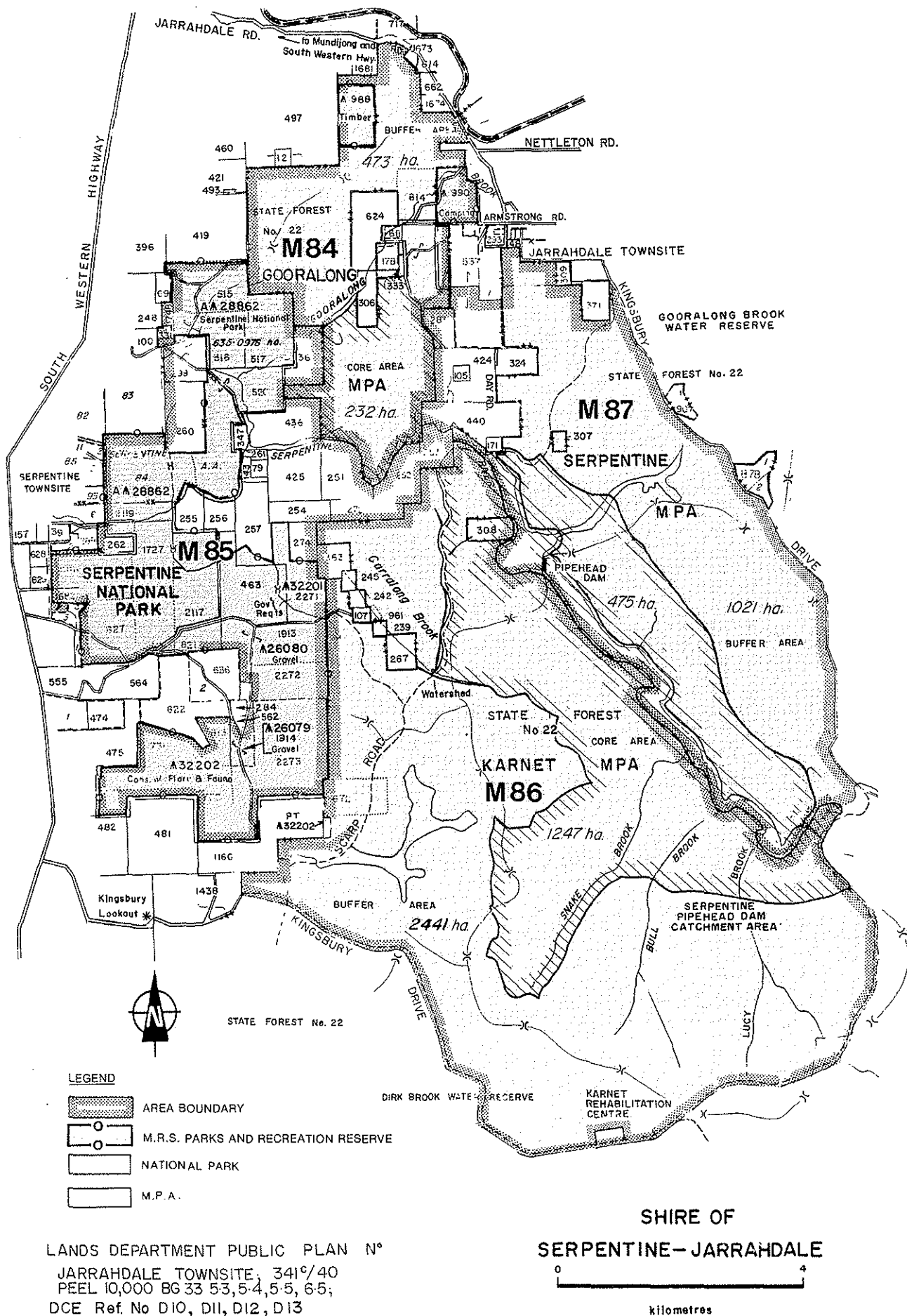


Figure 150

M85 SERPENTINE NATIONAL PARK

The recommended area is situated about 45km south-east of Perth and comprises Reserve A28862, for National Park, vested in the National Parks Authority; Reserves C26079 and C26080, for Gravel, both vested in the Shire of Serpentine-Jarrahdale; Reserves C32201, for Government Requirements and C32202, for Conservation of Flora and Fauna, both not vested; Cockburn Sound Locations 79, 143, 251-54, 256, 257, 261, 272, 347, 425, 436 and 463, freehold land owned by the Metropolitan Water Authority; Cockburn Sound Locations 255, 260, 262, 299, 331 and 1748, privately owned freehold land; Cockburn Sound Location 361, freehold land held in the name of the Crown; and Cockburn Sound Location 463, freehold land owned by the SEC (Figure 150). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme, and that part of the area situated on the face of the Darling Scarp is included in an area indicated by the MRPA to have significant landscape merit, which should eventually be "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Most of the northern section of the area is within Gooralong Brook Water Reserve. The area may be affected by a proposed pipehead dam just below the confluence of Carralong and Gooralong Brooks on the Serpentine River. This would inundate Cockburn Sound Locations 79, 143, 251, parts of 254, 257, 347, 425 and 436, and a historic homestead. Public access would be restricted by Catchment Zone regulations. The area may be affected by an SEC combined water supply and pumped storage installation, to be sited south of the proposed pipehead dam. The area is within the Alcoa Mining Lease, but has little significance for bauxite mining. The Serpentine — Jarrahdale Shire Council is currently extracting gravel from Reserve C26080.

The area consists of deeply incised lateritic uplands. It is drained by the Gooralong Brook and the Serpentine River. Two rare species of trees occur in the National Park: butter gum on the slopes and salmon white gum at the foot of the Darling Scarp.

The upland vegetation includes open-forest of jarrah and marri, with an understorey of bull banksia and snottygobble. The valleys contain open-forest of jarrah and marri with some yarri and a shrub understorey. Wandoo woodlands occur on the Darling Scarp. Dieback has been recorded, mainly in the gullies.

Cockburn Sound Location 262, which adjoins the Park, provides spectacular views and supports extensive stands of rock sheoak.

The National Park is small and has lengthy and indented common boundaries with cleared and uncleared freehold land. Management difficulties exist as a result of frequent uncontrolled fires, straying stock and the invasion of exotic plant species.

Since the National Parks Authority's manpower is limited, reduction of the ratio of Park boundary to area, through inclusion of adjacent reserves and freehold land in the Park, would make the area more viable as a National Park.

Because of its accessibility and attractiveness, the area is important for recreation and education. Recreational use is currently focussed on the Serpentine Falls, a popular swimming spot. Both conservation and recreation could be accommodated by careful management.

The recommended area, together with Gooralong MPA (M84), Karnet MPA (M86) and Serpentine MPA (M87), which includes freehold land held privately and by Government agencies, Land Act Reserves, State Forest and water catchment areas, constitutes open space of regional significance (see Figure 1, Chapter 4). It also contributes to the larger area of regional open space extending along the Darling Scarp. The area is of regional significance because of its high conservation and recreation value and its proximity to Perth's residential areas and nearby rural settlements. Not all land under the various tenures has conservation and recreation as primary management objectives and to enhance these values the management structure, together with that of M84, M86 and M87, requires coordination. Important management considerations for this area include rationalisation of the common boundaries of the National Park and the MPAs; the need for fire protection; allowing only those recreation activities which are compatible with the conservation of flora and fauna; developing educational programmes; and safeguarding the scenic values of the waterfall.

Recommendations:

- M85.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M85.2 That Reserves C26079 and C26080 be cancelled and their respective areas added to Reserve A28862.
- M85.3 That Reserves C32201 and C32202 be cancelled and their respective areas added to Reserve A28862.

M85.4 That the freehold land held in the name of the Crown, Location 361, be added to Reserve A28862.

M85.5 That part of State Forest No. 22, within Gooralong Management Priority Area and abutting Cockburn Sound Locations 361 and 436, be excised and added to Reserve A28862.

M86 KARNET MANAGEMENT PRIORITY AREA

The recommended area is situated about 55km south-east of Perth and most of it comprises State Forest, being Karnet Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora, fauna and landscape. The recommended area also includes Cockburn Sound Location 308, freehold land owned by the MWA; and Cockburn Sound Locations 107, 239, 242, 245, 267 and 363, privately owned freehold land (Figure 150).

The area is subject to a number of pressures:

- (i) Most of the MPA comes within either the Gooralong Brook Water Reserve, Serpentine Pipehead Dam Catchment or Dirk Brook Water Reserve. A dam proposed for the Serpentine and a pipehead dam proposed for Dirk Brook may affect the area in which case public access would be restricted by Catchment Zone regulations.
- (ii) The area may be affected by proposed SEC lines.
- (iii) The MRD requires access to gravel in the MPA; extraction may possibly be confined to the buffer zone.
- (iv) The area is within the Alcoa Mining Lease and has high medium-term potential for bauxite.

Karnet MPA is important in conserving a representative range of vegetation from the western margin of State Forest. This vegetation includes forests of jarrah and marri on the uplands, and forest of marri and yarri and woodland of butter gum (a species which is rare) in the valleys. Recreational activities in the area include driving, picnicking and bushwalking.

The recommended area, together with Gooralong MPA (M84), Serpentine National Park (M85) and Serpentine MPA (M87), which includes freehold land held in private ownership and by Government agencies, Land Act Reserves (including a National Park), State Forest and water catchment areas, constitutes open space of regional significance (see Figure 1, Chapter 4). It also contributes to the larger area of regional open space extending along the Darling Scarp. The area is of regional significance because of its high conservation and recreation values and its proximity to Perth residential areas and nearby rural settlements. Not all land under the various tenures has conservation and recreation as primary management objectives and to enhance these values the management structure, together with that of M84, M85 and M87, requires coordination.

Recommendations:

M86.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M86.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Karnet Management Priority Area.

M86.3 That the Forests Department negotiate with the Metropolitan Water Authority with a view to Cockburn Sound Location 308 being managed as if part of Karnet Management Priority Area.

M86.4 That the portion of State Forest No. 22 adjoining the north-west of the area be managed as if part of Karnet Management Priority Area.

M87 SERPENTINE MANAGEMENT PRIORITY AREA

The recommended area is situated about 50km south-east of Perth and most of it comprises State Forest, being Serpentine Management Priority Area. The management priority as designated in the Forests Department's Working Plan No. 87 is conservation of flora and fauna. Also included in the recommended area are Cockburn Sound Locations 105, 171, 283, 307, 324, 424, 440 and part of 537, all privately owned freehold land (Figure 150).

The MPA is within the Serpentine Pipehead Dam Catchment and the Gooralong Brook Water Reserve. It may be affected by the proposed pipehead dam to be located on the Serpentine River. Public access is restricted by Catchment Zone regulations. The area is within the Alcoa Mining Lease and has short-term potential for bauxite mining.

Serpentine MPA is important in including dieback-free areas in the western portion of the jarrah forest, a region which is highly susceptible to the disease. It is also important in containing forest of yarri, jarrah and marri which elsewhere has been severely reduced in occurrence by the dam-

ming of valleys and clearing of land for agriculture. There are three rare plant communities within the MPA.

The recommended area, together with Gooralong MPA (M84), Serpentine National Park (M85) and Karnet MPA (M86), which includes freehold land held in private ownership and by Government agencies, Land Act Reserves (including a National Park), State Forest and water catchment areas, constitutes open space of regional significance (see Figure 1, Chapter 4). It also contributes to the larger area of regional open space extending along the Darling Scarp. The area is of regional significance because of its high conservation and recreation values and its proximity to Perth residential areas and nearby rural settlements. Not all land under the various tenures has conservation and recreation as primary management objectives and to enhance these values the management structure, together with that of M84, M85 and M86, requires coordination.

Recommendations:

M87.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M87.2 That the procedure outlined in general recommendations 1 to 5, Chapter 2, be applied to Serpentine MPA.

M88 LAND NORTH OF KEYSBROOK

The recommended area is situated between Serpentine and Keysbrook and comprises Cockburn Sound Locations 320, 321, 479 and 480, privately owned freehold land; and part of an adjacent railway reserve (Figure 151).

This area is within a potential artesian intake area, which may be used after the year 2000. The area will be affected by widening of the Armadale-Bunbury Road.

The area contains some partly cleared stands of open-forest, dominated by marri, wandoo and jarrah. Among these species are about 100 trees of the rare salmon white gum, which is known in only a few good stands in Western Australia. The railway reserve contains a limited number of these trees. The present land holders have demonstrated that tree stands are compatible with farm management, but some longer term protection is needed to ensure that future operators do not destroy flora.

Recommendations:

M88.1 That Westrail liaise with the Forests Department to protect and increase the numbers of salmon white gum within the railway reserve.

M88.2 That ways and means of providing protection for the salmon white gums on Cockburn Sound Location 320, 321, 479 and 480 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

M89 WOODLAND EAST OF KEYSBROOK

The recommended area is situated on the Darling Scarp about 2km east of Keysbrook and about 60km south of Perth, and comprises Location 1494, privately owned freehold land and part of State Forest No. 22 (Figure 151).

The MRPA has indicated that the area has significant landscape value and should eventually be 'reserved' under the Metropolitan Region Scheme.

The area is partially affected by grazing and a dam. The MWA has identified the locality as a possible aquifer recharge area.

Most of the area is covered by open-woodland or low open-woodland, the most widespread species being wandoo, marri and jarrah. There are a total of six species of eucalypt which do not normally associate together in one community, and three of these are rare: salmon white gum, butter gum and mountain gum. Species in the understorey include boronia, *Darwinia citriodora*, *Hakea trifurcata* and granite petrophile.

The area contributes to open space of regional significance extending along the Scarp (see Figure 1, Chapter 4), because of its high conservation and recreation value. The area provides magnificent scenic views of the Scarp and coastal plain, and of historical interest is a very early jarrah logging trail.

Recommendations:

M89.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

- M89.2 That the part of State Forest No. 22 be managed by the Forests Department for conservation of scientific and historical aspects, and education of the public.
- M89.3 That ways and means of protecting the conservation value of Location 1494 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

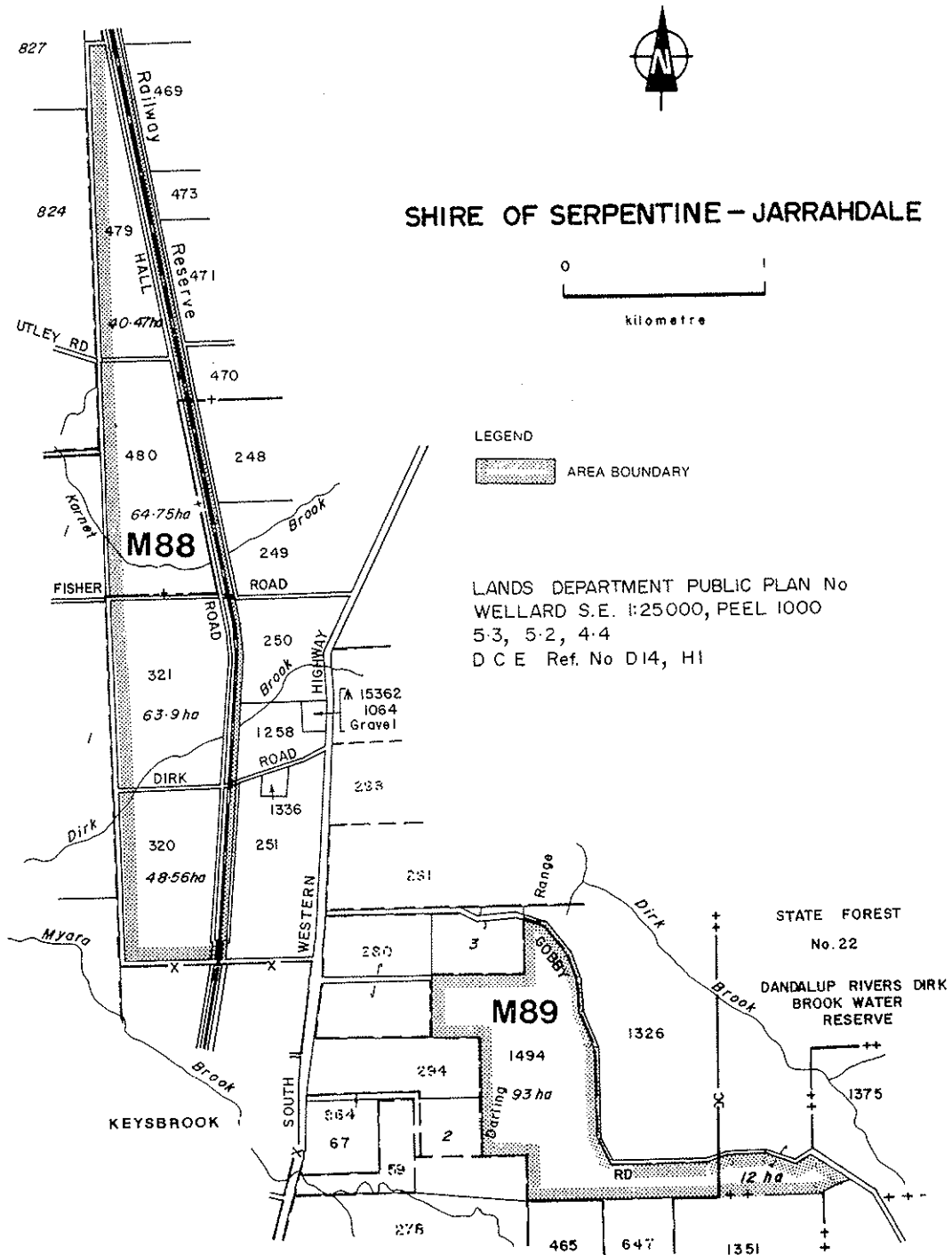


Figure 151

M90 QUARANTINE STATION AND EXPLOSIVES MAGAZINE RESERVE, WOODMAN POINT

The recommended area is situated about 7km south of Fremantle and comprises the Quarantine Station at Woodman Point (Location 1845), and lots 16, 17 and part of 15, all owned by the State Government; Reserve C24305, for Explosives Magazine vested in the Minister for Mines; and Reserve A24306, for Recreation and Purposes Incidental Thereto, vested in the City of Cockburn (Figure 152). The area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The area has been the subject of a study conducted by the MRPA's Jervoise Bay/Woodman Point Project Steering Committee and its Report, entitled "Jervoise Bay Rationalisation Plan", was completed in March 1982.

There are SEC lines in the area and the Quarantine Station contains buildings, roads and grassed areas. There is a shell-sand washing, screening and pumping plant in the area which is linked with a cement works in South Coogee.

The area contains vegetation of outstanding importance as an example of undisturbed coastal vegetation. The coastal strip between Coogee Beach and Woodman Point, together with Garden Island, is now the only place in System 6 that carries significant areas of the Rottneest cypress community which was once widespread along the coast on the lee side of the stable dunes.

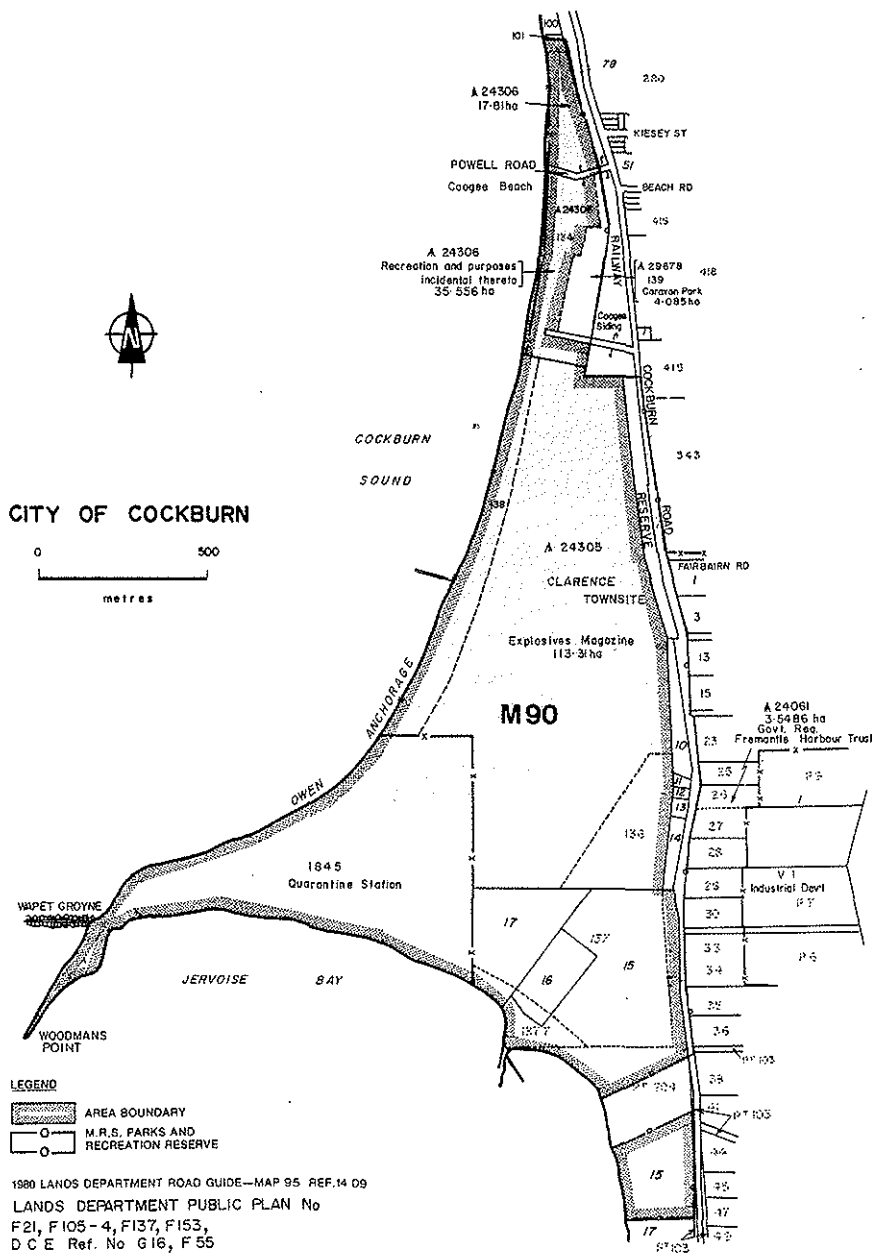


Figure 152

Owing to the low incidence of fire the community is particularly well developed in the Quarantine Station. The vegetation comprises low closed-forest: Rottneest cypress is the commonest species and occurs both in pure stands and in mixed stands with acacia and chenille honeymyrtle. A few scattered specimens of quandong occur. There is little understorey. In the northern part of the Quarantine Station and the southern part of the explosives reserve are open-forest and woodland formations dominated by tuart. The vegetation in Reserve A24306 comprises a Rottneest cypress community: though it is in a more disturbed condition than that to the south it has the advantage of being readily accessible to the public. Occurring as a sparse understorey or around the edges of the woodland are other species such as berry saltbush, *Leucopogon parviflorus*, rigid wattle and *Melaleuca acerosa*.

Two mammals, the quenda and the western grey kangaroo, are known to occur within the Quarantine Station.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high recreation and conservation value and its proximity to Perth residential areas, including Rockingham and Kwinana. Land tenure is varied and not all land in the area has conservation or recreation as primary management objectives. The area's management structure therefore requires coordination. Important management considerations include: preserving the indigenous vegetation communities, particularly the Rottneest cypress; locating the main recreation facilities away from important floristic areas; reducing the fire risk; and the area's potential for parks and recreation use.

Recommendations:

- M90.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M90.2 That the most biologically important portions of Reserve C24305 and Cockburn Sound Location 1845 be excised and declared an A Class Reserve for Conservation of Flora and Fauna, and Recreation, and that the Reserve be vested in the W.A. Wildlife Authority.
- M90.3 That the purpose of Reserve A24306 be amended to Parkland and Recreation.
- M90.4 That the remaining portion of Reserve C24305 (subject to M90.2) be cancelled and added to Reserve A24306.
- M90.5 That the interim management of the ex-Commonwealth land by the Department for Youth, Sport and Recreation is endorsed.

M91 RESERVE A24309, COOGEE

The recommended area is situated about 12km south of Fremantle, and comprises Reserve A24309, for Recreation and Camping, vested in the City of Cockburn (Figure 153B). It is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

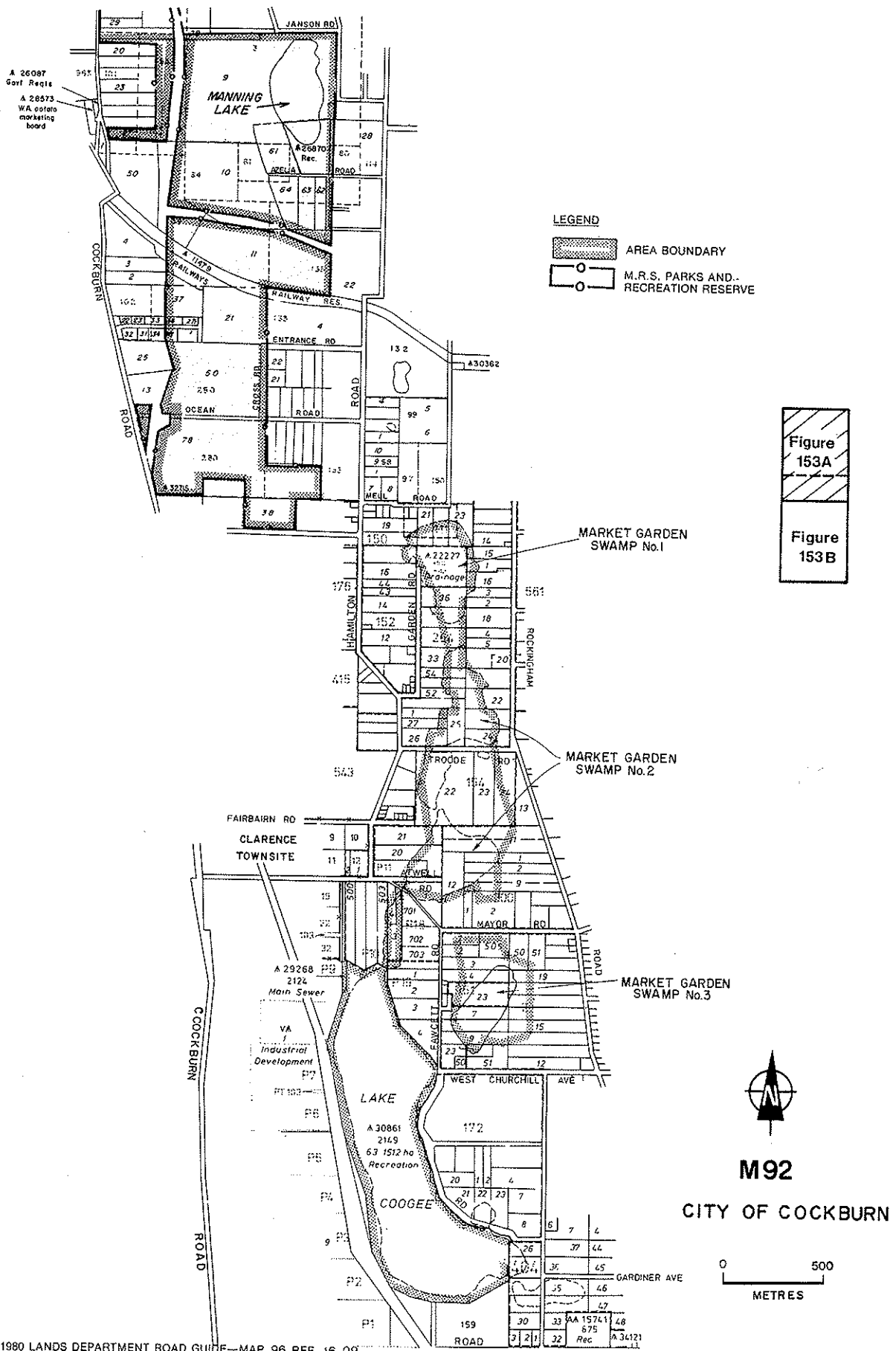
The shore is a limestone cliff up to 6m high, with several sandy beaches at its base. The land on top of the cliff is gently undulating and has shallow sand overlying the limestone. The northern section has been severely degraded by limestone extraction. The remaining vegetation is mostly low closed to open-heath, with some emergent trees, including slender banksia and limestone marlock, and at least fifty species of native plants, including parrot bush, spider-net grevillea and coral vine. A few areas on top of the cliff carry a very low heath. The vegetation is mostly in good condition, and in spring makes a colourful display. There is no similar section of coastline near Perth.

Parts of the Reserve are already used as picnic areas. At the south end is the Naval Base Caravan Park, while at the north end is Jervoise Groyne with a small marina. Use of the reserve is largely confined to these areas and several access tracks.

Because of its high conservation and recreation value, the area contributes to a larger area of open space of regional significance of which the Cockburn Wetlands-Western Chain (M92) forms the main part (see Figure 1, Chapter 4).

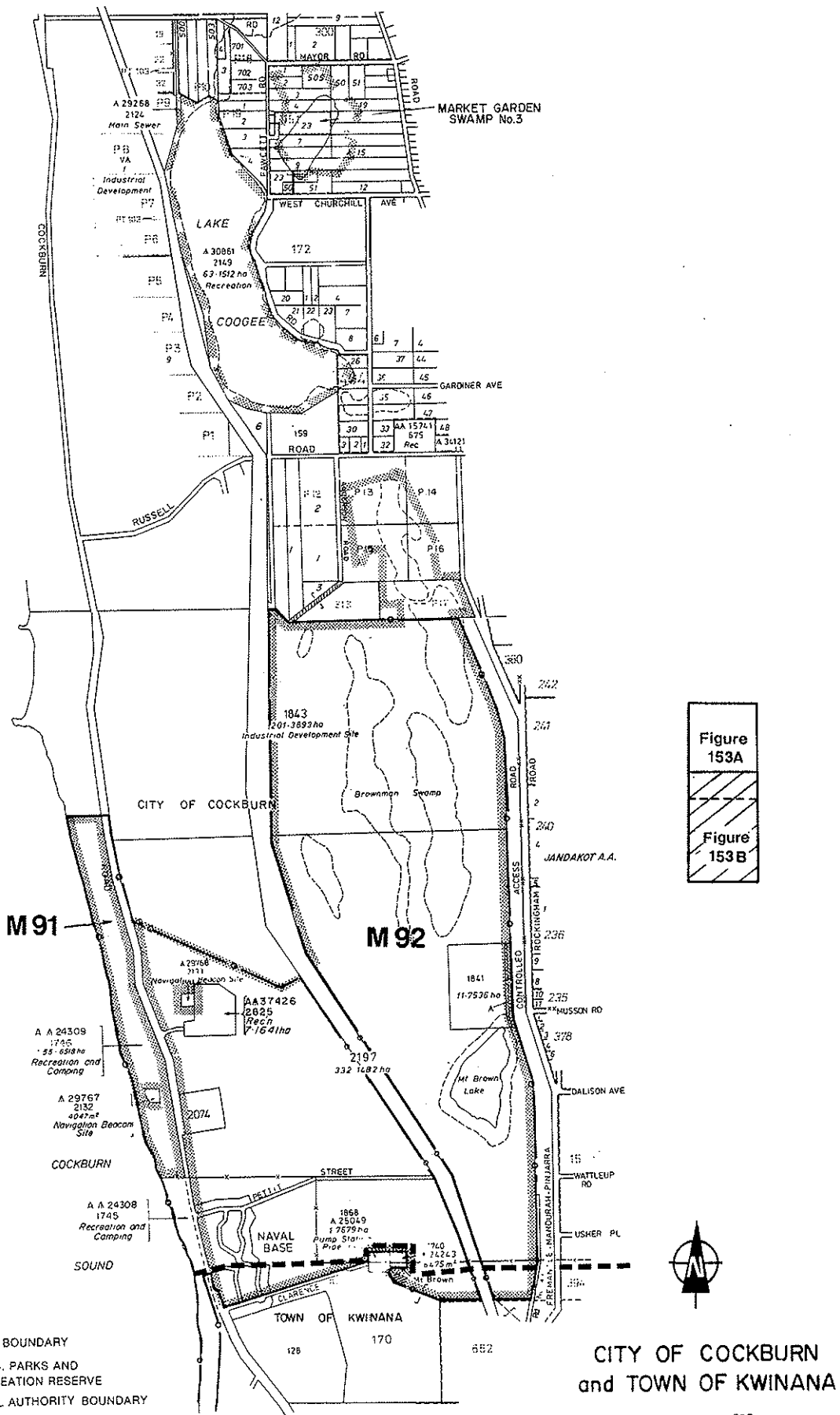
Recommendations:

- M91.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M91.2 That the Cockburn City Council, in consultation with the Department of Conservation and Environment, prepare a management plan giving consideration to encouraging the growth and regeneration of local indigenous flora.



1980 LANDS DEPARTMENT ROAD GUIDE—MAP 96 REF. 16.09
 LANDS DEPARTMENT PUBLIC PLAN No
 F89-4, F105-4, F121-4, F137-4, F153-4
 DCE Ref No 67

Figure 153A



1980 LANDS DEPARTMENT ROAD GUIDE--MAP 96 REF. 17.02
 LANDS DEPARTMENT PUBLIC PLAN Nos
 F121-4, F137-4, F153-4, F169-4
 DCE Ref No G8, G24

Figure 153B

M92 COCKBURN WETLANDS — WESTERN CHAIN

The recommended area is situated between 5 and 12km south of Fremantle and comprises Reserve C26870, for Recreation, not vested; part of Location 83, lot 9 (Location 3), lot 61 (Location 81), lot 10 (Location 84), part of lots 11 and 65 (Location 109), part of lot 2 (Location 102), lots 1, 21, 27, 37, 50, 78 and part of lots 35 and 36 (Location 280), lot 38 (Location 150), and part of Location 133, freehold land mostly owned by the MRPA (**Manning Lake**); Reserve C22227 for Drainage, not vested; part of lots 1 to 4, 7 to 9, 14 to 19, 23, 50 and 505 (Location 2), lot 23 (Location 951), lots 1 and 3 and part of lot 4 (Location P18), part of lots 1, 2, 9, 11 Rockingham Road, 2 and 12 Mayor Road (Location 300), part of lots 19 to 21 (Location P11), lot 23 and part of lots 22 and 24 (Location 154), part of lot 503 (Location P10), part of lots 1 Rockingham Road, 3, 21 to 27, 1 Hamilton Road, 33 to 36 and 52 to 54, all of Location 264, part of lots 17, 18, 21 to 23 (Location 150), privately owned freehold land (**the Market Garden Swamps and surrounding land**); Reserve C30861, for Recreation, vested in the City of Cockburn and part of lots 26 and 27 (Location 404) privately owned freehold land (**Lake Coogee**); Cockburn Sound Locations 1841, 2074 and part of Cockburn Sound Locations 1843 and 2197, land held in the name of the Crown; and part of Locations P13 to P17, privately owned freehold land (**Mt. Brown, Mt. Brown Lake and Brownman Swamp**) (Figures 153A and B).

The MRPA has "reserved" Manning Lake and surrounding land and most of the Mt. Brown, Mt. Brown Lake and Brownman Swamp area for Parks and Recreation under the Metropolitan Region Scheme. The MRPA has recognised that other land in the area may be suitable for "reservation" for Parks and Recreation under the Metropolitan Region Scheme. All the land owned by the Industrial Lands Development Authority which is "reserved" for Parks and Recreation under the Metropolitan Region Scheme is in the process of being transferred to the Crown.

The amended route for the Cockburn Road controlled access highway passes through the area. There are SEC lines in the area, and a section north of Naval Base is used for motor sports. The MWA states that the lakes may be used as a drainage compensating basin. A fly ash disposal site is to be located immediately north of the railway reserve, on MRPA land. The whole of the area is located within the South-West Corridor.

The area has been the subject of the Cockburn Wetlands Study, the Woodman Point — Jervoise Bay Study, the Coogee Air Pollution Study and the Kwinana Air Modelling Study. Current studies concerned with the area are the Coogee Coastal Area Study, the Packham Town Planning Scheme Study and a study of groundwater management around Lake Coogee by a Working Group under the Groundwater Management Committee of the W.A. Water Resources Council.

Manning Lake

The land surrounding Manning Lake has been cleared to within twenty metres of the foreshore. The remaining vegetation consists of swamp paperbark, some tuarts and *Melaleuca teretifolia*. The understorey mainly comprises species of saltmarsh reeds. Samphire covers the lake bed at the northern end of the lake. Manning Lake has been polluted by fertilisers and possibly by horse manure entering the lake, causing a build up of bacteria and an excess of nutrients.

The Market Garden Swamps

The three Market Garden Swamps, which are small, seasonal and highly eutrophic, are all vegetated with saltwater and swamp paperbark, the structure varying from low closed-forest to low woodland. The predominant understorey species are saltmarsh reeds. The swamp bed of the southern-most swamp is almost covered by two water plants, while those of the other two are partially covered with saltmarsh plants. The Market Garden Swamps are comparatively unimportant for water-birds, but the vegetation is worth preserving since there are only a few stands of saltwater paperbark in the metropolitan area.

Lake Coogee

Lake Coogee is shallow and nearly as saline as sea water. It is also highly eutrophic, the main source of nutrients probably being fertilisers from nearby market gardens. Except for a narrow strip 5 to 10m wide little vegetation remains around the lake. It consists mostly of low woodland and low open-forest of saltwater paperbark with some understorey. Wattles and young tuarts are scattered amongst the paperbark along the western shores.

The population of water-birds in Lake Coogee includes grey teal, mountain duck and black duck which loaf on the lake. The great crested grebe and the hoary-headed grebe are also present; the lake's expanse of open, brackish water is ideal for the latter, which appears to breed there. Waders include the white-headed stilt, the red-necked stint and the white-faced heron. A small fish that can tolerate high salinity inhabits the lake.

Brownman Swamp, Mt. Brown Lake and Mt. Brown

Brownman Swamp is a series of seasonal paperbark swamps, surrounded by extensive open-forests of tuart of good quality. To the west is woodland of tuart and banksia with open-heath and shrubland on low limestone hills. The wetlands and the tuart forest have high conservation values.

Mt. Brown Lake is small, saline and usually dry in late summer, but supports several species of water-birds for most of the year. It is fringed with stands of paperbark and tussock sedge, while woodland of tuart and banksia and shrubland dominated by chenille honeymyrtle surround the wetland vegetation.

Mt. Brown and the low limestone hill to the north are covered by open-heath with many species typical of the coastal limestone, including spider-net grevillea, chenille honeymyrtle and cockie's tongues. Also present are two uncommon species, button runner and *Hemigenia sericea*. On the slopes and in the valley is deep sand supporting low woodland and low open-woodland, mainly of banksia with some jarrah and limestone marlock. The understorey contains a good variety of species. The Cockburn Wetlands Study and Woodman Point — Jervoise Bay Study both recommend that the Brownman Swamp, Mt. Brown Lake and Mt. Brown area should be retained for recreation and conservation. The Coogee Air Pollution Study had earlier concluded that this area was not suited for urban use.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation value and its proximity to the Perth residential areas. Land tenure is varied and not all the land has conservation or recreation as primary management objectives: to enhance these values the area's management structure requires coordination. Major management considerations include: preserving the wetlands and fringing vegetation; rehabilitation of the Market Garden Swamps and Manning Lake; linking the wetlands by open space; and preventing activities (e.g. off-road vehicle use) likely to adversely affect the flora and fauna.

Recommendations:


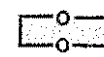

- M92.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M92.2 That the Metropolitan Region Planning Authority consider "reserving" those portions of the recommended area not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

M93 COCKBURN WETLANDS — EASTERN CHAIN

The recommended area is situated in the City of Cockburn, and comprises Reserve A6208, for Recreation, under the control of the Cockburn City Council; Reserve C27488, for Hall Site, not vested; part of Reserve C31968, for University Site, also not vested but the subject of a Crown Grant in Trust to the Murdoch University Planning Board; lots 38, 39, 54 to 59 and part of lot 37 (Location 235), part of lots 1, 4, 7, 52, 53 (Location 10), lots 1 and 2 (Location 405), part of Locations 21, 35, 50, 65, 179, 387, 393, 438, 485, 552 and 772, freehold land mostly owned by the MRPA (**North Lake and Bibra Lake**); lots 2 to 6 (Location 541), part of lots 9, 10, 20 (Location 21), and part of Locations 21 and 542, freehold land mostly owned by the MRPA (**South Lake and Little Rush Lake**); lot 1 and part of lots 2, 5 and 7 (Location 406), and part of Location 298, freehold land partly owned by the MRPA (**Yangebup Lake**); part of Reserve C31829, for Drain, vested in the City of Cockburn; lots 1 to 4, 6 to 9, 12 to 15 (Location 391), lots 1, 7 and 8 (Location 677), Locations 756, 759, 763 and 766, and 769 to 771, and part of Locations 433 and 751 to 755, privately owned freehold land (**Kogolup Lake**); Reserves A15556, for Fauna Conservation and Research and Drainage, vested in the W.A. Wildlife Authority; C29241, for Conservation of Fauna (University Marsupial Research), vested in the Minister for Fisheries and Wildlife; C31882 for Recreation, vested in the City of Cockburn, part of lot 1 (Location 464) and Location 2017, privately owned freehold land (**Thompson Lake and Banganup Lake**); lots 63 to 65, 86 and part of lots 57 and 59 (Location 15), and part of lots 1, 2, 3, 612 and 615 (Location 16), privately owned freehold land (**Wattleup Lake**) (Figure 154). Much of the area from North Lake to Yangebup Lake has already been "reserved" for Parks and Recreation under the Metropolitan Region Scheme, and the section from Kogolup Lake to Wattleup Lake is recognised by the MRPA as suitable for possible future "reservation".

Some of the lakes are subject to pollution caused by drainage from the Jandakot rural areas, an old sanitary landfill site and industrial effluent. Should urban development occur in the vicinity of these lakes it is probable that the MWA will have to utilise some of them as drainage sumps.

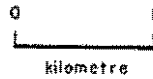
LEGEND

-  AREA BOUNDARY
-  M.R.S. PARKS AND RECREATION RESERVE
-  LOCAL AUTHORITY BOUNDARY



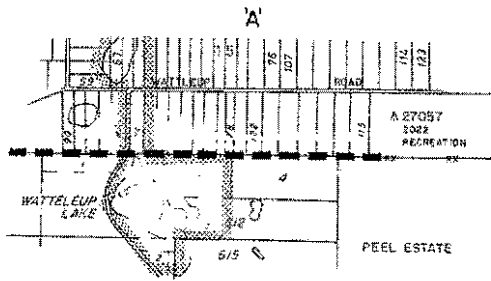
M93

**CITY OF COCKBURN
TOWN OF KWINANA**

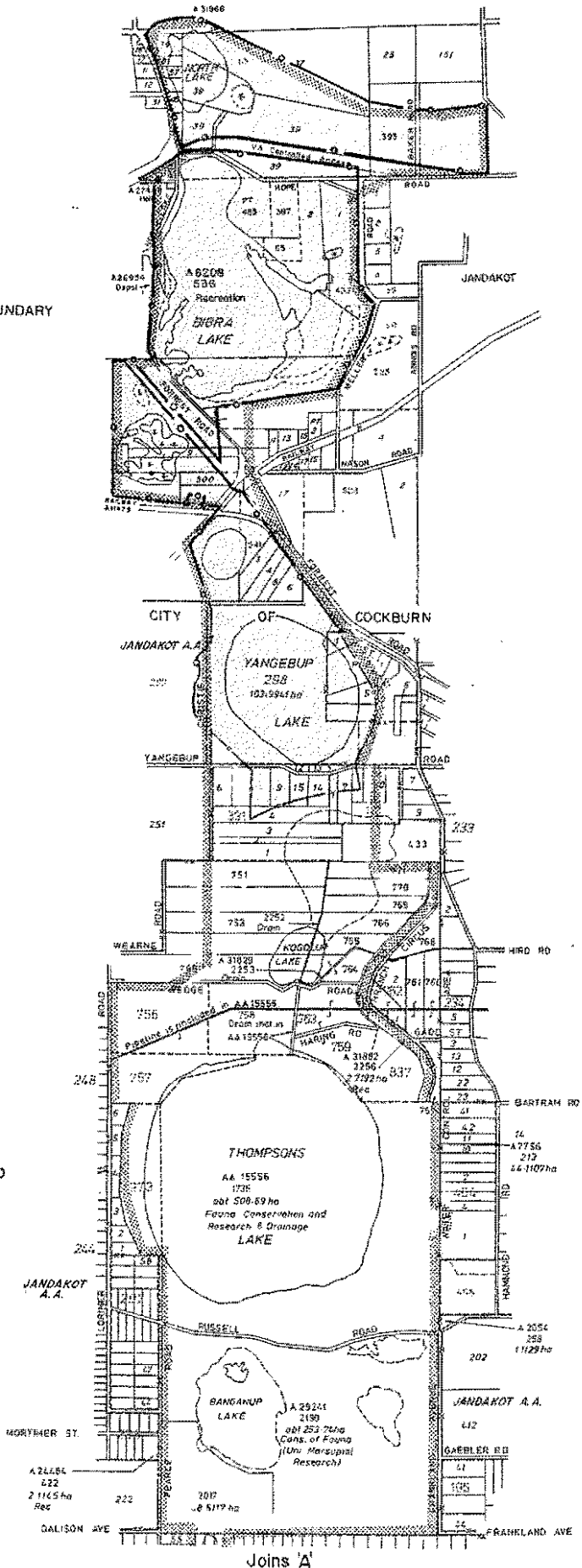


1960 LANDS DEPARTMENT ROAD GUIDE—
MAP 97 REF. 23.08

LANDS DEPARTMENT PUBLIC PLAN No
F75, 91, 107, 123, 139, 155, 171, 187-4
D C E Ref. No F54, G9, G10, G11, G12



TOWN OF KWINANA



Joins 'A'

Figure 154

This could cause some contamination of the lakes and affect groundwater levels. A railway crosses the recommended area west of Forrest Road and there is a proposal to link Bibra Lake to Forrestfield by rail which will affect the area. The area is dealt with in the Cockburn Wetlands Study and the South-West Corridor Planning Structure.

North Lake and Bibra Lake

North Lake is mostly open water. In the northern section there are a few small patches of jointed twig rush and of paperbark. Around the western and southern sides of the lake there is a fairly broad band of woodland of flooded gum, associated with paperbark around the fringes of the lake. Only in the south-eastern section has extensive clearing taken place right down to the water. East of the lake and north of Hope Road there are two areas of open-woodland, east of which there is low woodland of paperbark.

Bibra Lake is also mostly open water. In the east there are extensive areas of paperbark. Bordering the open water in the northern and south-western sections there are sedgelands of jointed twig rush and bulrush. In the western section between the lake and the road, there is a fringing belt of flooded gum and paperbark and further north there are about 20ha of open-woodland of jarrah and banksia, with an understorey containing large numbers of blueboy, prickly moses, zamia and blackboy. Most of the remainder of the area is cleared, much of it used for summer pasture.

Both lakes are semi-permanent and important as summer refuges for water-birds. Good numbers of grey teal, pink-eared duck, shoveller, mountain duck, and white-eyed duck use the lakes, far more than are seen on most other metropolitan lakes. The lakes' expanses of open water favour species such as musk duck, blue-billed duck, coot and hoary-headed grebe.

Bibra Lake is the more important lake, owing to its larger size and greater variety of habitat. The large expanses of closed-scrub of paperbark and nearby muddy shallows provide an ideal habitat for a wide variety of wading birds, one of which, the yellow-billed spoonbill, is uncommon in south-western Australia. The paperbark also provides an ideal habitat for a number of bush birds, including willy wagtail, silvereeye, splendid blue wren and western thornbill. This area is of prime importance for preservation since it provides one of the few productive breeding habitats for birds in the metropolitan area.

The area is likely to be subjected to increased pressure for recreation as the population increases. At present, part of the wooded area to the west of both lakes is misused by the public for trail bikes and cutting of wood. Part of Bibra Lake's western shore has been developed into a popular picnic area and children's playgrounds. The Bibra Lake Adventure World complex is to the west of Forrest Road and car parks for the complex are situated to the south of Bibra Lake.

North Lake is threatened as an area for conservation and recreation by the proposed extension of Farrington Road as a dual carriageway around the north of the lake. The Cockburn Wetlands Study recommended that the proposed extension should not be built. The proposed Roe Freeway is planned to run between the lakes. The Cockburn Wetlands Study recommended that the Freeway should be modified to reduce its impact on the wetlands in the area.

Private groundwater extraction and stormwater drainage affect water levels in the area and there is evidence of pollution of the lakes as a result of inflow of nutrients from nearby paddocks and septic systems. The area will be affected by drainage and sewerage works proposed by the MWA. The southern end of Bibra Lake was used as a rubbish tip, but this has been closed.

South Lake and Little Rush Lake

South Lake is shallow and extensively covered by reed beds. It is surrounded by a diversity of dense vegetation, which provides a habitat for a wide variety of birds. In the open water aquatic weed attracts large wading birds. The area may be affected by the MRD requirements to construct the proposed Albert-Forrest Road link.

Although the vegetation has been cleared around Little Rush Lake, there is a diversity of habitats providing a summer refuge for water-birds. The lake is ideal for passive recreation (e.g. picnic areas, children's playground) and the disused railway line running through the area could be suitable for a cycle track, linked to nearby urban development.

Yangebup Lake

The vegetation surrounding the lake has died. Although the loss of vegetation has obviously affected some populations of water-birds, the lake has particular value in that it is used by two uncommon species, the pink-eared duck and blue-winged shoveller. Other species of water-fowl that use the lake are grey teal, black duck and white-eyed duck. The red-necked stint, a wader that is seen in great numbers at Yangebup Lake, is rarely observed in fresh water environments.

It does not use any of the other lakes in the eastern chain of the Cockburn wetlands. Other species of waders at Yangebup Lake include red-necked avocet and white-headed stilt.

MWA groundwater extraction and water drainage may affect water levels. There are SEC lines in the area. A number of industries, including a tannery, discharge effluents into ponds near the lake.

Kogolup Lake

The lake consists of two separate expanses of water, linked by a low-lying area which is subject to winter flooding. The area supports a wide range of vegetation types, with all of the vegetation types of the Cockburn wetlands being represented. The waters of the lake contain sedgeland, mostly of bulrush, but with smaller areas of jointed twig rush and spike rush, the last named being normally found only in the north-west of Western Australia and in the Eastern States.

Bordering the lake are areas of open-forest and woodland of flooded gum associated with paperbarks, or with undershrub acacia. The rare Hackett's hop bush is another shrub of the understory, as are broom ballart, stinkbush and native broom.

The surrounding woodland vegetation is varied, since the lake is situated at the junction of two major soil associations. The dense vegetation, particularly to the west, and the relative isolation of Kogolup Lake attract birds which prefer seclusion. Uncommon species have been seen in greater numbers at Kogolup Lake than elsewhere in the Cockburn wetlands. The old drain between Kogolup and Thompson Lakes has a high and diverse population of birds. The north-eastern part of the area is suitable for passive recreation, and is at present used by a riding school.

MWA groundwater extraction may affect water levels. The area has potential for diatomaceous and other earths and is affected by existing claims.

Thompson Lake and Banganup Lake

Thompson Lake is the largest water body of the Cockburn wetlands and contains about 150ha of semi-permanent open water. Around the margin of the lake is a narrow belt of sedgeland dominated by jointed twig rush. In the east the sedgeland is flanked by open-scrub of stinkbush and prickly moses, and in the south and west by a narrow strip of bare ground.

In low-lying land to the north and east of the lake is a woodland of flooded gum and paperbark. In the north flooded gum also forms an open-forest with orange wattle as an undershrub. Hackett's hop bush occurs in this association and being fire-sensitive it is important that a number of populations be reserved to ensure its survival. It is apparent that frequent burning has reduced the diversity of vegetation surrounding the lake. Retention of an expanse of tuart-jarrah-banksia forest to the west would provide a valuable buffer zone to the lake.

The lake has an abundance of bird life, both water-fowl and bush birds, forty-four species of the latter having been recorded. Many birds of prey use the area, the most note-worthy being the wedge-tailed eagle.

Reserve C29241 which contains Banganup Lake is leased to the University of Western Australia and used extensively for the breeding of marsupials, including the grey kangaroo, brush wallaby, short-nosed bandicoot, brush-tailed possum and quokka, for research purposes.

The area's vegetation types are similar to those at the adjacent Thompson Lake. There are more than three hundred and fifty species of plants in the Reserve. They include two uncommon species, babe-in-a-cradle orchid on the swamp margin, and Hackett's hop bush in the sandy rise near the swamp. The lake does not support many water-birds as it almost always dries up in summer.

MWA groundwater extraction will affect water levels. There are SEC lines in the area. Increasing quantities of pollutants appear to be entering Thompson Lake.

Wattleup Lake

The lake is within freehold land and the surrounding land includes a thoroughbred stud and a piggery. A variety of birds use the lake for summer loafing.

Although most of the lakeside vegetation is cleared, the southern foreshore is grassed. The uncleared eastern shore makes the lake attractive and picturesque and the owners are keen to prevent further deterioration of vegetation. The lake has recreation value, and is included in land which has value for residential development.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values and its proximity to the Perth residential area.

Land is under a wide variety of tenure in the area and not all of this land has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination. Important management considerations include:

- i) ensuring that the lakes are managed primarily for conservation of flora and fauna and/or recreation;
- ii) encouraging the growth and regeneration of local indigenous flora and preventing further deterioration of the vegetation;
- iii) retaining the diversity of the wetlands;
- iv) establishing adequate recreational facilities, and allowing only recreation consistent with the purpose of conservation of flora and fauna;
- v) establishing adequate buffer zones around the wetlands, particularly around South Lake so as to protect it from industrial and major road developments;
- vi) limiting development on the eastern margins of North and Bibra Lakes to facilities for nature study;
- vii) providing access appropriate to usage, including walk and cycle tracks linking the lakes as a linear access system;
- viii) preventing use of any part of the area for sanitary landfill;
- ix) monitoring the water quality of the wetlands and groundwater.

Recommendations:

- M93.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendation 15 and 16, Chapter 5).
- M93.2 That the Metropolitan Region Planning Authority consider "reserving" the area from Kogolup Lake to Wattleup Lake for Parks and Recreation under the Metropolitan Region Scheme.
- M93.3 That the recommendations of the Cockburn Wetlands Study (that Farrington Road should not be extended around the north of North Lake and that the proposed Roe Highway be modified to reduce its impact on the wetlands in the area) are endorsed.

M94 JANDAKOT AIRPORT

The area comprises Jandakot AA lots 127, 161 to 165, 295, 411, 438 and parts of Locations 126, 128, 129, 159, 160, 168, 439 and 440, freehold land owned by the Commonwealth of Australia (Figure 155).

Private groundwater extraction may affect water levels. There are drainage works and SEC lines in the area. Further drainage works have been proposed.

Over half of Jandakot Airport is uncleared. The vegetation is predominantly low open-forest of banksia, sheoak, Christmas tree and pricklybark, and in the north-eastern section low woodland of paperbark with swamp banksia and Christmas tree. One of the understorey species, *Leucopogon kingianus*, is an unusual heath known from only three other localities, all of which are vulnerable to surrounding development. The vegetation is undisturbed, with a dense understorey, which is largely due to the effective system of fire breaks within the airport.

The airport's fauna includes the ant *Iridomyrmex conifer* which has disappeared from many localities around Perth.

To enhance the area's high conservation value it is important that management consideration be given to retaining and encouraging the growth of local indigenous flora where possible.

Recommendation:

- M94.1 That the Commonwealth of Australia retain as much uncleared land as possible.

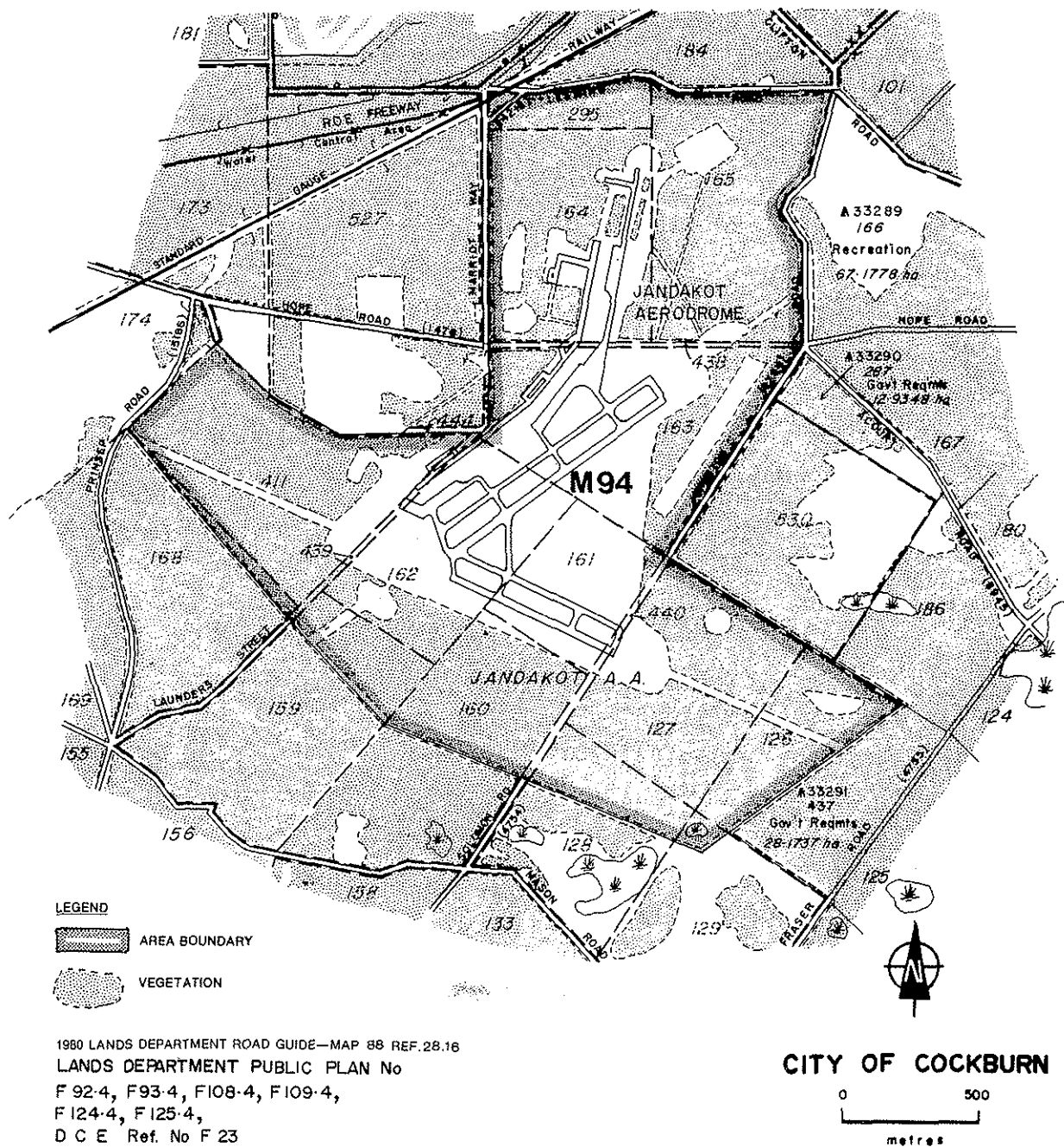


Figure 155

M95 FORRESTDALKE LAKE

The recommended area is situated about 7km west of Armadale and comprises Reserves A24781 and C37016, for Protection of Flora and Fauna and Recreation, vested in the W.A. Wildlife Authority; and C27165, for Recreation, vested in the Town of Armadale with power to lease; Jandakot AA lots 267, 276 to 284, privately owned freehold land; part of Jandakot AA lots 11, 13 and 15 and lot 7 Location 322, which has been purchased for inclusion in Reserve A24781 (Figure 156).

MWA groundwater extraction may affect water table levels. This is being monitored by the Department of Fisheries and Wildlife. There are SEC lines in the area and a main road to the east has been proposed.

The vegetation around the lake consists mostly of low closed-forest of swamp paperbark, with some spearwood. There are also patches of open-forest of flooded gum with a few Christmas trees. Lot 7 contains a dense stand of swamp paperbark.

The lake is a valuable water-fowl habitat. Although it has dried out during recent summers, it provides a rich feeding area as it dries and is also used by large numbers of birds during winter and spring. Long-necked tortoises are common.

The inclusion in Reserve A24781 of the seasonal swamps to the west and south would help safeguard the diverse wildlife habitats and water-fowl breeding areas.

Lake Forrestdale and its surrounds are attractive for passive recreation, including some aquatic activities.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation values and its proximity to the Perth residential area. Land tenure is varied and not all the land has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination.

Recommendation:

M95.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

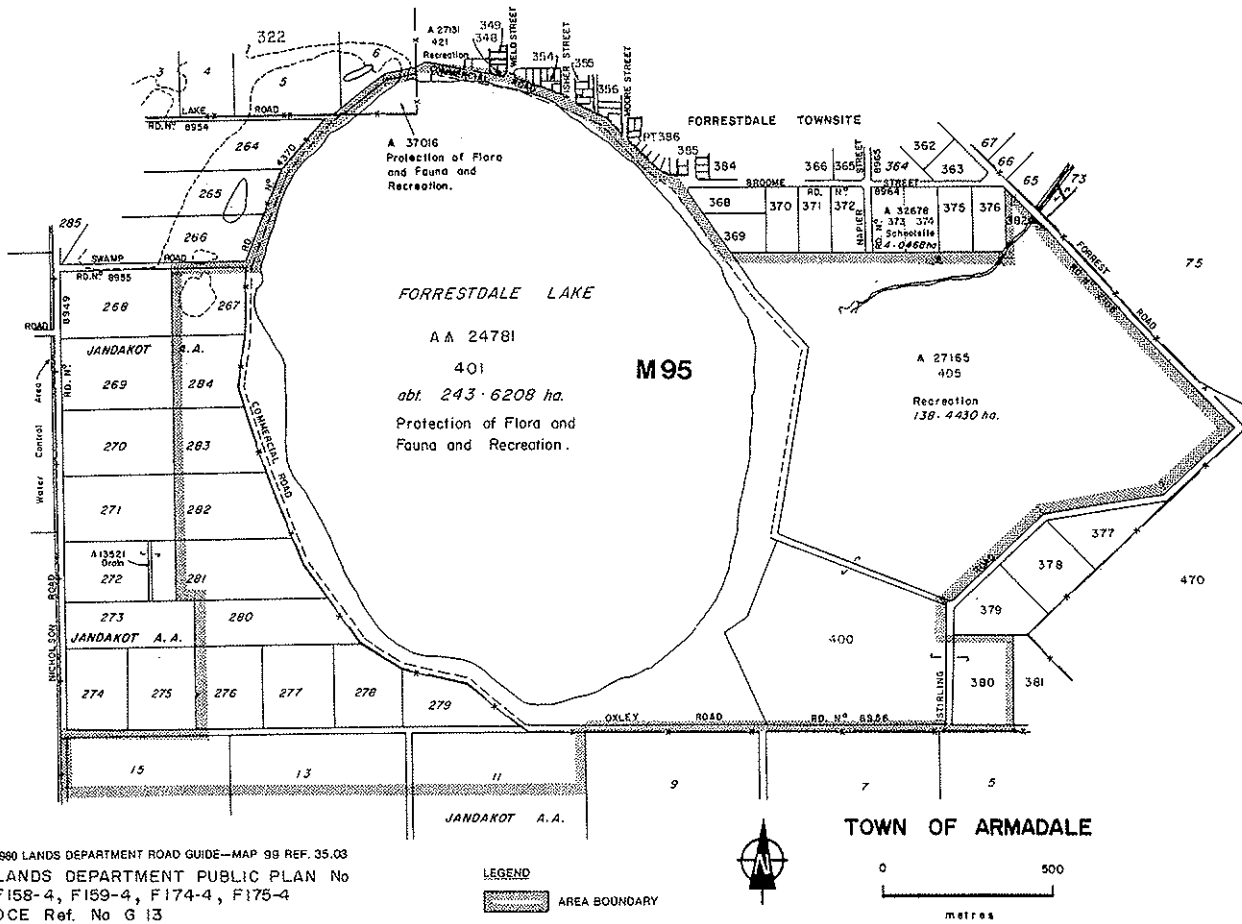


Figure 156

M96 GARDEN ISLAND

The recommended area is situated between 4 and 14km north-west of Rockingham and comprises Garden Island, which is owned by the Commonwealth of Australia and is being developed as a naval base (Figure 157).

The Garden Island Environmental Advisory Committee has drafted and initiated a management plan for the island.

The Commonwealth of Australia has sited a large naval munitions depot on the island to the north of Collins Point. The island has limestone deposits and potential for lime sands, but there are no claims. The sand cannot be extracted because of legal problems involved in mining Commonwealth land, and in use of the causeway linking the island with the mainland, access being restricted to naval personnel.

The island's conservation value is high, the vegetation being remarkable for three reasons. Firstly, certain families which are important on the mainland are either absent or represented by few species here. Secondly, pure stands of Rottnest cypress such as occur on the island are rare elsewhere. Thirdly, the structure of much of the vegetation with its single storey and closed canopy is rare elsewhere and contrasts markedly with the three distinct storeys of the woodland communities on the mainland.

More than 90 per cent of the vegetated portion of the island is covered in low closed-forest or closed-scrub of acacia, Rottnest cypress, Rottnest tea-tree and chenille honeymyrtle. Most of the cypress and tea-tree occur in the northern half of the island. One section, north of Collins Point, appears not to have been burnt for about sixty-five years and is especially important as an example of undisturbed coastal vegetation. This section is probably similar to the vegetation seen on Rottnest Island by the early explorers. Over half the island is dominated by acacia species, with undergrowth usually present but generally restricted to a few species. Rottnest cypress covers about 8 per cent of the island. It forms pure stands as well as mixed stands with Rottnest tea-tree. The undergrowth is very limited, and the ground is carpeted with a thick layer of leaf litter. Rottnest tea-tree occurs as pure stands over about 7 per cent of the island, where the formation is similar in character to the Rottnest cypress formation. Along the western side of the island there are small areas of closed-heath, the dominant plants of the various associations including boobialla.

The tammar, a small wallaby, once widespread in the south-west but now rare, is found mainly on Garden Island. Its population, estimated at about seven hundred and seventy, is threatened with possible extinction by feral cats. The island supports a number of species of birds and reptiles which are becoming rare on the mainland. Of importance are the brush bronzewing, which has disappeared from Rottnest Island and from much of its former range in the south-west, the lined skink, which is known only from Rottnest Island, Garden Island and a few southern suburbs of Perth, and the carpet snake.

In his voyage of exploration in 1827 Captain James Stirling was impressed by the island's potential as a naval station, protecting vessels at anchor in Cockburn Sound. When he returned to the Swan River Colony as its Governor two years later, Stirling selected the whole of Garden Island as part of his land grant. The first settlers landed there and spent the winter of 1829 in huts at Cliff Head before moving to the mainland. The island is therefore very significant historically.

Important management considerations include: the conservation of flora and fauna, particularly the outstanding vegetation north of Collins Point and the tammar; the prevention of fires; the elimination of feral cats; the provision of suitable recreation facilities, and the control of recreation use of the island; the development of, and provision of increased public access to, the historical site at Cliff Head.

Recommendation:

M96.1 That the Garden Island Environmental Advisory Committee's management plan for the recommended area is endorsed.

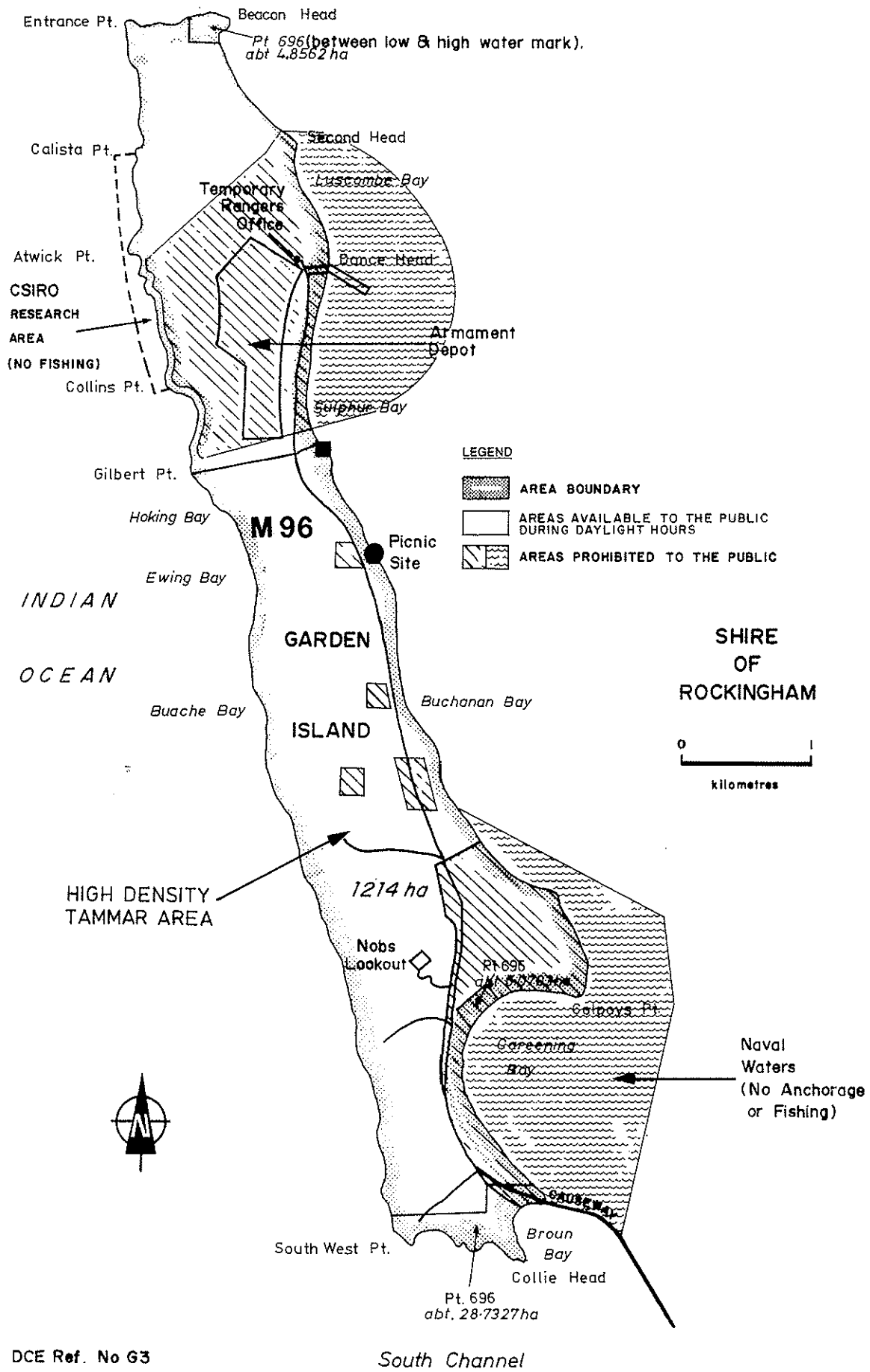


Figure 157

M97 RESERVE C36110, WANDI

The recommended area is situated about 5km north-east of Orelia and comprises Reserve C36110, for Quarry, vested in the Town of Kwinana (Figure 158).

Future MWA groundwater extraction will affect water levels. SEC lines may pass through the area and there is a mineral claim for silica sand.

The Reserve contains an undulating area of grey sands and is in an undisturbed condition. The vegetation consists of an open-woodland of banksia with some emergent jarrah and sheoak, and tall shrubs including stinkwood and spearwood. The lower storey comprises a variety of species including woollybush, blackboy and zamia; also there are a number of orchid species and the rare epachrid *Brachyloma preissi*, which is confined to the Coastal Plain near Perth and has not been recorded from any other Reserve.

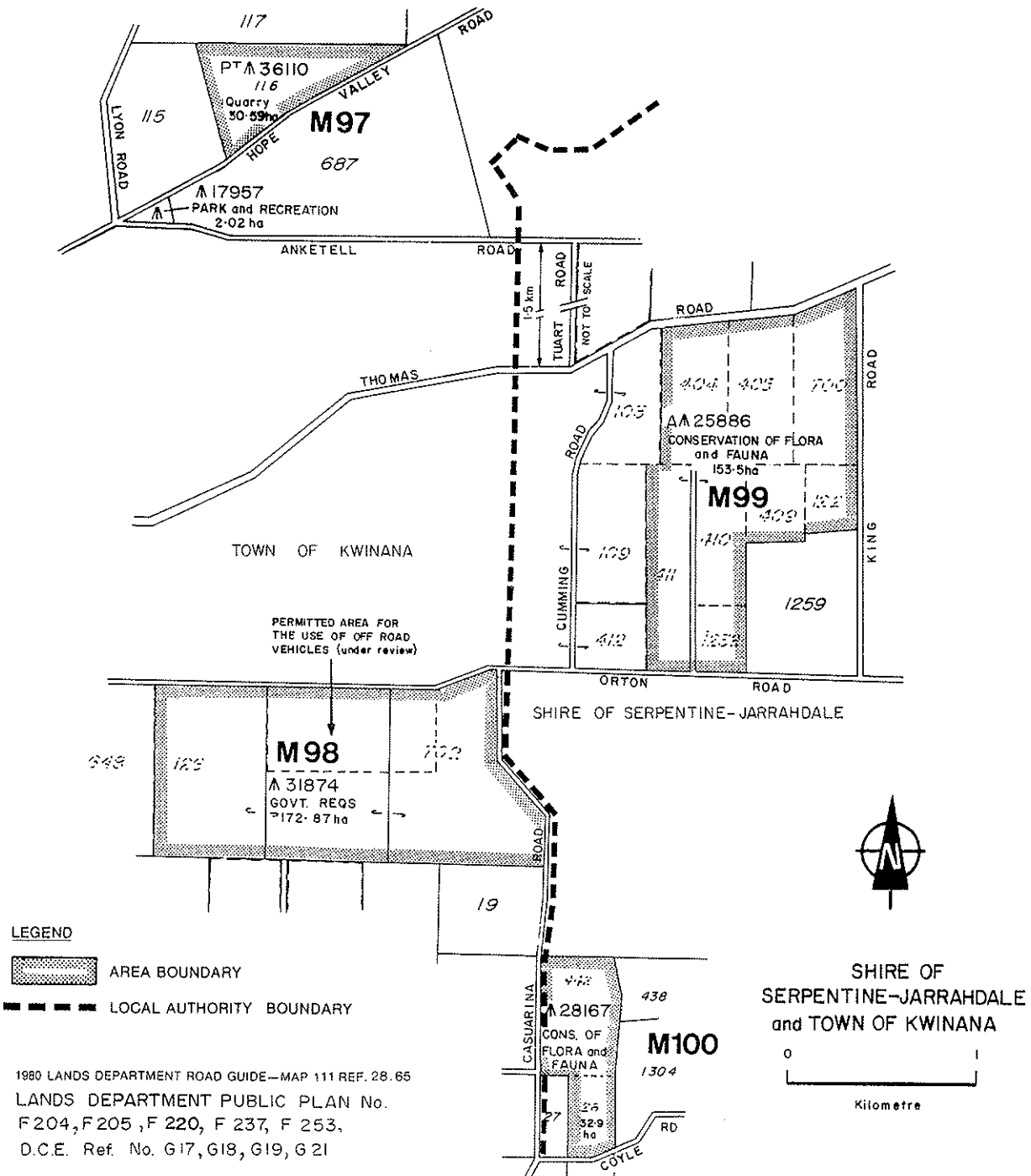


Figure 158

Recommendations:

- M97.1 That the purpose of Reserve C36110 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority for a limited term of 10 years (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.
- M97.2 That access to Reserve C36110 for the purposes of exploration and evaluation of mineral potential be permitted where necessary under conditions specified in the vesting order which should be such as to protect the area's conservation value.

M98 RESERVE C31874, CASUARINA

The recommended area is situated about 4km east of the suburb of Orelia and comprises Reserve C31874, for Government Requirements, not vested (Figure 158).

In October 1979 approximately 60 hectares in the north of the Reserve was designated for the use of off-road vehicles. Use of that permitted area has since been suspended, while the effect of the off-road vehicles is further assessed. Future MWA groundwater extraction will affect water levels. There are SEC lines in the area.

The landform consists of consolidated dunes. The vegetation is open-woodland of jarrah, sheoak, Christmas tree and banksia. The Reserve is a good habitat for orchids and research on orchid pollination has been undertaken nearby. It is important to retain representative habitats to support the insect populations involved in such pollination.

Recommendation:

- M98.1 That the purpose of Reserve C31874 be amended to Conservation of Flora and Fauna, and Water, and that the Reserve be vested in the W.A. Wildlife Authority.

M99 RESERVE A25886, WEST OF BYFORD

The recommended area is situated about 9km west of Byford and comprises Reserve A25886, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 158).

The Reserve is within a possible artesian intake area. MWA groundwater extraction is likely to affect water levels.

The vegetation is characterised chiefly by low woodland, though there are also some swampy areas within the Reserve. The low woodland is dominated by three species of banksia, with some jarrah, sheoak, Christmas tree and woody pear. Tall shrubs in the understorey include spearwood and woollybush, and both blackboy and zamia are common. Swampy areas are dominated by Moonah paperbark with an understorey of species such as basket flower and white myrtle. The vegetation is undisturbed and in good condition.

Recommendation:

- M99.1 That the existing purpose and vesting of Reserve A25886 is endorsed.

M100 RESERVE C28167, SOUTH-WEST OF BYFORD

The recommended area is situated about 10km south-west of the suburb of Orelia and comprises Reserve C28167, for Conservation of Flora and Fauna, vested in the W.A. Wildlife Authority (Figure 158).

MWA groundwater extraction is likely to affect water levels.

The reserve contains grey sands and vegetation consisting of low open-forest and low woodland of jarrah, sheoak, banksia and Christmas tree. A small swamp in the southern section contains Moonah paperbark. The Reserve is significant in conserving vegetation typical of a district which is being increasingly cleared, the Reserve being bounded by partly cleared land on its northern and western sides and by a sand quarry on its eastern side. The Reserve also provides habitats for a variety of wildlife, especially birds.

Recommendation:

- M100.1 That the existing purpose and vesting of Reserve C28167 is endorsed.

M101 CAPE PERON, SHOALWATER BAY AND WARNBRO SOUND

The recommended area is situated off the coast between Cape Peron and Port Kennedy and comprises Reserve A17070, for Recreation, Camping and Enjoyment by the Public and Purposes Ancillary Thereto; Reserves C24204, C31893 and C31894, for Conservation of Fauna, all vested in the W.A. Wildlife Authority; and four small islands — Passage Rock, First Rock, Second Rock

and another between White Rock and the mainland — being vacant Crown land (Figure 159). Penguin Island, Reserve A17070, is the subject of a management plan being developed by the Department of Conservation and Environment together with the National Parks Authority, for the enhancement of the Island's high conservation, education and recreation values. The area is affected by the construction of the Cape Peron effluent disposal pipeline.

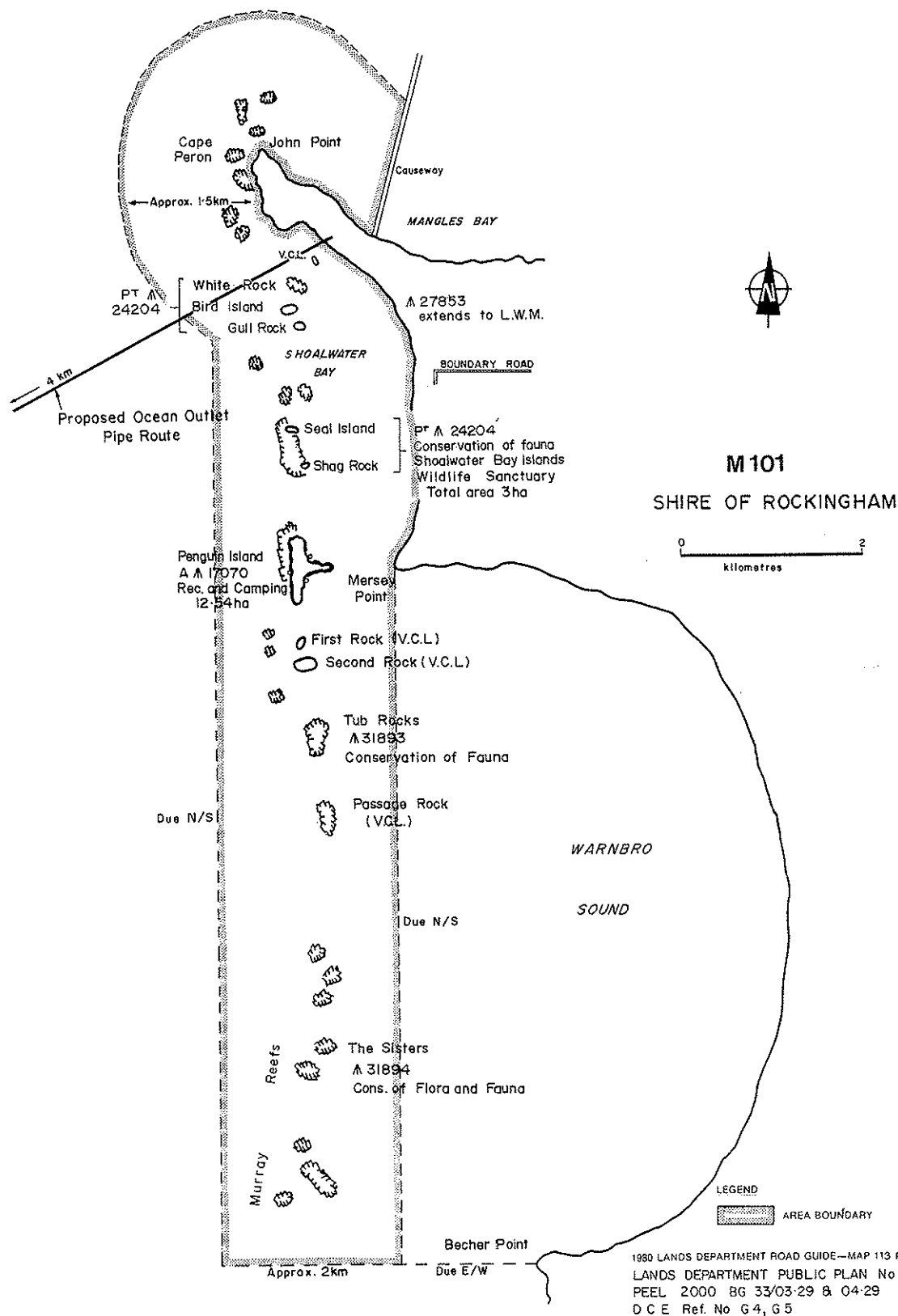


Figure 159

The waters around Cape Peron contain a variety of marine habitats ranging from sheltered seagrass meadows to more exposed limestone reefs and cliffs with tidal and sub-littoral reef platforms. The fauna and flora of the reefs exhibit well marked patterns of zonation. The range of reef and seagrass communities are of high value in the teaching of ecological principles, being close to the metropolitan area and easily accessible, in contrast to offshore islands.

Reserve C27853, at Cape Peron, is used intensively for recreational activities most of which are based on the beaches and near-shore waters. With increasing use of the recreation reserve in recent years, there has been severe diminution of rock fish inhabiting the inshore reefs. Abalone, once plentiful on reef platforms, have almost disappeared. There is a need to protect the marine life around the Reserve, with people being free to dive and view the seascape but not to remove fauna or flora, nor to damage the substrate.

Penguin Island has a similar flora to the slightly larger Carnac Island (C46).

The islands of Shoalwater Bay and Warnbro Sound and Carnac Island, are the most northerly nesting area for the little penguin. At least seven other species of birds nest here. The Sisters and Tub Rocks groups are important rookeries for the pied cormorant. Being close to the mainland the islands are convenient for research.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation, education and recreation values and its proximity to the Perth residential areas. Important management considerations include: the protection of the marine fauna; a detailed survey of the area's marine resources; and restriction of public access to areas of high conservation value.

Recommendations:

- M101.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M101.2 That Reserves C24204, C31893 and C31894 be amended to Class A.
- M101.3 That each area of vacant Crown land be made a Class C Reserve for the Conservation of Fauna and be vested in the W.A. Wildlife Authority.
- M101.4 That a study of the area be commissioned by the Environmental Protection Authority with the aim of establishing a Marine Reserve to be managed for the purpose of conservation.
- M101.5 That, subject to the implementation of M101.4, a management plan be prepared for the Marine Reserve.

M102 LAKE RICHMOND, ROCKINGHAM

The recommended area comprises Reserves C9458, for Recreation, and C33659 for Public Recreation, both vested in the Shire of Rockingham; vacant Crown land; and part of lot 402 (Location 16), privately owned freehold land (Figure 160). The MRPA has "reserved" most of the area for Parks and Recreation under the Metropolitan Region Scheme.

Lake Richmond is part of a drainage compensating scheme, with water being pumped from it into Mangles Bay to the north. A controlled access highway is to be constructed over the south-west corner of the area, and a railway line over the northern section. The area may be affected by water pollution due to storm water drainage from these works.

Lake Richmond is a permanent, freshwater lake which was once part of Cockburn Sound, having been cut off during the last four thousand years. It is geologically important because of its unusual origin and because there are well developed stromatolitic structures around the lake edge, particularly on the eastern side.

The shore carries a meadow of sedges and perennial herbs. The lake supports an unnamed species of native mollusc and several species of fish. Gould's monitor dragons and long-necked tortoises occur near the lake. A large variety of birds may be seen on and around the lake. Water-birds include various species of grebes, cormorants, egrets and ducks. Because the lake is permanent it provides a valuable summer refuge for water-fowl. Birds of prey include the osprey, and the peregrine falcon which is scarce in the south-west.

Although surrounded by urbanisation the lake is unspoilt and has high conservation and recreation value. It is used extensively by schools for educational purposes.

Recommendations:

- M102.1 That the purpose of Reserve C9458 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the Shire of Rockingham.
- M102.2 That Reserve C33659 be cancelled and its area added to Reserve C9458.

M102.3 That the vacant Crown land be declared a Class C Reserve for Conservation of Flora and Fauna and that the Reserve be vested in the Shire of Rockingham.

M102.4 That the Rockingham Shire, in consultation with the Department of Fisheries and Wildlife, the Metropolitan Region Planning Authority and the local landowners, prepare a management plan for the area.

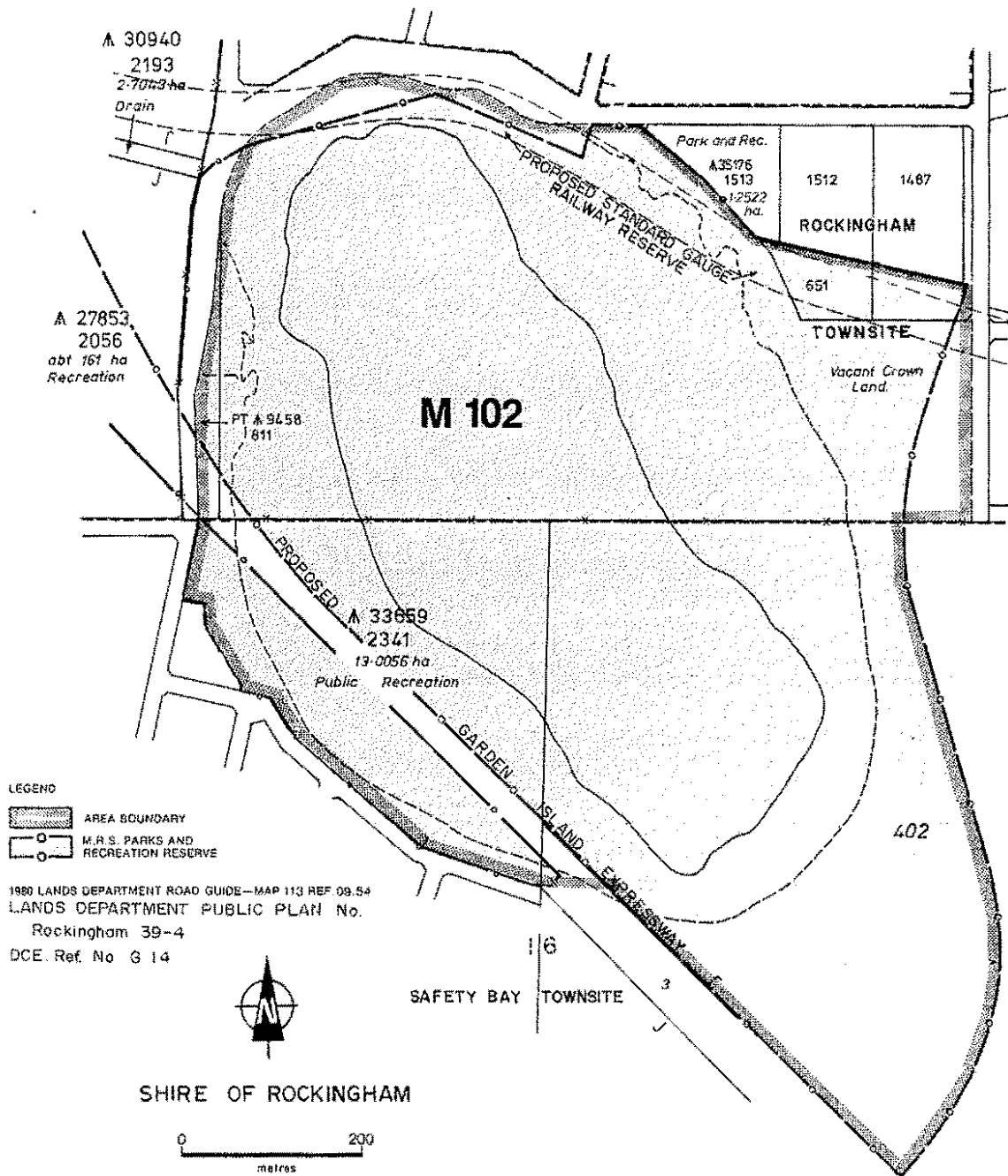


Figure 160

M103 LAKES COOLOONGUP AND WALYUNGUP

The recommended area is situated about 9km south-east of Rockingham and is often known as either White Lakes or Rockingham Lakes. The area comprises Reserves A24411 and A23780, both for National Park, and A18452, for recreation and Picnic Ground, all vested in the Shire of Rockingham; A22429, for Recreation and Parkland, not vested; lots 1 to 21, Dixon Road Subdivision (Cockburn Sound Location 16), lots 1 and 461 (Cockburn Sound Location 16), part of Cockburn Sound Location 16 (to the west of Lake Coo loongup); Peel Estate Lots 314 to 316; 318 to 322, 327, 328, 333, 579 to 583, 661, 662, 757, 765, 1127 and part of Peel Estate Lots 317, 334 and 336, all owned by the MRPA; part of Peel Estate Lots 337, 342, 658 and lot 14 of Peel Estate Lot 317, being privately owned freehold land (Figure 161). Most of the area has been "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The lakes are within the area for possible unconfined groundwater extraction which may be used by the MWA before the year 2000. Public access may eventually be restricted by Catchment Zone regulations. Groundwater extraction is likely to affect water levels. There are SEC lines in the area. The Rockingham Shire Council and the MRD currently extract marl from the area and will continue to do this on an occasional basis.

The area is the subject of ongoing planning activities conducted by the Town Planning Department on behalf of the MRPA.

The area includes thirteen different vegetation formations. Lake Coo loongup and the south-eastern section of Lake Walyungup are surrounded by tall open-forest of tuart. On moist soils west and north of Lake Coo loongup the understorey includes swamp paperbark, slender banksia and blackboy. Swamp paperbark also occurs as closed-forest between the two lakes and along their western sides. On dry land south and east of Lake Walyungup there is a large area of tall shrubland and open-heath. The lakes support mixed associations of algae of which stonewort is the most extensive and important.

Closed-sedgeland of bare twig rush surrounds both lakes and also covers an extensive area between the lakes. Open-sedgeland dominated by coast saw-sedge extends northwards from Lake Walyungup.

Seventy-three species of birds have been recorded in the area. Species include the little pied cormorant, white-faced heron, grey teal, red-capped dotterel and little grassbird. Water-fowl can be very abundant on Lake Coo loongup during summer. Animal life in Lake Coo loongup includes the water snail, the koonac, an endemic fish and the long-necked tortoise.

Reserve A22429 consists of brown and yellow sand over limestone, the predominant vegetation being tuart woodland. The Reserve has been disturbed and is infested with weeds. It does, however, occupy a high ridge and forms an important backdrop to Lake Coo loongup.

The area constitutes open space of regional significance (See Figure 1, Chapter 4) because of its conservation value and because as a large, attractive area within the South-West Corridor its recreational importance is likely to grow in the future. Not all the land under the area's various tenures has conservation and recreation as primary management objectives, and to enhance these values, the area's management will require coordination. Important management considerations are: ensuring that Lake Coo loongup is managed primarily for the conservation of flora and fauna; and ensuring that Lake Walyungup is managed to permit development for recreation use.

Recommendation:

M103.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

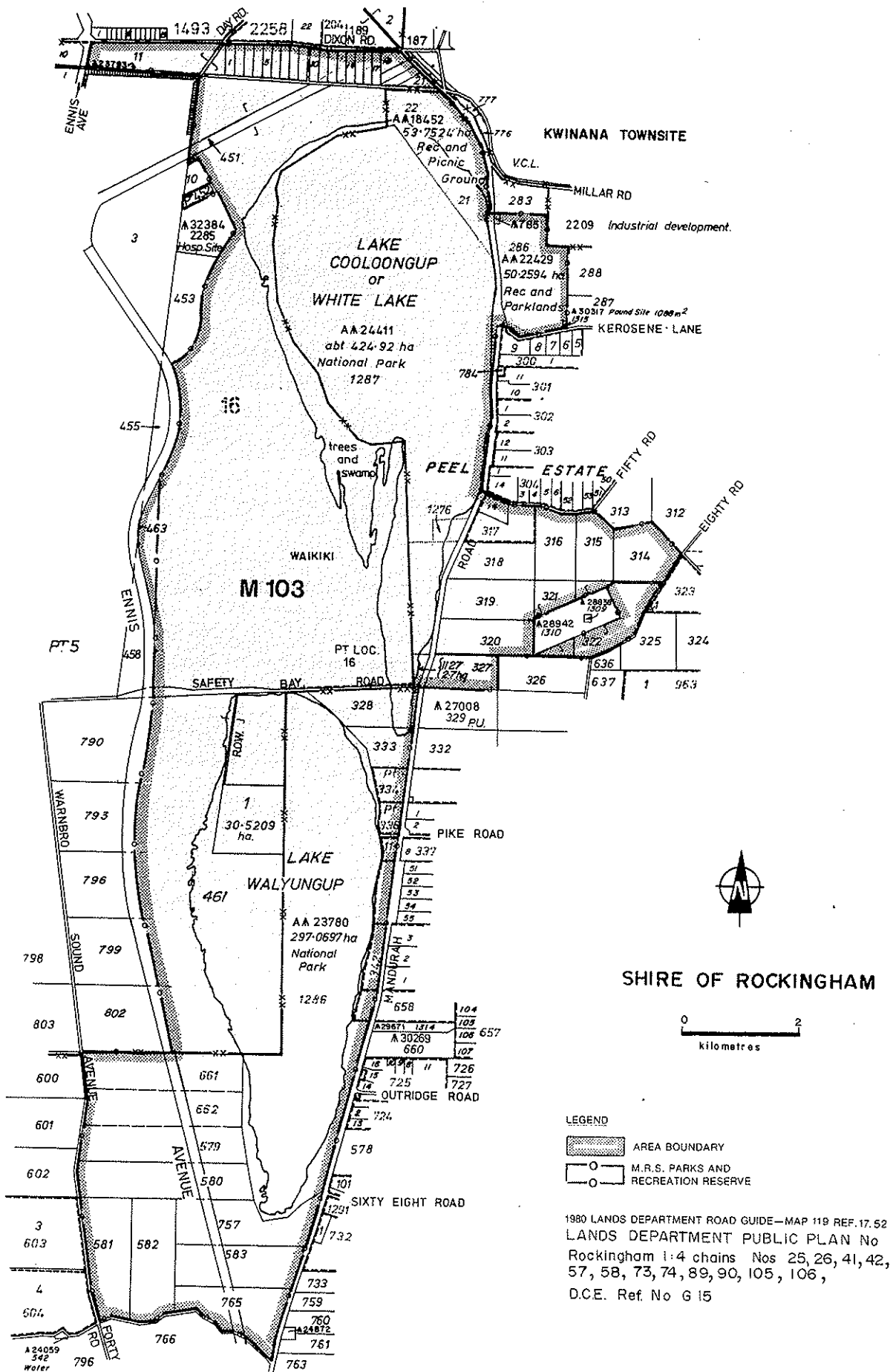


Figure 161

M104 RESERVES C31102 AND C33581, LEDA

The recommended area is situated about 8km east of Rockingham and comprises Reserves C31102, for Cemetery Site, and C33581, for Parks and Recreation, both not vested; vacant Crown land; and Kwinana Lot S33, privately owned freehold land (Figure 162). The whole area is within the Shire of Kwinana.

The area may be affected by future groundwater development which could affect water levels. There is potential for limestone extraction, but there are no existing mineral claims. The area is affected by Important Regional Road alignments and partially by land zoned Urban Deferred under the Metropolitan Region Scheme. Some widening of parts of the north side of the railway reserve has occurred.

The area has considerable conservation value because it is a relatively large area in a district where most of the land is freehold and likely to be developed.

The western section contains a ridge of limestone, which carries low open-heath. The land falls away to a line of swamps running north-south which are fringed by low woodland of flooded gum and swamp paperbark. Closed-sedgeland of various species of *Cyperaceae* is associated with the swamps. Further east there is an area of consolidated dunes covered by low open-forest of jarrah, banksia, woody pear and sheoak. In each type of vegetation there is a different suite of shrubs and herbs in the understorey, with orchids being especially well represented.

Important management considerations include: the protection of areas of high conservation value during the development of the proposed road and urban developments; encouraging the growth and regeneration of local indigenous flora; and the area's potential for limestone.

Recommendations:

M104.1 That Reserve C33581 be vested in the Shire of Kwinana.

M104.2 That the vacant Crown land be made a C Class Reserve for Parkland and that the Reserve be vested for a limited term of 10 years in the Town of Kwinana (see Recommendations 7-12 inclus., Chapter 3) and managed under a published management plan.

M104.3 That ways and means of protecting the conservation value of Kwinana Lot S33 be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

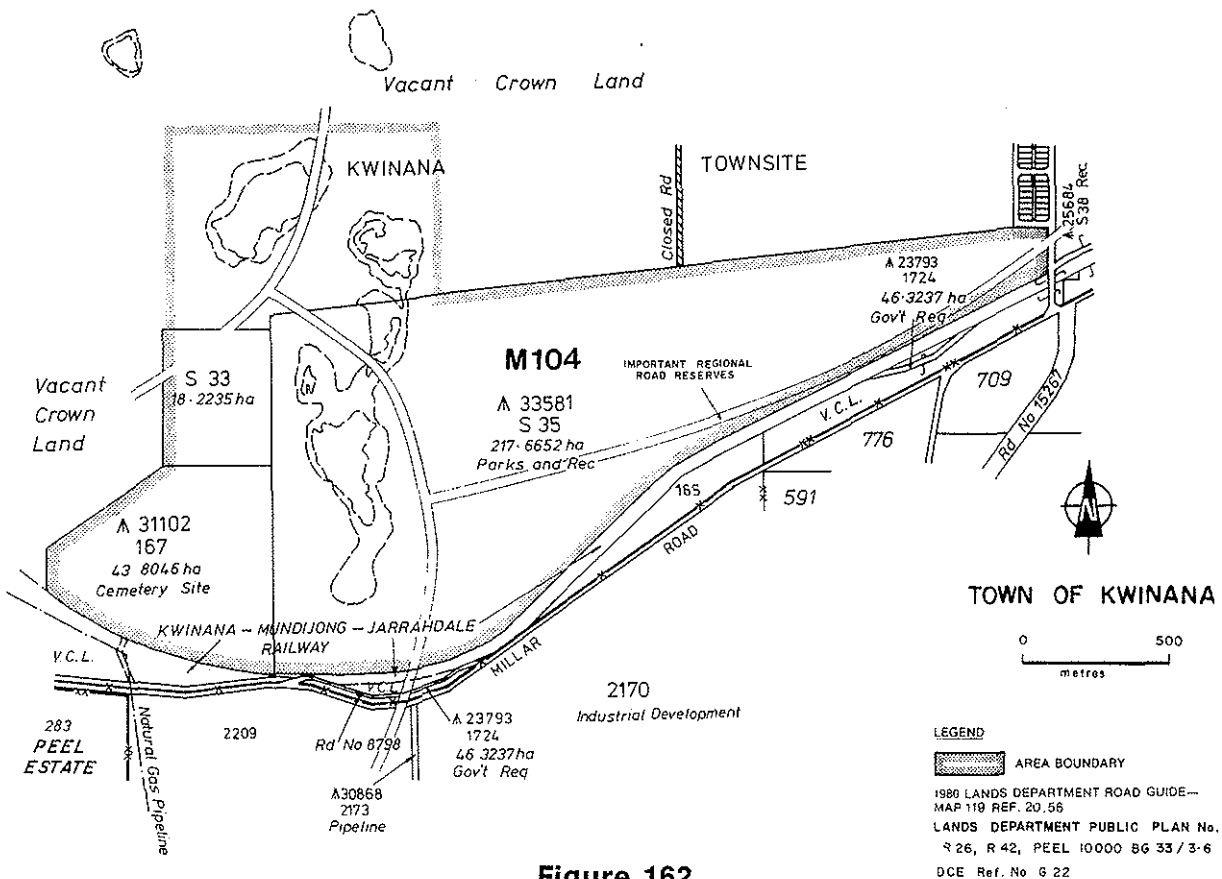


Figure 162

M105 LOWLANDS PROPERTY, WEST OF SERPENTINE

The recommended area is situated about 10km west of Serpentine and comprises part of Cockburn Sound Location 16, privately owned freehold land (Figure 163).

The Lowlands property consists of farmland, two significant sections of woodland and an historic homestead, the original part of which was built in the 1840s by Thomas Peel Jr. The Serpentine River flows through the property.

The eastern section contains a large area of woodland which, apart from a little clearing and the effects of light grazing, is relatively undisturbed. This section is very valuable since it is the only large area of its type remaining on the Coastal Plain between Perth and Bunbury. Its value is enhanced by the course of the Serpentine River which flows through it. The woodland, much of which is dense, is dominated by *Banksia* spp., of which four — slender, bull, holly-leaf and Menzies' banksia — are present. Marri, jarrah and sheoak also occur in the woodland, an unusual feature of which is the large number of woody pear trees. Much of the understorey is in good condition. There are many shrub species, including the rare *Brachyloma preissii*, and blackboy and zamia are common. Moonah and swamp paperbark are present in low-lying and swampy areas. The Serpentine River here is fringed by woodland of flooded gum, which is outstanding for its height and density, no similar area being known elsewhere. The river banks are stable and erosion is insignificant.

The south-western section also contains extensive woodland, much of it dense. Moonah and swamp paperbarks are common, the land being low-lying with a high water table. A significant feature is the abundance of Christmas trees. The Serpentine River Diversion, which forms the western boundary to the area, has a straight watercourse with high banks. There has been a considerable growth of flooded gum along the banks.

Fifty-seven species of birds, including both bush and water-birds have been recorded in the area. Grey kangaroos abound and there are also brush wallabies. Pools in the Serpentine River in the eastern section provide a healthy freshwater habitat, also shown by the presence of the freshwater mussel and crayfish.

The Serpentine River has been subjected to considerable changes and pressures over the years, and very little of its original fringing vegetation remains. This makes the eastern section of the Lowlands property of high conservation value. Since it is a large attractive remnant of Coastal Plain woodland containing a major river, the area constitutes open space of regional significance (see Figure 1, Chapter 4).

Recommendations:

- M105.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M105.2 That the Government recognise the conservation value of the uncleared woodland of the Lowlands property.
- M105.3 That the Government, in consultation with the land owner, investigate ways and means of protecting the conservation value of the uncleared woodland of the property through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

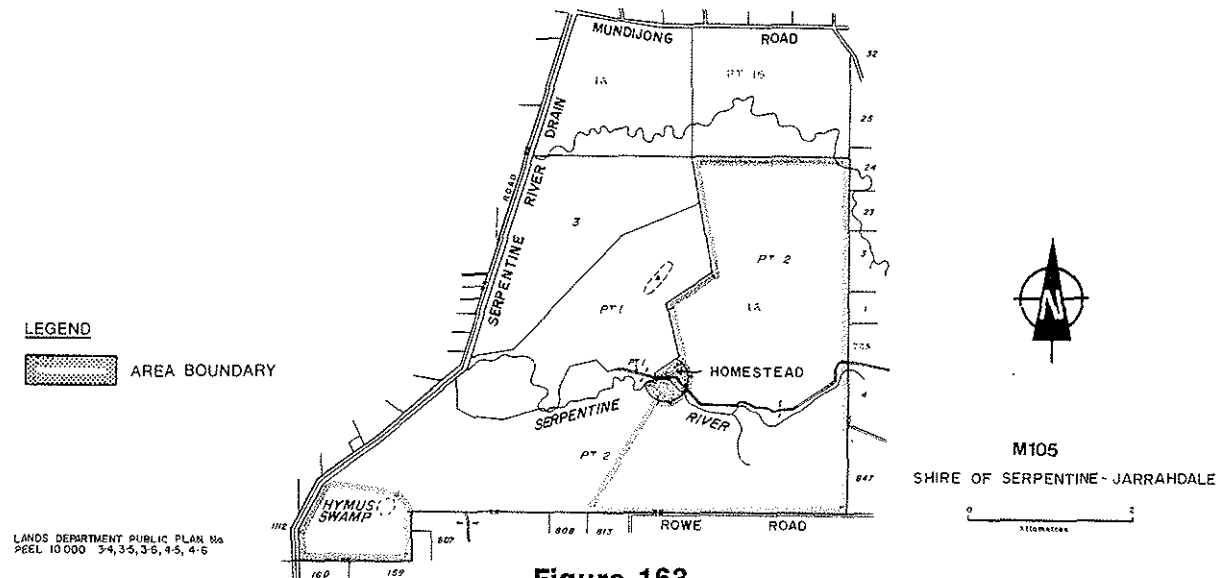


Figure 163

M106 PORT KENNEDY

The recommended area is situated about 50km south of Perth and comprises Reserves C20716, for Government Requirements, not vested; C33837, for Government Requirements (Community Welfare Department), vested in the Minister for Community Welfare; vacant Crown land; and part of Peel Estate lots 1092 to 1094, privately owned freehold land (Figure 164). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The MRPA has recognised the potential for recreation of Port Kennedy and has prepared a design concept for a regional recreation centre, to help cater for the anticipated future development of the district.

The southern portion of the recommended area may possibly be subject to a land swap with the Secret Harbour development which may affect its boundary alignment. The area may be affected by a proposed MWA sewage treatment plant and outlet, and a drain.

The peninsula consists of parallel, curving dunes, typical of the Coastal Plain south of Rockingham. Much of the area retains its natural vegetation, which is quite rich in species. Thickets of wattle are common and there are numerous tall shrubs typical of coastal species. There are also many perennial herbs — mostly common species, and a less frequently seen species of climbing milkwort. The area's conservation value is high, because there is little similar land available between Fremantle and Mandurah.

The area has obvious potential for recreation, and is already used for fishing, camping and off-road vehicles. An area of 17ha from lot 606 in the north-east has been designated for the use of off-road vehicles. There are squatters' shacks near the beach. The recreation potential could be even greater if a link is provided between Port Kennedy and the White Lakes Region Open Space (M103), and if the Secret Harbour Project is developed. This project site adjoins the southern boundary of the area and involves a proposal to dredge an area behind the primary dune to form an inland harbour connected to the ocean. Residential, commercial, tourist and recreation development would follow.

The recommended area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation and recreation value and its proximity to the Perth and Mandurah residential areas. Land tenure is varied and not all the land has conservation and recreation as primary management objectives: to enhance these values the management structure requires coordination. Important management considerations include: encouraging the growth and regeneration of local indigenous flora; removing shacks and tracks from the area; and providing direct public access to the open space of regional significance at M103 (Lakes Cooloongup and Walyungup).

Recommendations:

M106.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M106.2 That the Metropolitan Region Planning Authority consider "reserving" those portions not already "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

M107 PEELHURST, SINGLETON AND MADORA

The recommended area is situated on the coast about 10km north of Mandurah, and comprises Reserve C25043, for Recreation, and part of Reserve C27066, for Recreation, both not vested; lots 2 to 9, 15 and 16 (Mandurah Road subdivision), lots 1, 7, 492 and 688, and parts of lots 2, 3, 4, 10 to 12 and 101 (Cockburn Location 16), all privately owned freehold land (Figure 164). A small part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The eastern section is within an area for possible unconfined groundwater extraction. Groundwater extraction in the future may affect water levels and could involve the introduction of Catchment Zone regulations to restrict public access. The area will be slightly affected by widening requirements on the west side of Mandurah Road.

The MRPA's South-West Corridor Planning Structure advocated that the Peelhurst, Singleton and Madora townsites should become one urban settlement and the development of the strip on the west side of Mandurah Road for private recreation is considered a priority for implementation. The Mandurah Shire Council has recommended that the proposed east-west link between Singleton and Madora should be relocated further north to coincide with the Rockingham-Mandurah Shire boundary.

The area has extensive coastal dunes which are very valuable for their coastal vegetation and for recreational and aesthetic reasons. Their appearance and stability have been affected by nearby housing developments. Buffer zones of uncleared land should be left to preserve some

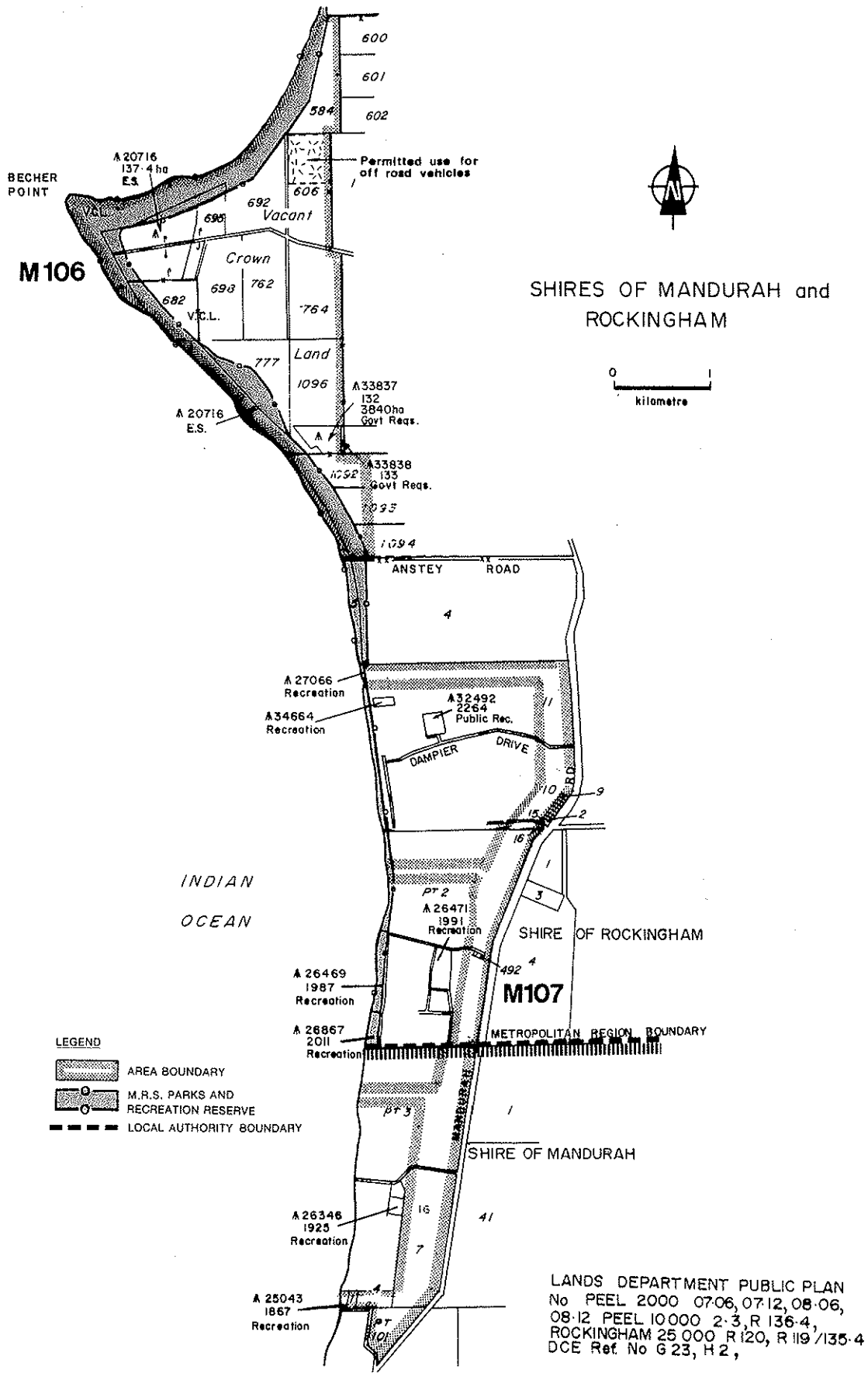


Figure 164

segments of the scenery and vegetation near the main Mandurah Road and between areas of housing. These buffer zones would restrict housing to west of the dune ridge, and provide east-west links of vegetation between Mandurah Road and the coast. The present practice of excluding housing from a strip adjacent to the shore should be continued. It is considered that these proposals would be to the benefit of all parties, as an enhanced residential environment has greater monetary as well as aesthetic value. In principle, public access to the reserved land would be unrestricted but, in practice, some advisory body would have to undertake development and maintenance of paths to avoid dune erosion. The onus would fall initially on the relevant local authority but might later devolve on a Residents' Association. Important management considerations include: the provision and maintenance of pathways; the prevention of dune erosion; the involvement of local residents in the management of the dunes; and the prohibition of active recreation activities which might disturb and inconvenience residents.

Recommendations:

M107.1 That Reserve C25043 be vested in the Shire of Mandurah.

M107.2 That Reserve C27066 be vested in the Shire of Rockingham.

M107.3 That ways and means of protecting the area's recreational and landscape values be sought through planning procedures to be developed as recommended in Recommendation 14, Chapter 4.

M108 GOEGRUP LAKES

The recommended area is situated a few kilometres north-east of the Mandurah townsite, and comprises Reserves C26351 and C35283, both for Public Recreation, C25360 and C25846, both for Recreation, all not vested; Reserve C32726, for Public Recreation, vested in the Shire of Murray; part of lots 1A, 3, 5, 43, 93, 96, 214 and 217 and part of lots 2 and 3 adjacent to Rogers Road (Cockburn Sound Location 16), and part of Peel Estate lots 1088 to 1090, privately owned freehold land (Figure 165).

The area could be used as a drainage area for receipt of run-off during winter. Such use would necessitate construction of pipelines and diversion works. The area may be affected by the proposed Perth-Bunbury Highway.

The owners of the unreserved portion of Goegrup Lake reportedly wish to develop the area for housing, a development which would adversely affect wildlife. There has been a proposal to dredge shallow areas for motor-boats, although exclusion of motor-boats in favour of canoeing, rowing and sailing would be more compatible with conservation of the lake's wildlife.

The area provides a major water and loafing place for water-fowl and an important feeding and breeding ground for mullet, prawns and crabs. Stands of various paperbarks surround the lakes and swamp sheoak, samphire and shore rush grow along the water's edge.

Duck shooting has apparently become popular in the area since the lakes of Yalgorup National Park were closed to this activity.

The area contributes to open space of regional significance along the Serpentine River (see Figure 1, Chapter 4) because of its high conservation and recreation values, and its proximity to the Mandurah residential area.

Recommendations:

M108.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

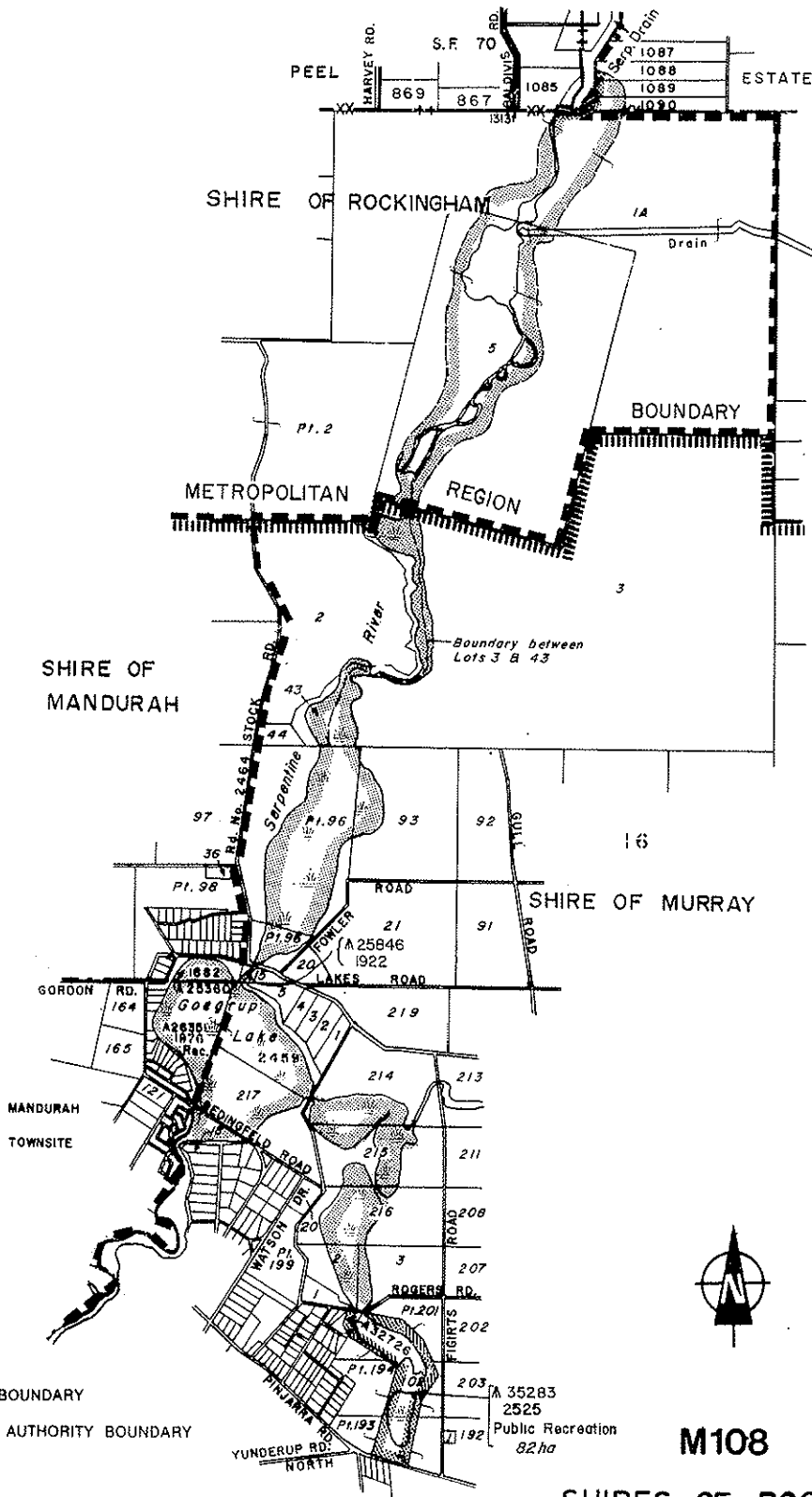
M108.2 That the purpose of Reserve C26351 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

M108.3 That Reserves C25360 and C25846 be cancelled and their areas added to Reserve C26351.

M108.4 That the purpose of Reserve C32726 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.

M108.5 That Reserve C35283 be cancelled and its area added to Reserve C32726.

M108.6 That the Shire of Murray consult with the Department of Conservation and Environment and the Waterways Commission concerning any development proposal which may affect the area.



LANDS DEPARTMENT PUBLIC PLAN No.
 WELLARD 1:25 000 SW, 380/40 R 249-4
 Pi 9-4, Pi 10-4, Pi 25-4, Pi 26-4, Pi 41-4,
 Pi 42-4, Pi 58-4, Pi 74-4
 DCE Ref No H 3

M108
SHIRES OF ROCKINGHAM,
MANDURAH and MURRAY

0 3
 kilometres

Figure 165

Appendix C

SUMMARIES OF PUBLIC COMMENTS ON SPECIFIC LOCALITIES IN THE SYSTEM 6 STUDY REPORT (GREEN BOOK) APRIL, 1981

A great many submissions received during the Green Book's public participation period between April and November, 1981, contained comments on specific localities and many of these have been included here, in a summarized form, to indicate some of the factors considered in preparing Recommendations for each locality of this Report. The summaries are not exhaustive and mainly include those comments which have some direct impact on the intent of the Green Book's Recommendations. Other submissions which gave general support for Recommendations have not been included here. These submissions should therefore be seen in the context of overwhelming support given to the System 6 Study Recommendations in general.

COUNTRY LOCALITIES

C1 RESERVE C21164, COWALLA BRIDGE

WAWA and the Department of Lands and Surveys both state that the inclusion of "Parkland" in the reserve's purpose is unnecessary as appropriate types of recreation can be incorporated into the management plan.

Fencing of reserves is the responsibility of adjoining land owners except under exceptional circumstances (WAWA).

The Town Planning Department states that the area is zoned rural — The Town Planning Scheme could be amended. Also the management plan should take into account the Special Rural Zone to the east.

C2 MOORE RIVER NATIONAL PARK

The MRD comments that Reserve C33032 is separate from the remainder of C2. It should be vested in the Commissioner for Main Roads rather than be added to Reserve C28462.

The National Parks Authority submits that the vCI should be consolidated with the park and managed accordingly.

The Department of Lands and Surveys says that Gingin Shire Council has permission to remove gravel and sand from Reserve 33032 subject to conditions. Consideration should be given to declaring a gravel reserve.

The Town Planning Department advises that Gingin Town Planning Scheme would require correction on review.

The Conservation Council of W.A. submits that Reserves C15928 and C18352 and the vCI should be added to Reserve C28462.

The Associated Minerals Consolidated Ltd. and the Extractive Industries Association submits that mineral exploration and mining potential should be protected.

The Australian Conservation Foundation, W.A. National Parks and Reserves Association, Conservation Council of W.A., R.F. May, J.H. Muir, B.J. Muir, P. Hussey, all suggest various combinations of vesting of the vCI and extra reserves in the National Parks Authority and WAWA.

Other submissions request release of vCI for farms because of vermin and 4WD problems, and also suggest that the National Park should include more of Moore River. The Amateur Canoe Association suggests negotiations with river front land owners to secure public access to navigable waters and pools along Moore River.

C3 RESERVES C15816 AND C25591, MOORE RIVER

Submissions propose the following: (a) C3 should be expanded to incorporate gorge country along Moore River and added to C4, (b) stock should be prevented from destroying vegetation along the river, and (c) Reserves C15816 and C25591 should both be vested in WAWA for conservation of flora and fauna.

Town Planning Department says the Gingin Town Planning Scheme would require correction on review.

C4 QUINS HILL

Recommendation C4.1 is opposed in 2 submissions: (a) because the owner of adjacent Swan Location 5434 was not informed prior to release of the Green Book and (b) because Westralian Sands Ltd. says the area has mineral potential and should therefore be jointly vested.

WAWA does not manage private land unless owners request it.

The Conservation Council of W.A. advocates purchase of the land to create a flora and fauna reserve. J. Muir says Location 5433 should be acquired immediately.

C5 RESERVE A3345, MOORE RIVER

One individual endorses the Recommendation.

C6 RESERVE C9676, YURINE SWAMP

WAWA says Water should not be included in the purpose of the reserve and the Town Planning Department states that the Gingin Scheme would require correction on review.

C7 BEERMULLAH LAKE

The Department of Lands and Surveys and WAWA support the purpose of recreation being added to conservation, but not "Parkland". WAWA is not involved in management of private land unless requested by owners. Gingin Scheme will require correction on review.

Other submissions include proposals for creation of a buffer zone, restricting skiing and motor boat use to weekends and outside the nesting season, total prevention of stock access and location of recreational facilities on only one or two sites.

C8 RESERVE C1224, BARTLETTS WELL

WAWA says that Water should not be included in the reserve's purpose.

C9 GINGIN AND BOONANARING BROOKS

The Department of Lands and Surveys says that: (a) option of utilising the area's agricultural potential should be left open, (b) Reserves C539 and C22602 adjoin each other and have been proposed for identical purposes, and so should be made one reserve.

The Conservation Council of W.A. says Reserve C22602 should be given "A" Class status and WAWA should negotiate the acquisition of freehold land around Gingin Brook.

WAWA does not want to be involved in management of private land unless requested by owners.

The MRD says Reserve C36629 was acquired for road materials and is still needed.

The Gingin Town Planning Scheme will require correction on review.

Westralian Sands and Associated Minerals Consolidated Ltd. suggest that access for exploration and mining should be left open.

W.A. Heritage Committee says the area has historic merit worthy of consideration by the vested authority.

Other submissions endorse the Recommendations and/or call for A Class reservation and making the area a National Park.

C10 LAKE WANNAMAL

WAWA is not interested in managing private land unless requested by owners.

The W.A. Field and Game Association opposes the construction of a storage dam on Brockman River because of the effect on downstream water courses which could destroy the water fowl habitat of Lake Chittering.

C11 RESERVES C965 AND C27028, UDUMUNG BROOK

The MRD says Reserve C27028 is still required for roadworks.

The Department of Lands and Surveys says if Chittering Shire Council is not willing to comply with Recommendation C11.1, the Shire could be allowed to retain vesting of a small portion of Reserve C965 for the purpose of Recreation and Camping.

C12 CARABAN MPA

The Forests Department and Campaign to Save Native Forests wish to see Swan Location 9757 included in State Forest, while the Conservation Council of W.A. proposes that the Location be included in M1 rather than C12.

The Forests Department submits that the Conservation and Land Use Committee (CLUC) Report Recommendations concerning water level monitoring and consultation with the Forests Department and EPA by the SEC, MRD and mining companies, should be reinstated.

The Department of Lands and Surveys advises that implementation of Recommendation C12.1 would require the agreement of the Industrial Lands Development Authority and the Department of Resources Development, as the Location was acquired for use by Wilbinga Steel Mill under the Industrial Development Act.

Associated Minerals Consolidated Ltd. requests that access to mineral sands exploration remain open.

C13 WABLING MPA

The Forests Department proposes that Reserve A24436 be made part of State Forest, and also calls for the CLUC Report Recommendation that the Forests Department and EPA be consulted at the planning stage of proposed works to be reinstated.

The Conservation Council of W.A. calls for amalgamation of C13 and M5 and for creation of a suitable firebreak along western boundary of C13.

The Campaign to Save Native Forests proposes that the poor area/boundary ratio of the MPA, and the inappropriate position of the buffer area in relation to the core, should be remedied by land acquisition.

The Department of Lands and Surveys advises, regarding Recommendation C13.1, that inclusion of "Landscape" as a purpose is inappropriate because it cannot be legally defined under the Land Act.

Associated Minerals Consolidated Ltd. requests that access to mineral sand exploration remain open.

C14 RESERVES C20366 AND C25431, LAKE MUCKENBURRA

WAWA endorses the Recommendations but says Water should not be included in the purpose.

The MWA says its groundwater schemes are unlikely to affect the area, in the near future at least.

The Department of Lands and Surveys says Recreation should be included in the purpose of Reserve C20366 instead of Parkland.

The Town Planning Department says the Gingin Scheme would require correction.

C15 RESERVES C24257 AND C26756, GINGIN

WAWA is not interested in managing or fencing private land except under exceptional circumstances.

J. and B. Muir suggest that fencing, buffer zones, weed control (e.g. Kikuya grass around Lake Bambun) and other measures to encourage the straw-necked ibis to nest must be taken.

The Town Planning Department says Gingin Scheme will require correction on review.

C16 GEOLOGICAL SITES, GINGIN

The Town Planning Department comments on Recommendation C16.1 that the procedures involved require discussion.

The W.A. Heritage Committee says the area has historic merit worthy of consideration by the vested authority.

Individual submissions support the Recommendations and propose management strategies such as fencing, setting up an information centre, preventing removal of material etc. One submission emphasises the need to fence Molecap Hill.

C17 LAKE CHANDALA, MUCHEA

The MRD says Brand Highway may require widening by 70m.

The Mines Department says C17 was not considered by the Commercial and Productive Use Committee and its mineral potential has not been assessed.

The Town Planning Department says Gingin Scheme would require correction on review.

The Department of Lands and Surveys says that an access strip to Reserve C37060 is now available for inclusion and that the Department of Fisheries and Wildlife has requested "A" class status for the reserve.

Individual submissions endorse the Recommendations but add that buffer zones should be used, private land should be acquired, fences erected and water levels maintained.

C18 BURROLOO WELL

The W.A. Heritage Committee says the area has historic merit worthy of consideration by the vested authority.

The Town Planning Department comments that cadastral information provided is incorrect-lot 5354 is not shown.

The Department of Lands and Surveys comments that public access should be maintained to the popular freshwater well.

C19 NEEDONGA AND CHITTERING LAKES

WAWA endorses Recommendation C19.1.

The W.A. Field and Game Association opposes the proposed pipehead dam on Brockman River.

C20 RESERVE C32807 MT. BYROOMANNING

The Town Planning Department advises that the land is not zoned.

C21 JULIMAR MPA

Both the Forests Department and the Department of Lands and Surveys propose in place of Recommendation C21.1 that the areas referred to be included in State Forest.

The Department of Fisheries and Wildlife has submitted a request to the Department of Lands and Surveys seeking vesting of Reserve A27595 in WAWA as a result of detailed Recommendations in the Muir Report.

The Department of Lands and Surveys advises that the Commonwealth is unlikely to agree to Recommendation C21.2 since it has recently acquired part of Reserve C29100 to provide continuity between Location 28184 and the eastern portion of Lot M1040. The Department of Administrative Services similarly suggests that the land will continue to be used for its present purpose.

It is submitted that the northern extreme of Julimar Brook catchment is subject to salt encroachment through nearby farmland clearing, and that runoff into the western side of the MPA is causing colonisation by pasture species.

C22 RESERVE C3156, BINDOON SPRING

WAWA endorses Recommendation C22.1.

The Department of Lands and Surveys points out that Reserve C3156 was re-gazetted from Gravel to Parklands and vested in the Shire of Toodyay in 1980. The vesting was sought by the Shire because of the historical significance of the area and continuance of that vesting would be appropriate.

The W.A. Heritage Committee says the area has historic merit worthy of consideration by the vested authority.

C23 RESERVE C22096, CULHAM

WAWA opposes Recommendation C23.1, saying the reserve should remain vested in WAWA for these reasons:

- (i) it is of biological importance in containing a cross-section of the area's landscape and supporting a large pygmy possum population.
- (ii) it is separated from the adjoining strip of State Forest by a dissected gully.

The Campaign to Save Native Forests endorses Recommendation C23.1.

C24 RESERVE 19904, WEST TOODYAY

WAWA endorses Recommendation C24.1.

The Department of Lands and Surveys says that Recommendation C24.1 may be unnecessary in view of that fact that the Shire Council obtained vesting in 1978 with the support of the Department of Fisheries and Wildlife and with the intention of protecting flora and fauna.

C25 MOUND SPRINGS, MUCHEA

WAWA endorses Recommendation C25.1

The Department of Lands and Surveys says that urban development at Muchea should not be encouraged because of the low-lying nature of the area and lack of water supply. The Department of Lands and Surveys should be involved in final deliberations following completion of the report proposed in Recommendation C25.1.

The Town Planning Department says Figure 19 is incorrect — Muchea townsite (shown as Reserve C2336) has been subdivided.

The Conservation Council of W.A. says freehold land in C25 should be acquired and the area made a "C" class conservation reserve. Also it proposes that the Geological Survey should investigate the hydrology of the area with a view to preventing groundwater intake from affecting the Springs.

C26 RESERVE C4070, NORTH OF BULLSBROOK

The Town Planning Department advises that the land is not zoned.

C27 BEELARING AND GOONARING SPRINGS

Toodyay Shire Council says freshwater swamps contained in Reserves C659 and C529 are important to the area's environment and clearing of their watershed poses a threat to them. The whole area outlined in Figure 21 should be reserved for protection of these swamps.

WAWA endorses Recommendations C27.1-2. It states regarding Recommendation C27.3 that WAWA does not wish to manage private land; however the land could be obtained by making acquisition a condition of subdivision.

The Department of Lands and Surveys sees no point in amalgamation of the two reserves as proposed in Recommendation C27.1.

A larger number of submissions express concern at clearing of land in the watershed of the springs and call for the whole area outlined in Figure 21 to be made a conservation reserve.

C28 RESERVES NEAR WUNDOWIE

Northam Shire Council opposes cancellation of Reserve C11619 (Recommendation C28.2).

The Forests Department says extraction of gravel from C28 should continue to be permitted to ease demand for gravel from State Forest.

The Extractive Industries Association says the mining potential of the area should be protected.

The Conservation Council of W.A. proposes that C14275 (including proposed additions) should be solely for the purpose of conservation and vested solely in WAWA.

The Campaign to Save Native Forests endorses the Recommendations and the Northam Shire Council's proposals for C14275.

The Department of Lands and Surveys makes these comments:

- i) Recommendation C28.7 appears to conflict with Recommendation C28.2.
- ii) Northam Shire Council is unlikely to forego its vesting of C2576 because it requires the reserve for rubbish disposal purposes and is in fact seeking an additional 20ha from C14276 (Department of Lands and Surveys supports the application).
- iii) MRD gravel requirements may necessitate excision of parts of C4623, C14275 and C14276. Forests Department has objected to excision of such areas but would allow gravel extraction under certain conditions.
- iv) A decision on the vCI (referred to in Recommendation C28.4) should be deferred till Department of Lands and Surveys has investigated the land.
- v) Recommendation C28.1 — the owner of Avon Location 23088 has been given permission to construct a dam in C14275; also a rubbish site has been sited in the reserve.

C29 RESERVES NORTH-WEST OF CLACKLINE

Northam Shire Council endorses the Recommendations, though conservation of flora and fauna should have priority over mining.

The Secretary for Railways says that until the narrow gauge railway to Wundowie is officially closed, the status of Railway Reserves C1494 and C8518 cannot be changed.

The MRD says that C29 contains a large area of gravel which has been evaluated and the possibility of extraction as it would affect the rare orchid is being discussed with the Department of Fisheries and Wildlife.

WAWA endorses Recommendations C29.1-2. Recommendation C29.3 is endorsed except that two further areas of vCI — Avon Location 15435 and the unnumbered lot appearing in Figure 23 — should also be included.

The Conservation Council of W.A. and Campaign to Save Native Forests both endorse the Recommendations except for the joint vesting proposals.

The Department of Lands and Surveys says that C1494 and C8518 are "probably" still required for railway purposes. Although Agnew Clough operations, which the adjacent line formerly serviced, have been scaled down, the line may still be needed for freighting ore and silica sands. Should Reserve C1494 happen to become available for alternative use, consideration should be given to its recreation value since it is within Clackline townsite.

C30 RESERVE C30363, INKPEN ROAD

Recommendation C30.1 is endorsed by WAWA, Northam Shire Council and Campaign to Save Native Forests.

C31 RESERVES C25860 AND C30393, BERRY BROW ROAD

Northam Shire Council endorses the Recommendations.

The Zoological Gardens Board considers the Reserves "completely acceptable" as the site for the proposed purpose.

The Forests Department says that extraction of gravel from Reserve C25860 should be allowed to continue, to ease demand for gravel from State Forest.

The Campaign to Save Native Forests endorses Recommendation C31.1; it comments on Recommendation C31.2 that use of the land for a natural parkland zoo for native animals might be preferable.

The Department of Lands and Surveys comments on Recommendation C31.2 that because the Board is constituted under the Zoological Gardens Act (1972) to manage land in the Schedule to the Act, the proposed vesting would require legislative amendment to the Act.

C32 DALE MPA

The area is to be nominated for inclusion in the Register of the National Estate.

The Campaign to Save Native Forests calls for the buffer area to be extended so as to surround the core, and for the locality to be vested in an authority other than the Forests Department.

The PWD may wish to establish a benchmark catchment in the MPA.

C33 RUSSELL MPA

The area is to be nominated for inclusion in the Register of the National Estate.

The Forests Department proposes that the CLUC Report Recommendation that the MRD consult with the EPA and the Forests Department at the planning stage of proposed works be reinstated.

The Campaign to Save Native Forests proposes that the locality be extended northward to take in the creek immediately north of Willies Road. Mining and construction of new roads is opposed.

C34 GUNAPIN MPA

The PWD opposes increased recreational access to the MPA because it is within the salt-sensitive zone, is close to Perth and so likely to be subject to heavy pressure if not protected, and because further research is required on the subject.

Extensions to the MPA are proposed, northwards to include two areas of scenic value, and eastward to include all or part of vCI Lot 23750.

C35 SULLIVAN MPA

The Forests Department submits that the management arrangements to apply in the locality are not made clear: the Department suggests that itself and WAWA manage their vested portions independently.

Inclusion of the whole of Location 23752 (vCI) in Reserve C34442 is proposed.

The Department of Lands and Surveys opposes inclusion in Reserve C34442 of the area of vCI immediately north of Locations 28061 and 28060 — this area does not contribute to catchment of Dobaderry Swamp and should be made available for farm buildup. The vCI east of Dobaderry Swamp has been surveyed with the intent that it be included in Reserve C34442 — Mines Department approval has been obtained but the local authority has expressed some opposition.

C36 EAGLE HILL MPA

The Forests Department wishes to see the CLUC Report Recommendation that the MRD consult with the EPA and the Forests Department at the planning stage of proposed works reinstated. The Campaign to Save Native Forests opposes bauxite mining in C36 and wants MWA access restricted. It also suggests that localities C36-39 be amalgamated.

C37 BROOKTON AND ALBANY HIGHWAYS

The W.A. Heritage Committee supports the inclusion of the area in the Register of the National Estate.

The Forests Department opposes inclusion of the area in the Register: it sees this as inappropriate because roadworks or intensive management for dieback may become necessary. However the Forests Department is prepared to manage the area to enhance its recreation and aesthetic values. PWD endorses the Recommendations, as do a number of other individuals and community groups. The Conservation Council of W.A. wants the area made a conservation MPA; it considers management for floral value Recommendation C37.2 incompatible with conservation and scientific values because it would involve frequent burning.

C38 COOKE MPA

The Forests Department proposes that Reserve C335 be made part of State Forest; the Department of Lands and Surveys proposes the inclusion of the eastern section of the reserve.

The Forests Department submits that the SEC and MRD should be required to consult with the EPA and the Forests Department at the planning stage of proposed works.

C39 WINDSOR MPA

The Forests Department wishes the CLUC Report Recommendation that the SEC and MRD consult with the EPA and Forests Department at the planning stage of proposed works to be reinstated.

C40 BOYAGARRING MPA

Several submissions call for all or part of C40 to be made available to local owners for farm build-up:

- the Brookton System 6 Study Committee proposes that all but 60ha of C40 be made available; it states that there are 21 nearby owners requiring additional land to maintain farm viability. The area has a six month growing season, no droughts and is close to essential services.
- These arguments are supported by the Central Regional Development Committee, Country Regional Councils Association of W.A., and Farmers' Union of W.A.

The Forests Department wishes the vCI to be made part of State Forest. It also wants the CLUC Report Recommendation concerning public utilities reinstated.

C41 LUPTON MPA

Several submissions propose release of land in C41 for agricultural purposes:

- The Brookton System 6 Study Committee forwards the same arguments as for C40. It contends that the locality contains no valuable water supplies.
- The Central South Regional Development Committee, Country Regional Councils Association of W.A., and the Farmers' Union, all support the Brookton System 6 Study Committee's submission.

The Department of Lands and Surveys advises that Reserve C26666 is under consideration by the Working Group on Land Releases and wants no action taken till completion of the Group's report. Also, it advises that the vCI has been examined and certain parts found suitable for release to adjacent land-holders; the Department wishes to be consulted concerning Recommendation C41.2.

The Forests Department proposes that Reserve C26666 and the vCI be made part of State Forest as recommended in the CLUC Report.

C42 DUNCAN MPA

The Forests Department proposes that Reserves C601, C334, and C528 and the vCI as well as land owned by the MWA and PWD should be made part of State Forest as recommended in the CLUC Report. The Forests Department also wants the CLUC Report Recommendation that public utilities consult the EPA and Forests Department at the planning stage of proposed works reinstated.

The Department of Lands and Surveys advises that C528 is vested in the Shire of Boddington and implementation of Recommendation C42.3 will require the Shire's agreement.

C43 GYNGOORDA MPA

The Forests Department wishes the CLUC Report Recommendation that the EPA and the Forests Department be consulted at the planning stage of proposed MRD works, and also over nearby subdivisions, to be reinstated. The PWD may wish to establish a benchmark catchment in the area.

C44 WANDERING MPA

The Forests Department calls for Reserves C18534, 145/25 and 160/25 to all be cancelled and added to State Forest as recommended in the CLUC Report. Also, the CLUC Report Recommendation that the MRD consult the EPA and the Forests Department at the planning stage of proposed works should be reinstated.

The Campaign to Save Native Forests proposes that any adjoining uncleared land be acquired to improve the MPA's area/perimeter ratio. Also realignment of Albany Highway should not be allowed to diminish the area's conservation value.

C45 ROTTNEST ISLAND

The Department of Administrative Services points out that Kingston Barracks are on Commonwealth-owned land. The Department would like to be further informed concerning any effect implementation of the Recommendations for C45 is likely to have on the land.

The Harbour and Light Department supports the Recommendations only if boating access is retained.

The W.A. Museum says that the boundary of the Aquatic Reserve proposed for the eastern side of the Island should be extended round Parker Point and Salmon Point. The one between Salmon and Parker Points is of far greater scientific and conservation value than the northern part of the Reserve since it is an extension of the Pocillopora Reef system and attracts numerous tropical species.

The Department of Lands and Surveys disagrees with the statement that "there are shortcomings in the Act under which the Rottnest Island Board is constituted". The Board is constituted under the Parks and Reserves Act which cannot give specific directions to individual boards because of the wide range of such boards. However there is no legal impediment to implementation of Recommendation C45.2 provided it receives Government endorsement.

A large number of submissions endorse the Recommendations and stress the need for protection of the island's flora and fauna.

Dr. R.A. Warman calls for Mable Cove to be included in the Aquatic Reserve on the west side of the island; also calls for snorkle spear-fishing and amateur cray fishing to be allowed to continue within the reserve because the area provides safe conditions not to be found further out to sea. Professional cray fishing should be prohibited within half a mile of the island.

Rottnest Island Board makes these comments:

- i) the Board has control of private mooring sites.
- ii) there is no point in creating the proposed Aquatic Reserves.
- iii) Recommendation C45.2 is unclear and outside the mandate of the System 6 Study; the Board would be too cumbersome with inclusion of various scientific representatives.
- iv) most of the measures proposed in Recommendations C45.3 conform to existing Board policies; C45.3(b) is unnecessary; regarding C45.3 (c) and (d), the Board has resolved that development be confined to the area north of the line drawn between Geordie Bay and Bickley Bay.

C46 CARNAC ISLAND

The Department of Lands and Surveys says that inclusion of any land surrounding A26646 within the existing reserve would be preferable to the creation of a proposed Aquatic Reserve.

WAWA endorses Recommendation C46.1 except that there is no such thing as a "C" class Aquatic Reserve under the Fisheries Act. The reserve's purpose needs to be defined.

The Harbour and Light Department has no objection to Recommendation C46.1 provided boating access to Carnac Island is guaranteed.

West Coast Roei Abalone Divers' Association says that professional roei abalone fishermen rely largely on the C46 area for their livelihood and assurances are sought that no restrictions will be placed on their harvesting of this area. A system of rolling closures ensures that the area is not overfished.

Several other submissions endorse Recommendation C46.1.

C47 RESERVE C14629, NORTH DANDALUP

Murray Shire Council endorses Recommendation C47.1.

The Campaign to Save Native Forests says the reserve should be vested in the Department of Fisheries and Wildlife.

The Department of Lands and Surveys submits that cancellation of Reserve C14629 and inclusion of it in State Forest No. 22 may be preferable to Recommendation C47.1.

C48 RESERVE C19413, NORTH DANDALUP

Murray Shire Council endorses the Recommendation.

The Campaign to Save Native Forests calls for the reserve to be vested in the Department of Fisheries and Wildlife.

The Department of Lands and Surveys says cancellation of Reserve C19413 and inclusion of it in State Forest No. 14 may be preferable to the Recommendation.

C49 RESERVE C21038, NORTH DANDALUP

Murray Shire Council endorses the Recommendations.

The Conservation Council of W.A. says Reserve C21038 should be solely for the purpose of conservation and should be vested solely in WAWA.

The Department of Lands and Surveys says that waterfalls exist in Reserve C21038 which have been described as the best in the South-West. Consideration should be given to allowing public access to them.

C50 PEEL INLET

WAWA makes these comments on the Recommendations:

C50.1 — is endorsed, except that implementation should not require agreement of the Shire of Murray.

C50.3 — is endorsed, except that there is no such thing as a "C" class Aquatic Reserve under the Fisheries Act. WAWA also wants the boundary of this area amended.

C50.5 — is endorsed with the same proviso as for C50.3; also the drainage channel encroaching on the proposed Aquatic Reserve should be excluded.

The Waterways Commission advises that the Peel Inlet Management Authority (PIMA) recommends that the boundary of the proposed reserve be adjusted to include the dredged channel at the entrance to Yunderup Canals. It proposes that the wetland vegetation and a suitable buffer zone on freehold lots 842, 1262, 295, 452, 223, 276-278, 259, 205 and 287 be made part of Reserve B4990. Part E3 of the PIMA's Management Programme is considered relevant to Recommendation C50.7, and PIMA should be consulted on definition of management objectives.

PWD calls for Reserve C8185 to be under the management of PIMA.

The Department of Lands and Surveys advises that Mandurah Shire Council has already instigated control measures for the preservation of native fauna on Reserve C8185 in cooperation with the department.

Feilman Planning Consultants point out that Figure 37 in the Green Book shows one of the recommended areas on the west side of the entrance to Peel Inlet incorrectly. This portion of land is owned by Parys Esplanade Ltd and development plans are entertained: it is requested that the area boundary be amended to cover only the southern part of this.

John Holland (Constructions) Pty. Ltd. has plans for a canal development on the land opposite Channel and Creery Islands. Development plans incorporate a buffer zone of 150m between the development and the moist foreshore area of the entrance channel, with an additional 50m buffer provided by an artificial waterway.

C51 HARVEY ESTUARY

Murray Shire Council wants to be given vesting of Reserve C27528 as it lies in an area earmarked for further development.

The Department of Fisheries and Wildlife, to provide a buffer for the Aquatic Reserve proposed in Recommendation C51.5, wishes to acquire freehold land to the west and to have Reserve 17318 included in the buffer.

WAWA calls for the northern boundary of the proposed Aquatic Reserve to be located further south (shown on attached map) and likewise with Reserve C2990. It comments on Recommendation C51.2 that Reserve C2990 is within Mandurah Shire, not Waroona — opposes the Recommendation in any case because it does not wish to be involved in management of private land.

The Waterways Commission advises that PIMA's Management Programme provides for development of up to 20ha of Reserve C2990 for camping purposes; the rest of the southern portion has been designated for inclusion in Reserve A23756. The Commission proposes amendment of the northern boundary of the proposed Aquatic Reserve.

C52 LAKES McLARTY AND MEALUP

The Waterways Commission advises that the PIMA Management Programme states that Lake McLarty should be preserved as a freshwater source for birdlife by 'regulating water levels with a "check structure system" on the outlet pipe according to PWD specifications'. PIMA should be consulted on definition of management objectives.

WAWA opposes Recommendation C52.3 because it does not wish to be involved in management of private land.

C53 COOLUP RESERVES

Murray Shire Council endorses Recommendation C53.1.

WAWA comments on the Recommendations that of the four reserves only A20585 should be made a conservation reserve, this being most compact and least affected by other uses. Reserves C31437 and C31438 could be vested in the MRD as a roadside conservation area.

The Department of Lands and Surveys says that drainage requirements in C53 will need to be accommodated. Reserve C31439 was created as part of the Mayfield Drainage System.

C54 YALGORUP NATIONAL PARK

A number of submissions propose inclusion of Reserve 24198 (Tims Thicket) in the National Park.

The MRD opposes inclusion of C24198 in the Park until the problem of unsolved negotiations between the National Parks Authority and Mandurah Shire Council (concerning MRD interest in obtaining limestone from the area) has been settled.

The Department of Lands and Surveys advises that boundary improvement negotiations have been proceeding between the National Parks Authority, the Shire and the Department which "probably" affect reserves within C54. These should be completed before implementation of Recommendation C54.1.

The Town Planning Department advises that the northern section of C54 is the subject of proposed Mandurah Town Planning Scheme No. 11 which proposes land exchanges between the National Parks Authority and private landowners.

The National Parks Authority considers that it would be impractical to consult all, or even most, local landowners concerning definition of management objectives.

C55 CLIFTON MPA

The Forests Department wishes the CLUC Report Recommendation that Waroona Shire Council consult with the EPA and the Forests Department at the planning stage of proposed limestone extraction to be reinstated.

The Campaign to Save Native Forests opposes the road plans and adds that land should be acquired to enlarge the MPA.

C56 McLARTY MPA

The Campaign to Save Native Forests proposes extension of the tuart strip into the adjoining plantation following clearing of the pines, and also calls for monitoring and control of recreational use of the MPA.

Some opposition to mining is registered in submissions.

C57 MYALUP MPA

The Forests Department wishes the CLUC Report Recommendation that the EPA and Forests Department be consulted at the planning stage of proposed works to be reinstated.

The Extractive Industries Association want the adoption of the Commercial and Productive Use Committee's Recommendation opposing reservation of the area because of its limestone potential.

The Mines Department wants the limestone option left open.

The Campaign to Save Native Forests opposes limestone mining and calls for acquisition of private land separating core and buffer areas.

C58 RESERVE A23172, HARVEY RIVER

The Waterways Commission endorses Recommendation C58.1. PIMA should be consulted prior to preparation of a management programme.

C59 RESERVE C22199, WAGERUP

WAWA endorses Recommendation C59.1.

C60 RESERVES C12049 AND C12632, HARVEY

WAWA says that the purpose of Reserves C12049 and C12632 should be solely conservation of flora and fauna.

The Department of Lands and Surveys calls for the purpose of the reserves to be amended to Conservation of Flora and Fauna. It advises that Figure 42 is now incorrect as Riverdale Road has been deviated through Reserve C12632, leaving a small severance. Surveyors preparing subdivision of Wellington Locations 1021, 1022, 3070, 3071 have proposed that the area of Reserve C12632 south of Riverdale Road be released for inclusion in the subdivision.

C61 RESERVE C24472, LAKE PRESTON

No submissions.

C62 RESERVE C2547

The Department of Lands and Surveys advises that Reserve C2547 was originally reserved because it was considered potentially useful for camping. The drainage requirement will have to be accommodated.

C63 MYALUP SWAMP AND MIALLA LAGOON

WAWA opposes Recommendation C63.1 because the Authority does not wish to be involved in management of private land.

PWD has no objection to the Recommendations but wishes to be consulted on drainage works.

One submission opposes any change to present management of the swamps whose competency is demonstrated by: (i) retention of sufficient water for breeding of game, (ii) availability of ample feed for birds and animals, (iii) the creation of extra clear water for breeding by partial draining of swamp.

Two others submissions stress the importance of protecting fauna in the area; creation of a Conservation Reserve through land acquisition is proposed.

C64 RESERVE C2517, HARVEY

No submissions.

C65 BENGER SWAMP

WAWA endorses Recommendations C65.1-2; comments on Recommendation C65.3 that "a management plan will be prepared in due course".

The Conservation Council of W.A. endorses Recommendation C65.1 and calls for the privately-owned land to be acquired and added to Reserve C34811.

Several other submissions endorse the Recommendations.

Pina Cocivera makes a number of points: private land should be acquired; irrigation and drainage should not be allowed, so as to protect water levels important for freckled duck; wild grasses should be controlled; warders should be employed; the area should be available in part for recreational use.

C66 LESCHENAULT INLET

The Waterways Commission points out that Figure 46 shows Shire boundaries incorrectly and comments that Reserve C13531 is vested in the City of Bunbury yet is within the Shire of Harvey: Leschenault Inlet Management Authority (LIMA) recommends that it be vested in the Department of Fisheries and Wildlife for Conservation of Flora and Fauna. It is submitted that C66 should extend over the whole of the Inlet and not exclude waters south of the line between the Cut and Collie River. The following comments on the Recommendations were also made:

C66.1 — is opposed; it is impractical because the Reserve has been used for agriculture as part of Lot 48 for decades; the land should be sold to the adjoining owner.

C66.2 — is opposed; this area is already vested in the local authority.

C66.3 — is endorsed; will require extension of LIMA management area boundary.

C66.4 — parts (a) and (b) are endorsed, relevant management objectives being outlined in LIMA programme draft in sections E1, E2 and E4; part (c) is endorsed subject to investigation in LIMA 1981/82 budget; it is noted that the Harbour and Light Department does not consider restriction of power boats practicable as suggested in part (d).

The Commission's policy allows for maintenance dredging on existing navigation channels to be carried out — details are provided on locations of such operations.

The Harbour and Light Department opposes Recommendation C66.4 (d) as being not in accord with LIMA Recommendations and unfair on users of high-speed craft.

The Department of Fisheries and Wildlife submits that an area in the northern part of the estuary (outlined in attachment to submission) is of special value in providing a variety of habitats for water birds and should be made a nature reserve. Reserve A18414 is cleared and should be vested in the Harvey Shire or the MRD as a stopping place. Recommendation C66.2 is opposed.

Harvey Shire Council endorses Recommendation C66.3 though suggests that LIMA cannot successfully manage the area without acquisition of the land by the Crown.

PWD opposes Recommendation C66.7 as contrary to LIMA approval for a project concerned with erosion prevention at the entrance to the estuary for which funds have been foreshadowed in 1982/83 budget. PWD does not consider dredging to be necessarily detrimental to the estuary's ecosystem and considers that prohibition would hinder effective management.

The Department of Lands and Surveys submits that, in view of the distance between Reserve A18414 and the parcels of vCI, separate reservation would be more appropriate. Reservation of land on the ocean boundary of Location 165 is opposed because the area has no direct relationship with the Inlet.

The MRD advises that the Bunbury Highway could require widening by up to 30m.

The Campaign to Save Native Forests endorses Recommendations C66.1 — C66.5 and C66.7. C66.6 should be amended to recommend against further subdivision taking place in the area.

The Australind Progress Association proposes: extension of Buffalo Road to the beach to improve access for recreation; protection of Egret Swamp; use of spoil from dredging to create islands for birdlife habitats.

The W.A. Naturalists Club proposes that: the samphire flats be made an A Class nature reserve vested in LIMA; the same apply to the aquatic area and immediate shore of peninsula; LIMA also control the remainder of the estuary, peninsula and eastern shore and designate areas of special importance. The shallow area in the vicinity of the new Preston River entrance should be so designated because of its importance for migratory waders.

W.A. Members of the Australasian Wader Studies Group of the Royal Australasian Ornithologists Union (RAOU) also consider the mouth of Preston River diversion to be of particular importance for water-birds.

RAOU, (W.A. Group), considers freshwater soaks important and calls for their protection; calls for La Porte Egret Swamp to be acquired and vested in W.A. Wildlife Authority; wants 4WD vehicles and trail bikes excluded from C66.

The Conservation Council of W.A. endorses the concept of a regional plan for C66.

A number of submissions endorse the Recommendations.

C67 BRUNSWICK, COLLIE AND WELLESLEY RIVERS

One landowner opposes development of a riverine linear park in the area.

The Waterways Commission submits that for consistency all areas of Collie River contained in the LIMA area should be included in C67. Both Recommendations are endorsed; both are covered in the draft Leschenault Inlet Management Programme with particular reference being made to foreshore reserves.

C68 ANGLESEA ISLAND

WAWA endorses the Recommendations.

The Waterways Commission endorses the Recommendations.

PWD has no objection to the Recommendations provided they do not impede possible PWD flood control works.

The Campaign to Save Native Forests endorses the Recommendations and calls for removal of tailing dump areas.

B.K. and C.T. Masters also call for disposal of tailings in the area to be stopped, and wants silting up of mudflats to be investigated.

The Royal Australasian Ornithologists Union proposes that the area be investigated for Black Bittern population.

C69 BIG SWAMP, SOUTH BUNBURY

The W.A. Field and Game Association endorses the Recommendations.

B.K. and C.T. Masters comment on Recommendation C69.2 that inclusion of Water as a purpose is inconsistent with the area's history of use as a rubbish disposal site.

C70 SOUTH BUNBURY COASTAL LAND

The Campaign to Save Native Forests proposes that the whole area be made a reserve for conservation and recreation and be vested jointly in WAWA and the City of Bunbury. The considerations raised in Recommendation C70.2 are endorsed.

C71 RESERVES NEAR DALYELLUP

B.K. and C.T. Masters submit that "Caravan Park" should not be part of the purpose of Reserve A23000: there are more appropriate sites for a park elsewhere in the region.

Associated Minerals Consolidated Ltd. says access to mineral sands exploration in the area should be left open.

The MRD suggests that Reserve A23000 be vested in the Commissioner for Main Roads because of MRD's requirement for sand and gravel from part of the reserve.

C72 TEESDALE MPA

Murray Shire Council opposes damming of the Murray on the grounds that it is not eutrophic and acts as a flushing agent for the Peel-Harvey System; also Council considers the river to have tourist potential if left in a wild state.

The Department of Fisheries and Wildlife opposes Recommendation C72.1 — it wants Reserve A5098 to be vested in WAWA for conservation of flora and fauna.

The Forests Department opposes Recommendations C72.1 and C72.2 — it wants the areas declared State Forest. Also it wants the CLUC Report Recommendation that the EPA be consulted at planning stage of proposed works to be reinstated.

The Department of Lands and Surveys had originally supported the Department of Fisheries and Wildlife concerning Recommendations C72.1-2, but now supports the Forests Department view.

C73 MURRAY VALLEY MPA

Murray Shire Council opposes damming of the Murray for same the reasons as given in relation to C72.

Honey Industry Association wishes to continue use of all existing apiary sites.

C74 PLAVINS MPA

Murray Shire Council opposes damming of the Murray because of its great tourist potential if left in its current wild state, and because its waters flush the Peel-Harvey estuarine system. Honey Industry Association of W.A. requests that all current apiary sites be allowed to continue.

C75 SAMSON MPA

The Forests Department want the CLUC Report Recommendation requiring the SEC to consult the EPA and Forests Department at the planning of proposed works to be reinstated.

Honey Industry Association requests that existing apiary sites be allowed to continue.

The Campaign to Save Native Forests wants SEC lines and bauxite mining excluded from the MPA. To protect bullich stands more adequately, C75 should be amalgamated with C76 or else included in the proposed Jarrah Reserve. Mt. William should be included in the MPA.

C76 FEDERAL MPA

The Forests Department wishes the CLUC Report Recommendation requiring the MWA to consult with the EPA and Forests Department at the planning stage of proposed works to be reinstated.

Honey Industry Association requests that all existing apiary sites be allowed to continue.

The Campaign to Save Native Forests propose that the MPA's boundaries be extended outwards to the boundary ridges of the basin in which it sits.

C77 BELL MPA

The Forests Department wishes the CLUC Report Recommendation requiring responsible authorities to consult the EPA at the planning stage of proposed works to be reinstated.

Honey Industry Association requests that all existing apiary sites be allowed to continue.

The Campaign to Save Native Forests wants bauxite mining and SEC lines excluded from the area.

C78 RESERVE C22977, HARVEY

Harvey Shire Council opposes Recommendation C78.1: the reserve should retain its present purpose and vesting.

WAWA comments on Recommendation C78.1 that the amended purpose is endorsed but that the reserve should be vested solely in WAWA.

C79 RESERVE C15515, HARVEY

No submissions.

C80 RESERVES EAST OF HARVEY

WAWA endorses the Recommendations.

The Department of Lands and Surveys comments on Recommendation C80.4 that cancellation of Reserve C22958 should be referred to PWD because that Department requested creation of that reserve for use in conjunction with Harvey Town Water Supply. It advises regarding Recommendation C80.5 that the SEC's 330kv Muja — Southern Terminal transmission corridor has already been constructed.

The Campaign to Save Native Forests advocates a core-buffer management system to diminish possible adverse effects from surrounding land use practices. It also calls for SEC lines to be re-routed outside the locality.

C81 RESERVE C25727, HARVEY

PWD endorses Recommendation C81.1 provided it does not constrain future raising of Stirling Dam.

C82 SURFACE MPA

The W.A. Heritage Committee notes that C82 has been proposed for inclusion in the Register of the National Estate.

The Forests Department wishes the CLUC Report Recommendation that the SEC be required to consult the EPA and Forests Department at the planning stage of proposed works to be reinstated.

Honey Industry Association wishes to continue use of all existing apiary sites.

The Mines Department states that C82 has "high potential for bauxite".

C83 NALYERIN MPA

The Forests Department wishes the CLUC Report Recommendation requiring the SEC to consult the Forests Department and EPA at the planning stage of proposed works to be reinstated.

Honey Industry Association requests that all apiary sites be allowed to continue.

The Campaign to Save Native Forests proposes extension of the MPA's boundary to the alignment of Dee Vee Road, to north of the adjacent swamp, and along the ridgeline near Boundary and Stockyard Roads.

C84 TREES MPA

Western Collieries Ltd. wants the status of Reserve C6902 to remain the same until the coal potential of the area has been fully assessed.

The Department of Fisheries and Wildlife and Forests Department both call for the Reserves to be declared State Forest and made part of Trees MPA. The Forests Department proposes that the same apply to the PWD — owned land.

PWD states that Recommendation C84.2 is not practicable because the cleared areas are being used for reforestation trials.

The Department of Lands and Surveys proposes that Recommendation C84.2 be replaced with: "subject to PWD agreement the freehold land should be re-vested and included in State Forest as part of the MPA".

C85 STENE MPA

Honey Industry Association requests that all apiary sites be allowed to continue.

PWD does not understand Recommendation C85.1 because reforestation trials are being conducted on cleared portions of former Stene holding adjacent to the Collie-Williams Road.

C86 DARDANUP MPA

Dardanup Shire Council proposes development of the northern part of the MPA for a golf course following advice from the Forests Department that the original proposal for development of Reserve C2029 was unlikely to receive approval. Undertakings are given that no interference with the core area of the MPA would occur — fencing would be constructed if necessary. The Shire would plan the golf course in consultation with the Forests Department and the Department of Conservation and Environment.

Westralian Sands Ltd. has applied for a mineral claim over Reserve C2029 because it lies between two known mineral sand deposits. The conservation value of the Reserve is considered to be limited because dieback is present along the creek running through the reserve. Joint vesting is proposed.

The Forests Department proposes inclusion of Reserve C2029 in State Forest as recommended in the CLUC Report; it also wishes the CLUC Report Recommendation that the EPA and Forests Department be consulted at the planning stage of any extraction to be reinstated.

The Campaign to Save Native Forests proposes an extension of the buffer around the west side of the MPA by control of management of adjoining land or acquisition of Lots 4580, 3003, 11, 12, 2663, 1575, 1211. Gravel and mineral sand extraction and also vehicle access should be excluded.

C87 LENNARD MPA

Collie Shire Council is concerned that insufficient protection is given to Wellington Weir which is one of Collie's few major tourist attractions.

Dr. Bischoff proposes that C87 be managed either as a National or Regional Park.

The Amateur Canoe Association of W.A. proposes that the MPA be expanded to include the wedge of privately-owned land on the north-east bank of the Collie River between Burekup Reservoir and Mill Brook confluence. Because of pressure of use, the MPA should be managed primarily for recreation.

The Waterways Commission wishes LIMA to be consulted on definition of management objectives as part of C87 lies within its management area.

The Forests Department calls for Reserve C19641 to be added to State Forest as recommended in the CLUC Report. Also, the CLUC Report Recommendation that the Forests Department and EPA be consulted at the planning stage of proposed works by SEC should be reinstated.

PWD advises that the existing gauging station on Stone's Brook is to be designated a benchmark catchment. PWD wishes to be consulted on the preparation of a management programme, which should cater for "conservation, long-term hydrometric monitoring, and recreation needs".

C88 WESTRALIA MPA

Several Coal Mining Leases and Lease Applications cover much of the area. Mining companies express a need to retain access to the coal measures.

Collie Shire Council wants the eastern buffer area plus a wedge from the core area to be made available to the Shire for residential development.

Urban Lands Council proposes that a 30ha section of the buffer area be made available for residential development.

Both the Department of Fisheries and Wildlife and the Forests Department propose that the reserves referred to in Recommendation C88.1 be declared State Forest and added to Westralia MPA.

Forests Department wishes the CLUC Report Recommendations concerning public utilities and mining and also the relocation of the rifle range to be reinstated.

The Mines Department wishes exploration for coal to be unrestricted.

The Department of Lands and Surveys points out that Reserve C10014 is the subject of a current lease to the Commonwealth for the purpose of Rifle Range. Agreement to surrender of lease will have to be obtained.

C89 DONNYBROOK RESERVES

The MRD opposes vesting of Reserve C22860 in the Conservator of Forests as proposed in Recommendation C89.3; it calls for vesting to be jointly in the Shire of Donnybrook — Balingup and the MRD.

The Forests Department says that Reserves C2052, C19996, C22860 and C26238, Timber Reserve 153/25 and the vCi should be made part of State Forest as recommended in the CLUC Report.

The Department of Lands and Surveys makes these comments:

- the MRD has permission to extract gravel from Reserve C2013.
- the Donnybrook — Balingup Shire Council is unlikely to agree to transfer of vesting of Reserve C22860.
- part of Reserve C26238 in the NW corner may need to be excised to accommodate a newly constructed dam.
- Reserve C2052 is zoned Industrial in Donnybrook Town Planning Scheme and the Department has established a light industrial area on the Sandhills Road area of the reserve. The Department therefore objects to the inclusion of Reserve C2052 in Recommendation C89.3.

Donnybrook — Balingup Shire Council endorses Recommendation C89.1-2. It opposes Recommendation C89.3 except in regard to Reserve C26238. Reserve C2052 is zoned "Industrial" and part of it is presently being used for this purpose; Reserves C19996 and C22860 are both quarries. It opposes Recommendation C89.4 for similar reasons and suggests reservation of lot 5024 as an alternative.

C90 PRESTON MPA

The Campaign to Save Native Forests suggests burning practices should be in accordance with conservation requirements.

C91 NOGGERUP MPA

The Forests Department wishes Reserve C17114 to be made part of State Forest. The CLUC Report Recommendations relating to mining and public works should be reinstated.

PWD may wish to establish a benchmark catchment within the MPA.

C92 GOONAC MPA

J. Jackson, previous owner of Pastoral Lease 3114/419, (now cancelled), opposed cancellation of lease because:

- (i) it would hamper Jackson's merino stud industry,
- (ii) considerable investment has been made in improving the land,
- (iii) the holding has been carefully managed under Jackson's ownership.

The MRD wishes to use Reserve C12331 for white sand and proposes vesting in the Commissioner for Mains Roads rather than the Conservator of Forests.

The Forests Department wishes Reserves C11683 and C12331 to be made part of State Forest; also wishes the area of the three leases to be made State Forest.

The Campaign to Save Native Forests opposes further construction of SEC lines in the area, and proposes that bushwalking be allowed at certain times of the year when risk of dieback spread is low.

C93 MUJA MPA

The W.A. Field and Game Association opposes a ban on duck shooting as unnecessary while the Campaign to Save Native Forests supports it.

C94 BENNELAKING MPA

The Forests Department wishes Reserve C31088 and the temporary Water Reserve to be made part of State Forest.

C95 MULLALYUP MPA

One submission suggests that the area has mineral potential and therefore opposes the classification of the area as a conservation MPA.

The Campaign to Save Native Forests endorses the Recommendations; it submits that acquisition of privately-owned freehold land for the creation of a buffer area should be a long-term objective; calls for realignment of South-West Highway to by-pass the area; suggests that a fox and rabbit eradication programme would be valuable.

C96 RESERVE C29121, WILGA

Both WAWA and the Department of Lands and Surveys call for the purpose of Reserve C29121 to be amended to Conservation of Flora and Fauna.

B.G. Muir endorses the Recommendation.

C97 ST. JOHN BROOK MPA

A number of submissions, including one from the Nannup Shire Council, oppose construction of a dam or reservoir within the MPA.

The Forests Department wants Reserve C13276 to be made part of State Forest. Reserves C13290 and C12970 are not mentioned in the System 6 Report but should be made part of State Forest as recommended in the CLUC Report.

C98 RESERVES A25446 AND A3412, BLACKWOOD RIVER

WAWA opposes Recommendation C98.1 — the reserve should retain its present status because it has conservation value in its stands of flooded gum and accompanying nest hollows. WAWA endorses the inclusion of the freehold land in the reserve so that the whole of the freshwater swamp can be incorporated.

The Department of Lands and Surveys submits that Reserve A25446 should be considered for inclusion in State Forest No. 20.

C99 GREENBUSHES MPA

The Forests Department wishes the CLUC Report Recommendation relating to mining and public works to be reinstated.

The Mines Department does not wish the possibilities of mineral extraction to be restricted. Two other submissions support this view.

The Campaign to Save Native Forests wants vehicle access limited, opposes mineral exploration or extraction, and calls for prevention of adverse effects from South West Highway requirements.

C100 DALGARUP MPA

The Campaign to Save Native Forests suggests that bushwalking be allowed in the MPA during certain times of the year.

PWD may wish to establish a benchmark catchment within the MPA.

C101 NOLLAJUP MPA

The Forests Department wishes Timber Reserve 206/25 to be made part of State Forest as recommended in the CLUC Report.

METROPOLITAN LOCALITIES

M1 TWO ROCKS OPEN SPACE

The Wanneroo Shire Council suggests that a management programme for the area should consider the imposition of clearing bans. Council wishes to be consulted in the preparation of a management programme.

The MRPA states that much of the area of M1 is not yet "reserved" for Parks and Recreation and that the MRPA may not be the most appropriate body to prepare a management programme.

The Conservation Council of W.A., Campaign to Save Native Forests and W.A. Wildflower Society all want the area to be made an "A" class conservation reserve.

A number of private industry concerns want provision made for further evaluation of the mineral potential of the area.

M2 COASTAL STRIP FROM TWO ROCKS TO BURNS BEACH

Wanneroo Shire Council proposes that the boundary of M2 be amended to conform with the coastal reserve in the NW Corridor Planning Structure to avoid future land acquisition and management problems. Council opposes Recommendation M2.1(a) — public access should be provided by construction of scenic roads parallel to the coast. Council should be consulted on the definition of management objectives.

Lightweight 4WD Club says that M2 contains established stable tracks through and behind vegetated dunes and that 4WD vehicle access to them should be maintained.

Several submissions suggest expansion of M2, either by incorporation of Whitfords Nodes or incorporation of nearby land containing coastal tuarts and pockets of Christmas tree south-east of Burns Beach.

The MRPA submits that conservation of flora and fauna throughout the coastal strip is not likely to be achieved. Reserve C11630 is already developed and Wanneroo Shire Council may seek to have it subdivided for residential purposes. The recommendations should deal with coastal road alignments.

The Mines Department and the Extractive Industries Association do not wish M2 to encroach on existing mineral claims.

M3 YANCHEP NATIONAL PARK

The MRPA states that subdivision of privately owned land west of the National Park prevents realignment of Mitchell Freeway further west.

The MRD states that realignment of the Freeway is a matter for the MRPA.

Penny Hussey suggests incorporation of Ridges MPA into M3.

M4 RIDGES MPA

The MRD wishes to retain access for limestone extraction.

The MRD marl pit referred to, is actually within M3, not M4.

Incorporation of the MPA into Yanchep National Park is suggested in some submissions.

Wanneroo Shire Council wishes to be consulted concerning Recommendation M4.1.

The Campaign to Save Native Forests suggests creation of a buffer zone within the plantation area following clearing of the pines adjacent to the MPA.

M5 YEAL NATURE RESERVE

The Commonwealth Department of Administrative Services advises that maintaining the safety of Gingin Airfield may make compliance with Recommendation M5.4 difficult.

B.R. McMurdo has made an application for a Conditional Purchase Lease for Lots 3670-3680 for purpose of wildflower farming.

The Extractive Industries Association wants the mining potential of M5 protected.

The Conservation Council of W.A. proposes incorporation of all the vCI, Reserve C33784 and also C13 (Wabbling MPA) within Reserve C31241.

M6 NEERABUP NATIONAL PARK

Wanneroo Shire Council proposes that Reserves C13713, C25252, C25253 and C34537 should be incorporated in the National Park. Council wishes to be consulted over the definition of management objectives for the area.

Cockburn Cement Company queries the mention in the M6 preamble of the caves east of Lake Neerabup when these are outside the recommended area. The company considers the statement in the Green Book that "Appropriate vesting for the remaining land has not yet been determined" creates uncertainty for the company in its operations in the area.

The W.A. Naturalists' Club (Darling Range Branch) wants the area to remain a National Park, although it proposes that Reserve A24581 be vested in WAWA.

The WA Naturalists Club endorses the creation of a Regional Park in the area but wants A24581 to retain its present purpose.

Penny Hussey endorses the Regional Park concept but wants A24581 to retain its present purpose and be vested in WAWA.

The MRD comments, regarding the highways referred to in Recommendation M6.5, that little value is seen in reviewing the routes shown in the NW Corridor Structure Plan unless new planning information is available, since both the National Parks Authority and the Department of Conservation and Environment were involved in locating the routes. The centreline of Mitchell Freeway appears to be plotted inaccurately in Figure 82.

The MRPA makes these comments on certain Recommendations:

M6.4 — another body, rather than the MRPA, might be more appropriate for setting up the committee.

M6.5 — reducing two highways to one would be a fundamental reconsideration of the NW Corridor Structure Plan, although it may be possible.

M6.6 — not justified.

There are queries as to why M6 is suitable for a Regional Park and M1-M3 are not.

The Extractive Industries Association wants multiple vesting applied to the SE extension of the Park; it states that the mineral potential of M6 as a whole requires further investigation. It wants an additional clause added to Recommendation M6.3: "the area's potential for water and minerals". It opposes Recommendation M6.4.

The Mines Department objects to the inclusion in the Park of freehold land containing limestone.

M7 LAKES JOONDALUP AND GOOLLELAL

The Wanneroo Shire Council comments (regarding Recommendation M7.3) that the EPA should endorse the principles of the MRPA's Lake Joondalup Region Open Space Land Use Plan and should support existing committees until permanent management arrangements can be made.

The Joondalup Development Corporation points out that the Joondalup Centre when developed to the immediate west of M7 will ultimately have a major bearing on the area. Regarding Recommendation M7.2 — the Corporation wishes to be taken into account because of its responsibilities under the Joondalup Centre Act of 1976.

The advisory committee proposed in Recommendation M7.3 is considered unnecessary by the Joondalup Development Corporation and the MRPA because of the existence of the Lake Joondalup Region Open Space Joint Management Committee.

The MRPA also states that the considerations raised in Recommendation M7.2 have already been covered in Town Planning Department studies of the area and that, regarding Recommendation M7.2(d), conservation is not an appropriate priority for Wallubuenup Swamp.

The MRD does not wish the area reserved in M7 to extend across existing planning for Ocean Beach Drive and Whitfords Avenue. It wants the Central City Area appearing in the MRS adjacent to M7 to be recognised.

WAWA opposes Recommendation M7.4.

M8 WANNEROO WETLANDS — EASTERN CHAIN

The importance of combining the lakes into a single regional open space is stressed in a number of submissions.

The Wanneroo Shire Council submits that the principles of the Circular Lakes Landscape Enhancement Area and associated management proposals should be applied to M8.

The MRPA advises, regarding the Recommendations:

M8.1 — is difficult to implement because M8 is unlikely to become a single area.

M8.2 — a Town Planning Department study of the eastern chain of Wanneroo Wetlands has been prepared and will guide the MRPA on future reservation.

M8.3 — this is not the MRPA's role.

M8.4 — the MRPA cannot do this because much of M8 is not yet reserved.

The Mines Department wishes to be involved in the definition of management objectives for the area.

M9 MELALEUCA MPA

Swan Shire Council and the Mines Department both wish to be involved in the definition of management objectives.

The Forests Department wishes to see the Conservation and Land Use Committee (CLUC) Report recommendations relating to mining and water-level monitoring reinstated.

Extra measures to prevent rubbish dumping are suggested.

M10 OFFSHORE REEFS — OCEAN REEF TO TRIGG

A large number of submissions from individuals oppose the ban on non-line fishing proposed in Recommendation M10.2. Alternative means of protecting the area are suggested such as seasonal regulation of fishing, licensing, or more strict policing of existing regulations. The importance of the area as a recreational outlet providing safe boating and diving conditions is stressed.

Marmion Angling and Aquatic Club opposes Recommendations for M10 because the area provides safe diving, launching and fishing conditions and because there is no evidence that crayfish numbers are being depleted.

The Extractive Industries Association opposes the Recommendations because their implementation would affect the livelihood of a number of professional divers and fishermen.

The Amateur Fishermens' Interest Group opposes the Recommendations: it wants the area to remain open to amateur crayfishermen and divers since it provides safe conditions, and fish numbers, including the cowrie shell, are not endangered. This submission has over 1000 signatories.

The West Coast Roei Abalone Divers' Association states that professional roei abalone fishermen rely largely on this area for their livelihood and assurances are sought that no restrictions will be placed on their harvesting of this area. A system of rolling closures ensures that the area is not likely to be overfished.

Whitford's Sea Sports Club opposes the Recommendations.

The Department of Lands and Surveys notes that some of the reef area would come under the definition of Crown land under the Land Act and suggests that consideration could be given to creating a Land Act reserve for those areas above the low water mark.

The Conservation Council of W.A. endorses Recommendation M10.1.

The Underwater Skindivers' and Fishermens' Association endorses Recommendation M10.1, and calls for all fishing to be banned in the area except line fishing from the beach.

Feilman Planning Consultants (on behalf of Parry's Esplanade Ltd.) endorses the Recommendations and opposes inclusion of Whitfords Nodes in M10.

Several submissions call for inclusion of Whitfords Nodes in M10.

Whitfords Bay Sailing Club and Quinns Rock Recreation Association endorse the Recommendations.

M11 WARWICK WOODLAND

Wanneroo Shire Council calls for lot 145 to be acquired and vested in Wanneroo Shire for the purpose of conservation. The High School forms an integral part of the woodlands and should be included in M11.

The MRPA advises that it has adopted a plan for M11 which takes account of the value of vegetation in the locality.

Dr. V. Semeniuk calls for the whole area of tuart woodland of which M11 forms a part to be reserved.

M12 RESERVE A20091, MARANGAROO

Wanneroo Shire Council endorses Recommendation M12.1 but wants the Reserve boundary amended in line with Council attempts to rationalize it through land swaps.

The MRD advises that the Local and Important Regional Road layout on the boundaries of M12 is incorrectly shown in Figure 87.

M13 WHITEMAN PARK

Swan Shire Council says that the Shire and the MRPA need to hold discussions on the likely effects of a Regional Park on surrounding residential areas, taking into account the special rural zone development to the east.

The MRPA submits that the working definition of the park boundary extends much further than is shown in Figure 88. The MRPA states that the Recommendations are limited considering the area's importance; and it proposes that Drainage be included as a purpose in any future reserves.

G. Wray expresses disappointment that the boundary of M13 excludes areas to the south and east recommended for inclusion in the park by consultants employed by the MRPA in 1979.

M14 RESERVE C1654, BULLSBROOK

Swan Shire Council has requested permission to use part of Reserve C1654 for refuse disposal. Council proposes that the northern unused portion of Reserve C27583 be included in Reserve C1654, and opposes any mining taking place in the Reserve.

Westralian Sands Ltd. endorses the Recommendations; it says that, despite the considerable value of the mineral deposit in M14, the Company is willing to forego mining within 100m of the wetland.

The Waterways Commission endorses the Recommendations.

The Extractive Industries Association wants the mining potential of the locality protected.

The Conservation Council of W.A. calls for purpose of the Reserve to be solely Conservation with vesting solely in WAWA.

The Department of Lands and Surveys refers to the proposal for excision of part of Reserve C1654 for separate reservation for rubbish disposal purposes.

M15 PEARCE AERODROME

The Department of Administrative Services submits that Commonwealth use of the area for aerodrome and bombing range is not likely to be compatible with conservation of flora and fauna. The presence of birds, other animals and fire hazards would be a danger to operations in the area.

The Waterways Commission points out the existence of the sewage treatment plant and calls for the effects of waste water discharge into Ellen Brook to be investigated.

Swan Shire Council advises that the structure plan for Bullsbrook — not yet formally adopted by the Council — recommends that the area surrounding the aerodrome requires specific sub-divisional policies in order to protect the integrity of Ellen Brook and to provide a buffer between the base and the rural hinterland.

M16 AVON VALLEY NATIONAL PARK

Several submissions call for the vCi to be vested in the National Parks Authority.

WAWA opposes Recommendation M16.1 — it states that Reserve A30191 is one of the few major nature reserves in System 6, the only one in the northern Jarrah forest, and of great value for environmental education. The Department of Fisheries and Wildlife has prepared a management plan for the reserve.

The National Parks Authority endorses Recommendation M16.3 except that it considers off-road vehicle access inappropriate; also it considers consultation with individual landowners suggested in Recommendation M16.6 to be impractical.

The Forests Department considers recommendations M16.3 and M16.6 to be "incongruous".

The Department of Lands and Surveys opposes Recommendation M16.2 — it considers cancellation of Trigonometric Reserves within freehold land particularly undesirable and calls for them to be protected. Cancellation would mean partial loss of the historically important survey traversed by John Forrest in 1877.

M17 ELLEN BROOK AND TWIN SWAMPS WILDLIFE SANCTUARIES, UPPER SWAN

Bristle Ltd, the Extractive Industries Association and the Mines Department all oppose any restriction on access to clay extraction in the area surrounding the reserves.

The Mines Department wishes to be "included in any planning group" relating to the area.

Swan Shire Council wishes to continue close liaison with the Department of Conservation and Environment concerning planning of clay extraction sites.

WAWA advises that a management plan for the area is already in operation and will be revised and updated in due course.

The Waterways Commission wants wetland preservation to be a priority. Several submissions stress the importance of protecting tortoises.

M18 WALYUNGA NATIONAL PARK

Some of the owners of land included within M18 oppose any form of joint management of their land, pointing to past problems associated with public access to the land, interference with commercial management of land and with other plans for use of the land.

The Aboriginal Advancement Council of W.A. points out that it owns lot 121 and intends to make it a wildlife sanctuary.

The Department of Fisheries and Wildlife opposes joint vesting proposed in Recommendation M18.2 — suggests instead leaving the area vacant Crown land following acquisition.

Midland Brick Company expresses concern that an access road built by the company for shale extraction lies partly within the proposed addition to the Park in Location 1341. Restriction of use of the road would cause considerable cost to the company.

The MRPA comments that extensive areas of freehold land are appropriate for inclusion in the National Park, possibly being obtained through the planning process.

The Extractive Industries Association and the Mines Department want the mineral potential of the area protected.

The Conservation Council of W.A. and the Campaign to Save Native Forests want any adjoining freehold land which is purchased to be added to Reserve A2065. Campaign to Save Native Forests proposes addition of Reserves C26864 and C26865 to A2065.

M19 SWAN RIVER — GUILDFORD TO WALYUNGA NATIONAL PARK

Swan Shire Council wants the area bounded by West Swan Road, the railway and Middle Swan Road to be included in M19. Management of the area should take into consideration the area's potential for tourism and take action on the provision of zoning and subdivision controls.

The MRPA states that Recommendation M19.2 is not properly explained. The MRPA has not committed itself to continuous foreshore reserves along this section of the Swan River, although they remain a possibility. "Swan Valley Project" is being undertaken by the Town Planning Department and will examine means of providing open space for public use in the region.

The Mines Department wishes to be consulted in the preparation of any management programme for the area.

M20 JANE BROOK

Two submissions consider that the creation of a linear pathway would create problems for landowners along the river.

A larger number endorse the proposal for a pathway.

The Waterways Commission is among those endorsing the proposal. It submits further that the Swan River Management Authority is the appropriate body for management of M20 and wants the Authority's boundaries adjusted to include it.

The MRPA advises that, while it has recognised the potential of the area for reservation under the MRS, no decision for definite action has been reached.

The Mines Department wishes to be included in consultations concerning preparation of a management programme.

M21 JOHN FORREST NATIONAL PARK

The Department of Lands and Surveys points out that Reserve C11396 is subject to a Crown Grant in Trust and the agreement of the Public Education Endowment Trust would be needed for implementation of Green Book Recommendation M21.1.

The Trustees of the Public Education Endowment oppose Recommendation M21.1 — the reserve occupies a prime location with development potential and the Trust wishes to see it zoned residential so that financial remuneration can be obtained. Alternatively the Trust could be given another area of equal value in exchange.

The MRD suggests that Lot 63 which adjoins M21 and is owned by the MRD could be exchanged in part for a block containing gravel within M21. Negotiations are also being held with the Eastern Refuse Disposal Zone Committee concerning part of Lot 63 and adjoining Lot 1 (the latter is within M21).

The National Parks Authority comments regarding Recommendations M21.2 and M21.3 that the MRPA's role is more in the field of planning than management: the land would be better vested in the National Parks Authority and managed in conjunction with a regional park system. (Several other submissions also call for the MRPA-owned land to be made part of the National Park). The MRPA endorses Recommendation M21.2, but queries Recommendation M21.4.

Murray Shire Council endorses the Recommendations, except that the inclusion of Water as a purpose for reserves in the area (M21.4) would require detailed discussions with the MWA, as would the effect of a pipehead dam on Jane Brook.

Addition of the southern part of lot 63 to M21 is suggested in some submissions.

M22 RESERVES A12453 AND C12085, PARKERVILLE

The W.A. Naturalists Club propose inclusion of Lots 27 and 190 in Reserve A12453 because of their diversity of soil and vegetation.

Murray Shire Council endorses the Recommendations, as do the Waterways Commission and Campaign to Save Native Forests, except that the latter would prefer joint vesting with a conservation authority.

The Department of Lands and Surveys points out that Recommendation M22.2 will require the agreement of the Public Education Endowment Trust because the Reserve is the subject of a Crown Grant in Trust.

The Trustees of the Public Education Endowment Trust oppose Recommendation M22.2: either the Reserve should retain its present purpose or else the Trust should be issued with another area of land of equal value in exchange.

The MRPA submits that the conservation value of the area has not been established and wants the option left open for use of the land by the Crown for various possible purposes.

M23 RESERVES ALONG DISUSED RAILWAYS — MIDLAND TO CHIDLOW

Mundaring Shire Council endorses Recommendations with the proviso that rail reserves should include activity nodes with walking and bridle trails provided.

Several submissions stress the importance of a weed control programme in the area.

The Department of Lands and Surveys advises that Reserve C31196 is under a limited term vesting in the Mundaring Shire Council which expires in February 1984 with special conditions. The System 6 Report should state whether continued vesting in the Shire is recommended (the Department would have no objection to this).

The Campaign to Save Native Forests calls for Reserves C23499 and C19709 to be included in the area.

M24 RESERVES NORTH-WEST OF CHIDLOW

The Campaign to Save Native Forests proposes that Reserve C23741 (Gravel) be included in M24.

M25 LAKE LESCHENAULTIA

Several submissions endorse the Recommendations.

The Campaign to Save Native Forests endorses the proposal for expanding the area made by Mundaring Shire Council. Controls on pollution of the lake via streams should be implemented.

Mundaring Shire Council advises that it has prepared a management plan for the reserves surrounding Lake Leschenaultia. However the Shire wishes to be provided with additional funds from appropriate authorities in order to undertake further studies of the area. In lieu of this such authorities should assist in managing the area.

The Forests Department opposes Recommendations M25.1-2. The Department can see no point in having the area of State Forest having its security of tenure reduced from the equivalent of "A" class to "C" class; also it does not wish to enter into joint management arrangements with local authorities. Either the CLUC Report recommendations or the present situation would be preferable.

M26 RESERVES NORTH-EAST OF CHIDLOW

The Campaign to Save Native Forests wants the purpose of Reserve C4967 amended to conservation of flora and fauna and supports the proposal made by the Mundaring Shire Council for the inclusion of extra reserves in the area.

M27 RESERVES NORTH OF LAKE MANARING

The Eastern Hills Wildflower Society makes a proposal to amalgamate the reserves of M27 into a single contiguous area and link it with M23. These points are made in support of the proposal:

- (i) The Eastern Corridor Plan and Mundaring Shire both include Crown lots 34763, 34764 and 32172 and an old railway reserve in their parkland/reserve system; the lots are designated "public purposes" and are therefore open to reservation for conservation.
- (ii) Crown lot 34203 is effectively part of Reserve C30667 and should be formally included in it.

Mundaring Shire Council wants to be able to extract gravel from Reserve C25033, particularly the section bounded by Cable Street and Great Eastern Highway.

The Department of Lands and Surveys advises that it has considered including Lake Manaring in Reserve C25033 with the purpose of the reserve being changed to conservation of flora and fauna and vesting in WAWA. However PWD has opposed this and requested inclusion of the lake in Reserve C6023 because of its location within Mundaring Weir Catchment. The System 6 Study is an appropriate forum for resolution of this disagreement.

M28 RESERVE C14278, EAST OF WOOROLOO

The Recommendation is endorsed by WAWA, Mundaring Shire Council and the Campaign to Save Native Forests.

M29 GREENMOUNT NATIONAL PARK

The Kings Park Board considers the area proposed for the Kings Park annexe is too large because of a lack of groundwater or alternative inexpensive supplies, and because the soils in the area are generally shallow. The Board would prefer another site.

A large number of submissions oppose use of the existing National Park for a Kings Park annexe — they suggest instead that the annexe be confined to the cleared land west of the National Park in Location 16. A number of these submissions stress the conservation importance of the flora close to Greenmount Hill.

Opposition is also registered to use of Reserve C8120 for the annexe.

The MRPA says that Recommendation M29.4 is not provided with justification.

The Department of Lands and Surveys opposes Recommendation M29.3 — it considers cancellation of Trigonometric reserves undesirable.

There are also quite a number of submissions endorsing the Recommendations.

M30 RESERVES A1847 AND C31178, DARLINGTON

Three submissions, including that of the Campaign to Save Native Forests, propose that the purpose of Reserve A1847 be made Conservation of Flora and Fauna.

The Recommendations are generally endorsed however. Darlington Ratepayers' and Residents' Association suggest that local government should be encouraged to involve management interested groups with expertise in local flora and fauna.

M31 RESERVE C32727, MUNDARING

Two submissions propose that the reserve be amended in purpose to Conservation of Flora and Fauna.

The Campaign to Save Native Forests supports the proposal made by the Mundaring Shire Council (for the inclusion of extra reserves in the area).

The MRPA expresses "concern" at the reference to the above proposal in the M31 preamble in the Green Book — it considers that insufficient explanation is given.

M32 RESERVES C18130 AND C34103, SAWYERS VALLEY

The MRPA advises that the area is the subject of a proposal put to the MRPA to transfer it from Urban to Parks and Recreation in the MRS.

Mundaring Shire Council endorses the Recommendations — they are consistent with Council's own Structure Plan.

The Campaign to Save Native Forests wants the proposed Sawyers Valley bypass road routed around M32.

M33 HELENA RIVER — GUILDFORD TO DARLINGTON

Swan Shire Council advises that its Hazelmere Study has incorporated the concept of a conservation buffer zone along the Helena Valley.

The Waterways Commission endorses the Recommendations and proposes that the Swan River Management Authority boundaries be adjusted to include the area.

The MRPA advises that a decision has not yet been made on the creation of MRS "reserves" in Helena Valley and that this decision will rest "on the resolution of broader issues of urban design in the general vicinity".

A large number of submissions made by local landowners oppose the creation of a linear park in the area, principally for these reasons:

- (i) the river is of little recreational value, being dry and overgrown in summer and flooded in winter;
- (ii) increased public access would cause problems of pollution, erosion of banks, increased fire hazard, vandalism of private property, loss of land values and disruption of bird life. It is suggested that the adjacent roads could serve as an alternative pathway system.

M34 HELENA VALLEY

The Waterways Commission endorses the Recommendations. The Swan River Management Authority boundaries include half of M34: it is suggested that the boundaries be extended to include the whole locality.

The National Parks Authority endorses the proposal for management of the area as a Regional Park; it wants the Park boundary extended eastward to Mundaring Weir. The Authority comments on Recommendation M34.2 that the definition of management objectives would be better left to the National Parks Authority rather than involving the MRPA.

The Department of Fisheries and Wildlife opposes the Regional Park proposal and wants the area made a National Park.

Several submissions agree with the Department of Fisheries and Wildlife, arguing that the area's conservation value is more important than its recreation value.

The Forests Department expresses concern at the proposal to excise part of State Forest 54 and add it to the Regional Park. This may endanger State Forest to the east by taking away a buffer zone protecting it from wildfire. The alternative suggested is that Reserve C23118 be made State Forest with the composite area being given a conservation or recreation priority.

The MRPA states that the whole area requires increased and integrated management presence. It states that Recommendation M34.4 is not adequately explained in text.

Mundaring Shire Council comments regarding Recommendation M34.2 that Council should be involved in the definition of management objectives.

PWD opposes any increased activity within the catchment of the Lower Helena pipehead dam; Recommendation M34.4 is endorsed.

The Department of Lands and Surveys opposes incorporation of Reserve A7890 within the Park — the reserve is actively used and still required for field examinations.

A considerable number of submissions oppose construction of a major road or highway through M34.

The Regional Park proposal is endorsed in a number of submissions.

Eastern Hills Branch of W.A. Wildflower Society propose 2 specific areas for management for conservation of flora.

M35 STAR SWAMP

Both WAWA and the Department of Fisheries and Wildlife endorse Recommendation M35.1 though they oppose the inclusion of Water as a purpose. They endorse Recommendation M35.2.

The Department of Lands and Surveys is considering ways of acquiring the swamp through exchange with land elsewhere in the State. It suggests that Recommendation M35.2 be amended to read: "Subject to acquisition of SHC land being successful, the land should be added to Reserve A21406".

A very large number of submissions call for the whole area, from Hope Street eastward to Marmion Avenue, to be reserved, generally arguing that the additional bushland is valuable both as a buffer for the Swamp and in its own right.

M36 RESERVES NEAR KARRINYUP

Stirling City Council opposes Recommendation M36.1; it endorses Recommendation M36.3. Council wants the whole area of M36 to be vested in the City of Stirling for the purpose of Public Recreation.

WAWA opposes Recommendation M36.2 — the Authority does not wish to have or share the vesting of the Reserves. Because they are small and located in a built up area they should be vested solely in the City of Stirling.

Two other submissions also suggest that vesting should be solely in the City of Stirling.

M37 CARINE SWAMPS

Stirling City Council endorses Recommendation M37.1; it considers Recommendation M37.2 is unnecessary since the areas' development plan includes water supply in it.

The MRPA comments on Recommendation M37.2 that drainage should be recognised as a purpose.

The Royal Australasian Ornithologists' Union (R.A.O.U.) opposes development of an ornamental lake as being likely to disturb the area's variety of valuable birdlife and vegetation.

M38 CARENIUP SWAMP

Stirling City Council endorses Recommendation M38.1; it also endorses Recommendation M38.2 although mineral extraction might be in conflict with the management suggested by a Council/MRPA working group.

The Mines Department wishes to be involved in the definition of management objectives for the area, and the Extractive Industries Association and J.M. Lord and Associates call for further evaluation of mineral potential.

M39 LAKE GWELUP

Stirling City Council endorses Recommendation M39.1; it considers Recommendation M39.2 unnecessary.

The Campaign to Save Native Forests endorses Recommendation M39.1; it comments on Recommendation M39.2 that water extraction should not be allowed to adversely affect flora.

The W.A. Field and Game Association calls for groundwater extraction to be restricted; it proposes that the littoral zone be fenced to prevent access.

The Department of Lands and Surveys advises that Reserves C31538 and C33116 were created according to Section 20A of the *Town Planning and Development Act* as a condition of subdivision. Recommendation M39.1(d) is therefore invalid unless the reserves' purpose is changed or unless "encouraging" is substituted for "only allowing".

M40 DIANELLA OPEN SPACE

Stirling City Council submits that the Recommendations are unnecessary because the area already has a management programme which should be endorsed by the EPA.

The Department of Lands and Surveys opposes the Recommendations. The MRPA has already approved a management plan for the area making provision for natural vegetation and recreational developments. The existing purpose and vesting of the reserve should be retained and the MRPA land should be included in the reserve.

M41 BENNETT BROOK

Swan Shire Council endorses Recommendation M41.1. Council opposes both the diversion of water courses and clay extraction in the Caversham area because of their likely impact on land use options.

Bristle Ltd. opposes any restrictions being placed on: (i) the Company's use of lot 2988 for clay extraction and future stockpiling; (ii) use of land north of lot 2988 to Benara Road which has plastic clay potential.

The Waterways Commission endorses the Recommendations; however it considers that the Swan River Management Authority is the appropriate management body for the Reserve and calls for SRMA boundaries to be adjusted to include the area.

The Mines Department wishes to be involved in the definition of management objectives.

M42 JACKADDER LAKE, WOODLANDS

Stirling City Council endorses Recommendation M42.2. Council submits concerning Recommendation M42.1 that the amended purpose should not include Water.

M43 HERDSMAN LAKE

A large number of Herdsman Lake coupons were received, calling on the EPA to adopt the management programme produced by the Conservation Council of W.A. and detailed on p. 8 of the Council's information sheet — "Herdsman Lake Bird Sanctuary".

Several other submissions put forward the same proposal.

A number of submissions stress the conservation importance of the area and oppose mining. The Mines Department wants to be involved in the definition of management objectives.

Habitat Herdsman puts forward a comprehensive development plan, broadly based on the MRPA Concept Plan of 1976. It makes these points concerning management of the lake: (i) it should be managed in similar fashion to Kings Park (ii) close planting of indigenous trees should be undertaken around the lake perimeter (iii) Regional Park concept is endorsed (iv) the maximum possible amount of fenland should be retained (v) water quality should be monitored (vi) exploration programmes should be speeded up since they are delaying production of a final management programme (vii) protection of birdlife is a priority.

The MRPA states that the M43 preamble contains some inaccuracies:

- (i) the mining claims do not include "sand", which is subject to quarrying license issued under the Local Government Act.
- (ii) the development in the south-west portion of M43 is not an "ornamental lake" — it is an exercise in limited wetland rehabilitation which is now proving a successful waterfowl habitat.

M44 SWAN RIVER BACKWATER, SOUTH GUILDFORD

The Waterways Commission endorses Recommendation M44.1; it comments on Recommendation M44.2 that the Swan River Management Authority should be involved in the preparation of a management programme and calls for the Authority boundaries to be extended to include M44. The Commission notes that drains from Bell Bros. and Wigmores discharge into the backwater and calls for efforts to be made to eliminate oil from them. Fire control is also said to be necessary.

The MRPA comments on Recommendation M44.1 that it is unlikely that the Parks and Recreation "reserve" boundary would be extended to include the subdivided lots; the Authority comments on Recommendation M44.2 that the MRPA may not be most the appropriate body to undertake this.

Swan Shire Council endorses the Recommendations.

M45 HAZELMERE LAKES

The W.A. Field and Game Association endorses Recommendation M45.1. Stock access should be prevented by fencing.

Swan Shire Council advises that Recommendation M45.1 has been incorporated in Council's planning study for Hazelmere.

WAWA submits that Recommendation M45.1 should recommend consultation with the Department of Fisheries and Wildlife, not WAWA.

M46 SWANBOURNE BEACH AND RIFLE RANGE

The Department of Administrative Services notes that Swanbourne Rifle Range and Campbell Barracks are on Commonwealth-owned land. The Department would like to be further informed concerning implementation of the recommendations for M46.

The MRD advises that land bought by the Government to connect West Coast Highway and Servetus Street is now available for road construction. The effects of the recent Government decision regarding the Western Suburbs should be considered.

The MRPA questions the boundaries of M46 for extending beyond the existing Parks and Recreation "reserve".

The Department of Lands and Surveys advises that part of Lease 37L/499, south of the southern boundary of Reserve 28801, has been surrendered by the Commonwealth and is now vCl.

M47 BOLD PARK, CITY BEACH

A "Citizens Group" endorses Recommendation M47.1 and proposes that the natural bush park south of Oceanic Drive be extended to West Coast Highway and Stevenson and Underwood Avenues, and linked with the Perry Lakes area. The Group endorses Recommendation M47.2 and calls for Bold Park and Perry Lakes to be managed as a single Regional Park; it suggests that Perth and Nedlands City Councils should move their common boundary to Stephenson and Underwood Avenues, allowing Location 2103 to be added to Bold Park.

Several submissions oppose construction of any major road through M47.

The MRPA questions the boundaries of M47 for extending beyond the existing MRS Parks and Recreation "reserve".

M48 LAKE CLAREMONT

Both the Claremont Town Council and a private citizen call for the picnic area to the west to be included in any management proposals. Land currently set aside for a drive — in theatre should be turned into public open space and secured against subdivision.

M49 KINGS PARK

The Department of Lands and Surveys opposes Recommendation M49.1. The Minister for Lands and the Department of Lands and Surveys are responsible for administration of the Act and if any review is required (and this is not demonstrated), a request should be made to the Minister.

M50 SWAN RIVER FORESHORE, MAYLANDS

Stirling City Council endorses Recommendation M50.1.

The Harbour and Light Department opposes Recommendation M50.1(c) as this may exclude boating.

The MRD says that existing MRS plans for Swan River Drive may need to be considered more closely.

The Waterways Commission says that the Swan River Management Authority should be involved in the definition of management objectives. Authority boundaries should be amended to include M50.

The MRPA advises that part of M50 is included in the West Bank Scheme under consideration by the Perth Water, Burswood Island Foreshore Advisory Committee which was convened by the Town Planning Department.

The Department of Lands and Surveys advises that the City of Stirling has submitted development proposals for Maylands Foreshore: affected lands are Reserves C33966 and C33967, and MRPA lots 116-118, 511 and 512.

M51 SWAN RIVER SALTMARSHES, BELMONT AND MAYLANDS

Several submissions endorse Recommendation M51.1. Bayswater Shire Council wants the management programme to include control of mosquito breeding.

The MRD submits that M51 should not extend over the "reserve" for Swan River Drive that is in the existing Metropolitan Region Scheme.

The Kings Park and Swan River Preservation Society opposes routing of Swan River Drive through the area.

The Waterways Commission submits that the Swan River Management Authority should be involved in the preparation of a management programme for M51. The Authority's boundaries should be adjusted to include the area.

M52 PERTH AIRPORT

Belmont City Council and Swan Shire Council endorse Recommendation M52.1.

The Department of Administrative Services suggests that maintaining the safety of the airport may not be compatible with Recommendation M52.1.

The MRD states that Figure 124 is somewhat unclear. There appears to be some conflict between the Beechboro — Gosnells Freeway Reserve and the stippled area shown in the vicinity of Reserve 8867. Also the route of the Redcliffe — Bushmead Freeway is not clearly shown.

The Waterways Commission endorses Recommendation M52.1. It calls for oils and other pollutants to be removed before tarmac runoff is discharged into the river through the airport middle drain.

M53 RESERVE C29880, FORRESTFIELD

Kalamunda Shire Council submits that Recommendation M53.1 should specifically call for reforestation of old excavations between the hot rod track and the sanitary landfill site. Council will not renew the lease for the hot rod track.

The Conservation Council of W.A. considers that Recommendation M53.1 is unlikely to be effective; inclusion of conservation in the purpose of reserved land is necessary to protect it.

C.A. Morris proposes that: (i) Kalamunda Shire cease operations in Location 5234 with the area being rehabilitated to woodland, (ii) Location 5282 be preserved in present state, (iii) W.A. Fire Brigades Board find another site for its new training college, (iv) the area allocated to the SEC be confined to land they have already developed and fenced, (v) public access be provided to the whole area by walking paths.

The Tree Society endorses the submission of C.A. Morris.

M54 FORESHORE RESERVE, PEPPERMINT GROVE

Peppermint Grove Shire Council endorses Recommendation M54.1, as do Claremont Town Council, the Kings Park and Swan River Preservation Society, and other individuals.

The Waterways Commission endorses Recommendation M54.1 and calls for the Swan River Management Authority to be kept informed concerning the locality's management programme.

Dame Rachel Cleland calls for the licence for the partly burnt-out boatshed to be cancelled and the shed demolished.

M55 BUCKLAND HILL, MOSMAN PARK

The Department of Administrative Services wishes to be given more information regarding Recommendation M55.1.

The MWA states that access to the service reservoir should be restricted.

The MRPA submits that, while the elevated portions of M55 have recreational value and flora of scientific interest, the locality's greatest value lies in its urban development potential.

M56 FORESHORE RESERVES, MOSMAN PARK

The Recommendations are endorsed by the Campaign to Save Native Forests and the Kings Park and Swan River Preservation Society.

The Waterways Commission endorses the Recommendations; also it says that the Swan River Management Authority should be consulted in the preparation of a management programme.

M57 MINIM COVE FORESHORE, MOSMAN PARK

The Waterways Commission endorses the Recommendations; the Swan River Management Authority should be kept informed concerning a management programme for M57.

The Department of Lands and Surveys submits that the portion of closed road which is vCI should be included in Reserve C24242.

The W.A. Group of the Royal Australasian Ornithologists Union states that the marshes are probably the last strongholds of the Sharp-tailed Sandpiper in the Swan River Valley.

M58 BLACKWALL REACH FORESHORE, BICTON

A number of submissions contend that the reserve should retain its "A" class status, among them: Melville City Council — which also wants the reserve vested solely in itself with a management programme to be drawn up by WAWA.

East Fremantle Yacht Club — which contends that this is one of the most beautiful sites on the Swan River; it has been degraded by pedestrian traffic and runoff from a parking area in the south and requires a more vigorous management programme.

WAWA — which further submits that because the reserve is subject to heavy recreation pressure it should be vested solely in Melville City Council.

R.A. Bryce — who says that Melville City Council has mismanaged the area by clearing vegetation and dumping limestone rubble on the beach; the area should be vested solely in WAWA.

Some submissions endorse Recommendation M58.1, such as those from the Waterways Commission, Campaign to Save Native Forests, and Kings Park and Swan River Preservation Society.

M59 POINT RESOLUTION FORESHORE, DALKEITH

Nedlands City Council says that it intends to take steps to implement the Report's Recommendations although the assistance of the Department of Conservation and Environment is not considered necessary.

The Waterways Commission endorses the Recommendations and submits that the Swan River Management Authority should be consulted in the preparation of a management programme.

M60 AQUATIC RESERVE, SOUTH PERTH

Recommendation M60.1 receives general endorsement.

A few submissions propose that the reserve have "A" class status, including the submission from WAWA.

M61 AQUATIC RESERVE, ATTADALE

WAWA wants the Aquatic Reserve to have "A" class status and to have the designated purpose of conservation of flora and fauna.

The Waterways Commission calls for the Swan River Management Authority to be involved in management of the reserve: the area of M61 below high water mark is within SRMA boundaries.

The Harbour and Light Department opposes the creation of the reserve, as moves may be made to have boating banned from the area at some future date.

M62 PELICAN POINT, CRAWLEY

The Harbour and Light Department opposes the creation of the reserve as moves may be made to have boating banned from the area at some future date.

The Waterways Commission proposes that the whole of the area of M62 be vested in the Swan River Management Authority with the Authority's boundaries being adjusted to take in the section presently outside its jurisdiction.

The Department of Lands and Surveys considers Recommendation M62.1 unnecessary because the present purpose of Reserve A17375 (Recreation) is suitable for management of a bird sanctuary.

M63 HARRY SANDON PARK, ATTADALE

Three submissions propose that the whole of Harry Sandon Park (a larger area extends southward from Reserve C30697) be made a reserve for conservation of flora and fauna and vested jointly in WAWA and City of Melville.

M64 WIRELESS HILL PARK, ARDROSS

Melville City Council submits that an area west of the telecommunications museum should be allocated for civic use.

Dr. J.S. Beard contends that Melville City Council has failed to adhere to the management programme it commissioned and adopted in 1970 and is not qualified to prepare another one now.

M65 POINT HEATHCOTE FORESHORE, APPLECROSS

The Waterways Commission endorses the Recommendation and calls for the Swan River Management Authority to be involved in the preparation of a management programme.

The Department of Lands and Surveys advises that Reserve C29604 is leased to the high water mark to the Australian Boy Scouts Association, W.A. Branch.

M66 MOUNT HENRY, MANNING

The Recommendation receives general endorsement.

The Waterways Commission calls for the Swan River Management Authority to be involved in the preparation of a management programme.

South Perth City Council endorses the Recommendation, noting that it has indicated its support in the past for possible declaration of the area as a National Park.

The Tertiary Education Canoe Club of W.A. wants the area made an "A" class conservation reserve.

M67 CANNING RIVER FORESHORE, SALTER PT. TO CLONTARF

WAWA advises that it does not wish to be involved with Recommendation M67.2, though the Department of Fisheries and Wildlife has responsibilities towards Recommendation M67.2(a).

The MRPA advises, regarding the land referred to in Recommendation M67.2, that it is the subject of an urban design and subdivision study being undertaken by the Christian Brothers. "Reservation" of more land under the MRS will result.

The Waterways Commission endorses the Recommendations; it wants to be involved in preparation of a management programme.

The Tertiary Education Canoe Club endorses Recommendation M67.2; it calls for the southern end of the foreshore area to be made an "A" class conservation reserve.

M68 CANNING RIVER, RIVERTON BRIDGE TO NICHOLSON ROAD BRIDGE

The Tertiary Education Canoe Club of W.A. endorses the Recommendations, and further proposes that the area between Shelley and Riverton bridges be made an "A" class conservation reserve and be vested in the City of Canning; also it proposes that the planned Chapman — Spencer Road connection should not go ahead.

The MRD disputes what it takes to be the contention in the Green Book that the Spencer Road — Chapman Road connection will adversely affect the conservation value of part of M68 — the MRD maintains that the road has been specifically planned to pass through land suitable only for parkland and not land having conservation value. The MRD also points out that Figure 139 incorrectly names Willcock Street as "William Street".

WAWA endorses Recommendation M68.1; it does not want to be involved in M68.3 though the Department of Fisheries and Wildlife has responsibilities towards Recommendation M68.3(a).

The Waterways Commission endorses Recommendation M68.1, except that the Waterways Commission should be given either sole or joint vesting of the reserve — part of the reserve is already within Swan River Management Authority boundaries. Recommendation M68.2 is endorsed, though consideration should be given to including the Waterways Commission in joint vesting. Recommendation M68.3 is endorsed; regarding Recommendation M68.3(f), it is pointed out that Adenia Road Rubbish Tip is threatening foreshore vegetation.

The MRPA objects to Recommendation M68.2 because the land is of questionable conservation value and may be required in the future for the Chapman — Spencer link. Also, because most of the land is privately owned, it is likely to come under MRPA control which would make Land Act reservation inappropriate. The planned road link is placed further from the river than is shown in Figure 139.

M69 KENWICK SWAMP

WAWA endorses Recommendation M69.2 except that the land should have "A" class status because it would be purchased with public funds and is of very high conservation value.

The MRPA advises that the area has been reserved under the Metropolitan Region Scheme for "Special Uses" at the request of the University of W.A..

A couple of other submissions endorse the Recommendations and call for "A" class status for the area.

M70 HEATHLAND, WATTLE GROVE

WAWA opposes Recommendation M70.1 because the Authority does not wish to be involved with management of privately-owned land.

M71 CANTONMENT HILL, FREMANTLE

The Department of Administrative Services submits that the bulk of the flora on the Hill is in the area owned by Fremantle City Council rather than the relatively bare Commonwealth land.

The W.A. Heritage Committee submits that the Hill has historic merit.

M72 SIR FREDERICK SAMSON PARK, SAMSON

The Campaign to Save Native Forests submits that the purpose of Reserve C34238 should be conservation; also it endorses Recommendations M72.2-3.

M73 BOORAGOON LAKE

The W.A. Field and Game Association endorses Recommendation M73.1.

One submission calls for the area to be made a conservation reserve.

M74 BULL CREEK

WAWA endorses the Recommendations, except that in Recommendation M74.3 the reference to "W.A. Wildlife Authority" should read instead "Department of Fisheries and Wildlife".

The Waterways Commission endorses the Recommendations, though it submits that the Swan River Management Authority should be involved in management of the reserves.

The Department of Lands and Surveys submits that the triangular portion of vacant Crown land on the northern boundary of Reserve C32563 should be considered for inclusion in the reserve. Recommendation M74.3 is legally invalid in its current wording: "request" should be substituted for "help ensure".

M75 UPPER CANNING AND SOUTHERN RIVERS

The Tertiary Education Canoe Club endorses the Recommendations, considering Recommendation M75.2(e) particularly important.

The MRD submits that the recently amended Metropolitan Region Scheme should be acknowledged. This includes Roe and Beechboro — Gosnells Freeways and Brookton Highway, for which detailed land protection plans can be made available.

The Waterways Commission endorses Recommendation M75.1; it comments on Recommendation M75.2 that the Swan River Management Authority should be involved in the definition of management objectives. The waterways in M75 are affected by nutrient-rich runoff from dry land liquid waste disposal. Consideration should be given to preventing stock access to the river which causes extensive erosion.

The MRPA advises that it has adopted a land use plan for the section of Canning and Southern Rivers between Nicholson Road and Spencer Road.

The Rotary Club advises that it is undertaking a project consisting of construction of recreation facilities along 6km of foreshore on the Canning and Southern Rivers. The Gosnells City Council has approved the Club's plan for the project which takes into account the considerations raised in Recommendations M75.2(a)-(e).

M76 MARY CARROLL PARK

The Gosnells City Council and the W.A. Field and Game Association endorse the Recommendations.

M77 RESERVE C22865, KALAMUNDA AND RESERVE C20641, BICKLEY

The Campaign to Save Native Forests endorses the Recommendations; it proposes that lot 930 and part of lot 738 be included in Reserve C22865.

The Department of Lands and Surveys says that the PWD advised as late as 1977 that Reserve C20641 was still required for water supply.

M78 RESERVE C10601, CARMEL

Kalamunda Shire Council and the Darling Range Branch of the W.A. Wildflower Society endorse the Recommendations.

The Campaign to Save Native Forests opposes the Recommendations — it wants the purpose of the reserve to be conservation and vesting to be in Kalamunda Shire.

M79 RESERVE C21172, CANNING MILLS

The Campaign to Save Native Forests wants the purpose of the reserve changed to conservation and vesting to be given to Kalamunda Shire.

Other submissions endorse the Report's comments.

M80 DARLING SCARP

The Department of Lands and Surveys refers to proposals for new schools (Emmaus Christian School and Bedfordale Primary School) on vCI adjacent to Bungendore Park. The Department reserves the right to comment should the area be further considered as a Regional Park.

The MRPA makes the general comment that M80 is a complex area of landscape interest and varied land use and therefore requires a "flexible and adaptive approach". Also the MRPA comments on Recommendation M80.2 that certain areas designated for inclusion in the regional park are inappropriate because they are subdivided and developed for residential use and therefore too expensive to acquire.

The MRD points out that rock base and road sealing aggregate are quarried from the Darling Scarp. If relocation of quarries were necessary, new sites would need to be close to road construction projects and continuity of supply would have to be maintained during relocation. Albany Highway will require widening on its south side into Bungendore Park. Detailed protection plans are available.

Gosnells City Council endorses Recommendations M80.2 to M80.7. Recommendation M80.1 is opposed as failing to recognise current land use in certain parts of the area proposed for the Regional Park: particular concern is expressed over three areas designated on an attached map which contain rural and housing development. Clear definition of where the escarpment, foothills and coastal plain start and finish is considered necessary before any final decision is made on the area to be included in the Regional Park.

Kalamunda Shire Council points out that in August 1978 and February 1981 Council requested the MRPA to prepare a statement of planning policy for the Darling Scarp in relation to parks and recreation reserves and plans for future access roads — no result has yet been achieved. Council endorses Recommendation M80.7. Council proposes that consideration be given to leasing of land in the area to private owners with provision being made for public access and conservation of flora and fauna. This system of creating virtual "resident caretakers" might improve the present unsatisfactory management and co-ordination of users of the area.

The Conservation Council of W.A. considers that the relevance of the Regional Park concept is poorly explained and that inadequate information is given on how and by whom they will be managed. No scenic road should be built along the length of the Scarp.

Bungendore Park and the adjacent vacant Crown land should be amended in purpose to conservation of flora and fauna, and the land should be vested jointly in Armadale Town Council and the W.A.W.A. Other areas important for conservation within M80 should have reports prepared on them.

The Campaign to Save Native Forests makes these comments on the Recommendations:

M80.1 — is endorsed provided regional park management conforms to guidelines laid down earlier in the submission.

M80.5 — is opposed: there should be no quarrying in such a reserve.

M80.6 — is endorsed; also it is submitted that Crown land adjacent to Bungendore Park is valuable for its orchids and should be added to Reserve A4561. The proposed school should not be built here.

M80.7 — is opposed, for the same reason as M80.5.

Bungendore Park and adjacent Crown land should be managed as a flora and fauna reserve; the western edge of the area is also important for landform conservation as it forms part of a chain of Scarp-face reserves. No scenic road should be built along the Scarp. The Wungong Gorge area should be added to the park. The Mills Road and Lesmurdie Falls areas require careful management to restore their floristic value.

The Extractive Industries Association seeks assurances that the proposed Regional Park will not adversely affect the potential for mining or extractive industry in the area. Recommendation M80.2 is opposed if the area proposed for "reservation" includes land with mineral potential. Recommendation M80.3 — should include consideration of mineral potential. Recommendation M80.4 — is opposed. Quarrying in the Scarp is currently being examined by a number of committees — the System 6 Study recommendations should not have been made before completion of the findings of these committees.

Cockburn Cement Ltd. submits that implementation of Recommendations M80.5 and M80.7 should not interfere with the availability of quality bauxite necessary for the cement industry or with construction and maintenance of access roads needed for haulage of raw materials.

Armadale Christian Education Association (for) Emmaus Christian School applies for allocation of a portion of vCI adjacent to Bungendore Park. Construction of a school on this site would not be incompatible with the adjacent Regional Park because: the area involved is small and would not affect access to Bungendore Park; land could be improved through rubbish clearing, reforestation, etc; Public Health Department has accepted school plans for water catchment and sanitation and does not expect pollution; planning of buildings and tree placement should prevent visual pollution.

116 Residents of Bedfordale (signatories to one submission) endorse Recommendation M80.6 and oppose development of a school on this area of Crown land because of likely problems relating to water supply, septic effluent, fire hazard, traffic congestion and vandalism.

A number of other submissions oppose development of the School on this Crown land and endorse Recommendation M80.6.

A number of submissions endorse the application of the Regional Park concept to M80, some suggesting that the whole area ultimately be consolidated into a single A Class conservation reserve or National Park, with others calling for identification of smaller floristically important areas within the locality which should receive special protection (such as Bungendore Park). Substantial opposition is registered to quarrying and disposal of overburden on the Scarp.

M81 RESERVES C19662 AND C32728, KARRAGULLEN

The W.A. Wildflower Society (Armadale-Kelmscott Branch), Campaign to Save Native Forests and a private citizen endorse amalgamation of the two reserves but call for a composite reserve to have "A" class status.

WAWA submits that joint vesting of the composite reserve is unnecessary since the surrounding area is not built up. Reserve C19662 should either be vested solely in WAWA or given over to the local authority.

The MRPA calls for Reserve C32728 to retain its "Government Requirements" purpose although there is no objection to interim management of the area for conservation.

The Department of Lands and Surveys points out the existence of the lease and says that it has been held since 1948. Prior determination would therefore be necessary before implementation of Recommendation M81.1.

M82 RESERVE C5704

The MRPA comments that "Recreation use should not necessarily be excluded from the Reserve purpose". Further explanation of the Recommendation is required.

The Campaign to Save Native Forests proposes that vesting of the reserve should be in a conservation authority. Timber cutting and bauxite mining should be excluded from the reserve, or at least confined to areas of low conservation value. A feral pig eradication programme is needed.

M83 RESERVE C2457, MUNDIJONG

Serpentine — Jarrahdale Shire Council opposes the amended purpose proposed in Recommendation M83.1 because plans and applications for use of the area under its present purpose have already been made. However if a suitable alternative area could be provided Council would have no further objection.

The MRPA opposes Recommendation M83.1 because exclusion of Recreation from the purpose of the reserve is unacceptable in view of its regional significance; also mining should not take place without strong justification.

The Extractive Industries Association wants the mining potential of the area protected.

The Conservation Council of W.A. calls for the purpose of the reserve to be conservation of flora and fauna, with vesting jointly in WAWA and the Shire of Serpentine-Jarrahdale.

M84 GOORALONG MANAGEMENT PRIORITY AREA

The Forests Department proposes that Reserves B988 and B990 and freehold land held in the name of the Crown be made State Forest as recommended in the CLUC Report.

It is suggested that M84 should ultimately be included in a composite park formed by localities M84-87.

M85 SERPENTINE NATIONAL PARK

Serpentine-Jarrahdale Shire Council opposes Recommendation M85.1 because it cannot afford loss of gravel. Recommendation M85.6 should not lead to restriction of recreational activities, swimming particularly. Acquisition of freehold land would be detrimental to Council's rate income and hence a burden on ratepayers.

The National Parks Authority gives general endorsement to the Recommendations. However some of the areas proposed for addition to the National Park have been degraded through clearing and used as gravel pits and rubbish dumps — this applies particularly to Reserves C26079, C26080 and C32202. If these areas are to be added to the National Park substantial funds will have to be provided for their rehabilitation.

The Conservation Council of W.A. and the Campaign to Save Native Forests (CSNF) both propose that M84, M86 and M87 be incorporated in Serpentine National Park. CSNF opposes mining, quarrying, SEC lines, dams in the area.

The Department of Lands and Surveys comments on Recommendation M85.1 that the Shire advised in 1976 that it opposed release of Reserve C26080 because of scarcity of available gravel.

A submission from a land owner adjacent to the Gravel Reserves says bad management of Reserves is causing problems; rehabilitation is requested.

M86 KARNET MANAGEMENT PRIORITY AREA

It is suggested that M86 should become part of a composite park formed by localities M84-87. Serpentine-Jarrahdale Shire Council opposes damming of Dirk Brook because of possible consequences for downstream areas, and also opposes acquisition of freehold land (Recommendation M86.3) because this would reduce Council's rate income.

The Forests Department wishes to see the CLUC Report recommendation relating to public utilities reinstated.

M87 SERPENTINE MANAGEMENT PRIORITY AREA

The Forests Department wishes to see the freehold land held in the name of the Crown to be included in State Forest as part of the MPA.

The Serpentine-Jarrahdale Shire Council would oppose acquisition of privately-owned freehold land because this would reduce the Council's rate income.

Submissions stress the importance of conserving the pipehead dam area and suggest amalgamation of M87 with M84-86.

M88 LAND NORTH OF KEYSBROOK

Serpentine-Jarrahdale Shire Council agrees that Westrail care of flora in its reserves could be improved (M88.1) but says that Recommendation M88.2 is unlikely to be effective because of inevitable changes in ownership and increasing use of horses which are the main threat to trees.

M.J. Norman says the EPA should exercise more power to protect the salmon white gum.

M89 WOODLAND EAST OF KEYSBROOK

Serpentine-Jarrahdale Shire Council would oppose acquisition of freehold land because this would be detrimental to Council's rate income and therefore be a burden on ratepayers.

M90 QUARANTINE STATION AND EXPLOSIVES MAGAZINE RESERVE, WOODMAN POINT

Cockburn City Council endorses Recommendation M90.1 subject to the reserve being given "A" class status and adequate funds provided to Council. Recommendation M90.2 is endorsed provided Council retains control over the Reserve; Recommendation M90.3 is endorsed; Recommendation M90.4 is endorsed provided adequate funds are made available.

Jervoise Bay/Woodman Pt. Project Coordinating Steering Committee opposes Recommendation M90.1 because it is contrary to a Commonwealth — State agreement that much of the land concerned will be given "A" class status. Recommendation M90.3 is opposed because C24305 should also have "A" class status.

WAWA endorses Recommendation M90.1, except that the area is of such conservation importance as to warrant "A" class status. The boundary of the reserved area should be as shown on attached map (see submission). Regarding Recommendation M90.4 — a management plan will be drawn up for that part of the locality vested in WAWA; the Authority does not wish to manage privately owned land.

The MRPA advises that a report concerning Woodman Pt, dealing with all the considerations raised in the System 6 Report recommendations is currently under consideration by the Government. Much of the area is likely to become an "A" class reserve, this being required under the terms of transfer from the Commonwealth.

The Department of Lands and Surveys endorses the submission of the Jervoise Bay — Woodman Pt. Coordinating Steering Committee.

Robert Powell endorses Recommendation M90.1 but considers that the area proposed for protection in the summary report of Jervoise Bay — Woodman Pt. Planning Study 1978 should be extended.

M91 RESERVE A24309, COOGEE

Cockburn City Council opposes the change of vesting proposed in Recommendation M91.1 because it might close off possible development options. However Recommendation M91.2 is endorsed.

M92 COCKBURN WETLANDS — WESTERN CHAIN

Industrial Lands Development Authority (ILDA) advises that most of M92 is owned by ILDA, though all land reserved for Parks and Recreation is currently being transferred from ILDA to the Crown. The Authority calls for clarification of the statement that "activities on adjacent privately owned land are adversely affecting several of the wetlands; and of the relevance of the buffer zone. Also it states that the western boundary of the Parks and Recreation land and the highway reserve are incorrectly placed in Figure 157B — they should be further west.

The MRD points out that the reserve for the controlled access highway passes close to Lake Coogee.

The MWA states that the lakes may be used as a drainage compensating basin.

The MRPA comments on Recommendation M92.2 that it is unlikely that Market Garden Swamps 1, 2, 3 will be reserved for Parks and Recreation under the MRS because they are not of regional significance. The SW Corridor Structure Plan does not include them as potential reserves, and the cost of acquisition would be very high. Also the MRPA advises that a fly ash disposal site is to be located immediately north of the railway reserve.

The Department of Lands and Surveys seeks the right to comment should the area be considered further as a Regional Park.

Cockburn City Council advises that a large portion of Market Garden Swamps is under study for drainage in the Packham Town Planning Scheme.

The W.A. Field and Game Association endorses the Recommendations and calls for control of Groundwater extraction and stock access.

Several private individuals endorse the Recommendations but express concern at adverse effects on the area from Packham Scheme (which would involve backfilling wetlands) and recreation (such as use of power boats).

The Campaign to Save Native Forests endorses the Recommendations.

The W.A. Naturalists Club describes the area as suitable for declaration as a Conservation Reserve; expresses concern at the proposed Woodman Pt. Sewage pipe.

M93 COCKBURN WETLANDS — EASTERN CHAIN

Four submissions (MRD, Melville City Council, MRPA and R. Brown) support extension of Farrington Road north of North Lake in opposition to Recommendation M93.7. One submission supports M93.7 because of potential drainage and other effects and another advises that clearing for the road-works has already taken place.

Regarding Bibra Lake Adventure World, mixed support and opposition is expressed through submissions. Council also wishes to develop part of the land around Bibra Lake for a Sporting Complex.

MWA advises that the lakes may be used as a drainage compensating basin. M93 is outside the Jandakot Public Water Supply Area. Groundwater levels may be affected.

Australian Wader Studies Group says Lake Thompson should be recognised for its importance in providing habitats for Palaeartic wader birds.

G.A. Spencer calls for an extension of the area to include a 1.5km strip west of Kogolup Lake extending from Yangebup Road in the north to Thompson's Lake in the south since it contains a diversity of plant, animal and bird life. It should be made a separate conservation reserve. Also, east side of Bibra Lake should remain in its natural state and management should take note of the strong signs of regeneration around Yangebup Lake.

WAWA does not support inclusion of Reserves A15556 and A29241 in a Regional Park because of their special conservation value.

The MRPA suggests drainage should be recognised as a purpose for Recommendation M93.4.

The Conservation Council of W.A. wants (i) SHC land to be rezoned for Parks and Recreation as a buffer (ii) EPA to review M93's environmental problems (iii) Cockburn Wetlands Study to be updated (iv) cessation of waste discharge into wetlands.

The Department of Lands and Surveys seeks right to comment should M93 be considered further as a regional park.

M94 JANDAKOT AIRPORT

The MWA advises that groundwater levels may be lowered as a result of groundwater extraction. Three other submissions endorsed the Recommendation.

M95 FORRESTDALE LAKE

Forrestdale Progress Association suggests extension of Reserve A24781 to include lots 368-370 (on the north-east side of the lake).

D.F. James recommends extension of the area to include lots 368-372 (to preserve banksia woodland and provide buffer zone); also calls for cessation of aerial spraying for midgies, monitoring of drain entering the lake, tax and rate concessions for conservation moves by land owners, and change of purpose for Reserve C27165 from recreation to conservation of flora and fauna.

The W.A. Wildflower Society calls for a bar on draining the area and a bar on horse riding. It also suggests that the balance of Reserve C2165 should be added to Reserve A24781 instead of being used for a golf course and that the Beechboro-Gosnells Freeway should not pass close to the lake. Several other submissions call for relocation of proposed main roads away from the area. Other submissions also call for bars on horse riding, cessation of drainage and inclusion of extra land.

WAWA will prepare a management plan for the area in due course.

The Royal Australian Ornithologists Union wants additional wetlands included and adds that the lakes should not be deepened.

The Australian Wader Studies Group submits that the lake's importance in providing habitats for Palaearctic wader birds should be recognised.

MWA advises that a drain crosses the area outside Jandakot Public Water Supply Area; Ground-water levels may be affected.

The Department of Lands and Surveys advises that the inclusion of Reserve C37016 in Reserve A24781 at a later date is intended.

M96 GARDEN ISLAND

The Department of Administrative Services advises that the munitions depot north of Collins Point is nearly completed.

Several submissions from private individuals stress the conservation and recreation importance of the area north of Collins Pt. / Cliff Head.

M97 RESERVE C36110, WANDI

No submissions.

M98 RESERVE C31874, CASUARINA

Two private individuals endorse Recommendation M98.1 and state that off-road vehicles should not have access to the area.

WAWA endorses Recommendation M98.1 except that water should not be included in the purpose of the reserve.

M99 RESERVE A25886, WEST OF BYFORD

Serpentine — Jarrahdale Shire Council states that the management of the area needs to be improved, particularly in regard to elimination of cats and foxes.

WAWA endorses Recommendation M99.1 but sees no justification for inclusion of Water as a purpose of the Reserve.

M100 RESERVE C28167, SOUTH-WEST OF BYFORD

Serpentine — Jarrahdale Shire Council states that management of the area needs to be improved, particularly in regard to elimination of cats and foxes.

WAWA endorses Recommendation M100.1 but sees no justification for inclusion of Water as a purpose.

M101 CAPE PERON, SHOALWATER BAY AND WARNBRO SOUND

The Harbour and Light Department opposes the proposed Aquatic Reserve if it affects the water ski area north of Boundary Road.

WAWA endorses Recommendation M101.1 except that there is no such thing as a "C" class Aquatic reserve and the purpose of the Reserve needs clearer definition. It endorses Recommendation M101.2-3.

The Department of Lands and Surveys says that Recommendation M101.4 seems to conflict with the full purpose of Reserve A17070, and either the purpose or the recommendation should be changed.

The W.A. Naturalists Club (Kwinana Rockingham Branch) endorses the establishment of an aquatic reserve but proposes that it be extended south to include Seal and Penguin Islands.

Several submissions oppose plans to run a sewage pipeline through dunes and offshore reefs at Cape Peron and discharge sewage in the vicinity of the proposed Aquatic Reserve.

Three submissions from private individuals call for Reserve A17070 to be vested in WAWA.

M102 LAKE RICHMOND, ROCKINGHAM

Harbour and Light Department states that Lake Richmond should remain open to boating.

WAWA submits that because the reserve is in an urban setting, has little remaining vegetation and is used for recreation, it should be vested solely in the Shire.

MRPA makes these comments:

- Recommendation M102.5 — this is unlikely to be feasible
- Recommendation M102.6 — it would be more appropriate for the local authority to define management objectives.
- Figure 164 — it does not show the standard gauge railway reserve which appears in the MRS, and the alignment is incorrectly indicated.

The W.A. Naturalists Club (Kwinana Rockingham branch) calls for great care to be exercised in the extension of the railway and expressway through the area — the sedges and perennial herbs are important to wildlife; it also opposes the MWA plan for burial of the sewerage pipeline in the railway reserve; calls for creation of buffer zone between the lake and Richmond Garden housing estate.

Other submissions express concern at the loss of the lakes' vegetation by pipeline/rail construction along the railway reserve.

M103 LAKES COOLOONGUP AND WALYUNGUP

The Department of Lands and Surveys seeks the right to comment should the area be considered further as a Regional Park.

The MRPA advises that the area is the subject of ongoing planning activities conducted by the Town Planning Department on behalf of the MRPA. The considerations raised in Recommendation M103.3 are being taken into account. The Authority comments on Recommendation M103.4 that a technical committee would be preferable, and comments on Recommendation M103.5 that Drainage should be included as a purpose.

Christian Youth Camps Inc. (C.Y.C.) endorses Recommendations M103.1-2 but considers Lot 14 of Peel Estate Lot 317 should not be included in the Regional Park because the site contains a youth camp. Regarding Recommendations M103.3-4, C.Y.C. would like to be involved in consultations with MRPA.

The Salvation Army operates the Lakeside Youth Camp within M103 — it does not want the camp included in a Regional Park. Otherwise the Recommendations are endorsed; the Army would be willing to participate in the advisory committee proposed in Recommendation M103.4.

M104 RESERVES C31102 AND C33581, LEDA

The MRD states that M104 will be dramatically affected by the Important Regional Roads shown in a recently approved amendment to the MRS. Some of this area has also been rezoned for urban purposes.

The MRPA comments on Recommendation M104.1 that it is undesirable that the MRPA be involved in the definition of management objectives. The MRPA advises that there have been changes in the MRS: part of the locality is now Urban Deferred; Important Regional Road Reserves now cross it; wetland portions are expected to remain zoned as "Rural" and the local authority will be involved in their management.

The Extractive Industries Association submits that the mineral potential of the area requires further investigation.

The Mines Department submits that it should be involved in the definition of management objectives.

The Department of Lands and Surveys advises that, subject to the preparation of an acceptable management plan, the Department has committed Reserve C33581 to the Town of Kwinana for use for equestrian purposes.

M105 LOWLANDS PROPERTY, WEST OF SERPENTINE

No submissions.

M106 PORT KENNEDY

Westralia Sands Ltd opposes the Recommendations because multiple vesting is not applied and they consider the area to be of high mineral potential.

Y.M.C.A. supports the Regional Park concept for M106.

Ralph Stanton Planners (on behalf of Secret Harbour Pty. Ltd.) support the Regional Park concept for M106 provided that lots 1092 — 1094 (owned by the developers) and part of Reserve C20716 are not included. They point out the degraded condition of these lots and state that the Report's description of the area is inaccurate. Secret Harbour Pty. Ltd. is committed to the residential development of their land.

The MWA advises that a future drain will cross M106.

The MRPA has resolved that in the interim, no further action to advance the development of Port Kennedy will be taken.

The Conservation Council of W.A. wants Reserve C20716 to be amended to Conservation of Flora and Fauna and Parkland, to be vested in W.A. Wildlife Authority and Rockingham Shire Council. The vCI should be added to the Reserve.

The Department of Lands and Surveys seeks the right to comment should the area be considered further as a Regional Park.

The private submissions make the following points: there is a need for facilities for a nudist beach at Warnbro; the local branch of the Naturalists' Club should be represented on the advisory committee proposed in Recommendation M106.4; dune restoration is supported; there is general endorsement of the Recommendations.

M107 PEELHURST, SINGLETON AND MADORA

Mandurah Shire Council endorses the Recommendations and repeats its proposal that the east-west zone between Madora and Singleton should be relocated northwards to coincide with the northern boundary of the municipality. Also, since Mandurah Shire is outside the metropolitan area and therefore responsible for land acquisition, a recommendation is called for from the System 6 Study regarding an appropriate funding mechanism.

The Department of Lands and Surveys advises that Reserves C25043 and C27066 were created according to Section 20A of the Town Planning and Development Act as a condition of subdivision. Inclusion of "Landscape" in the purpose of the reserves is inappropriate and incapable of legal definition. Management guidelines put forward in Recommendation M107.3 could be just as effectively promoted without the changed purpose.

Feilman Planning Consultants (on behalf of M. & N. Perry, owners of land in Location 16) oppose reservation of area of M107 because it has little recreational or environmental significance. Additional objection is that the land has been committed to urban use by the MRPA Planning Strategy for the South-West Corridor. A "parkway" west of Mandurah Road is desirable but the strip proposed is far too wide and extends well west of the dune ridge referred to in the Report.

M108 GOEGRUP LAKES

Murray Shire Council endorses Recommendations M108.2-3. Recommendation M108.4 requires clarification, particularly concerning the form joint management arrangements might take and the payment of compensation should land be acquired. Regarding Recommendation M108.5, Council has never stated in the past that it wishes to have the lakes dredged; however dredging of the channel between Lakes Cogrup and Willyabrup could be useful.

Mandurah Shire Council opposes the change in purpose of Reserves C26351 and C25360 because these are the last areas left in the district for duck-shooting.

Serpentine — Jarrahdale Shire Council says that the owners of lots 1087-1090 should not have their freehold rights restricted.

WAWA endorses Recommendation M108.1-3 but opposes M108.4 because the Authority does not wish to be involved in management of private land.

The Waterways Commission endorses the Recommendations. Regarding M108.4, Peel Inlet Management Authority (PIMA) should be consulted on the definition of management objectives. The Department of Lands and Surveys comments regarding Recommendations M108.2-3 that because of the separation of the reserves, incorporating Reserves C32726 and C35283 into Reserve C26351 is inappropriate until intervening land can be acquired. Consolidation of Reserves C32726 and C35283 into a separate reserve would be preferable.