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SOME NATURE RESERVES OF THE  
WESTERN AUSTRALIAN WHEATBELT

PART 11: Mount Marshall Shire

B.G. MUIR  
Western Australian Museum  
1978

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SOME NATURE RESERVES OF THE WESTERN AUSTRALIAN WHEATBELT

PART 11: Mount Marshall Shire

B.G. MUIR

INTRODUCTION

Mount Marshall Shire lies in the eastern-central wheatbelt and has an area of about 10134 square km. There are 13 Nature Reserves within the Shire totalling 20.89 sq. km or 0.2% of the area of the Shire. The largest Nature Reserve in the Shire is only ca 438 ha (Reserve 17923) and the smallest one only ca 9 ha (Reserve 19036). Ten of the 13 Reserves are less than 200 ha in area. Only 2 Reserves have "A" classification and only 2 are vested in the Western Australian Wildlife Authority, and only a further 3 have any vesting at all.

This survey took place in early December 1978 and consisted of brief examinations of 7 Reserves: 17771, 17923, 20986, 24534, 24539, 26687, and 27913. A report on each of the Reserves is appended.

METHODOLOGY

Physical characteristics of the reserves were obtained directly from the most recently available lithographs as published by the Department of Lands and Survey, and interpreted from observations made on the reserve.

Reserves were examined by vehicle where tracks were available, and on foot. Local knowledge and air-photographs were consulted to find areas of particular interest. Only a very short time could be spent on each reserve, the smaller ones being examined in 1 or 2 hours, the larger ones in a full day.

Vegetation was classified using Muir's (1977) system (Table 1), which was designed specifically for describing wheatbelt vegetation. In the presentation of the abbreviated descriptions (in the section titled "Vegetation") capital letters in descriptive terms refer to specific classes of life form, height and canopy cover as used in the classification.

As the survey period on any reserve was very brief only the commonest plant species could be noted. Any species in which less than 3 individual plants were encountered within a space of 10-15 minutes examination of the vegetation were considered uncommon and are not listed. As much of the survey work was carried out rapidly and in unfavourable seasons, many plants were not flowering and so identifications were made from foliage alone. Only

TABLE 1: VEGETATION CLASSIFICATION AS USED IN WHEATBELT SURVEY

LIFE FORM/HEIGHT CLASS	CANOPY COVER			
	DENSE <b>d</b> 70-100%	MID-DENSE <b>c</b> 30-70%	SPARSE <b>i</b> 10-30%	VERY SPARSE <b>r</b> 2-10%
T Trees >30m M Trees 15-30m LA Trees 5-15m LB Trees <5m	Dense Tall Forest Dense Forest Dense Low Forest A Dense Low Forest B	Tall Forest Forest Low Forest A Low Forest B	Tall Woodland Woodland Low Woodland A Low Woodland B	Open Tall Woodland Open Woodland Open Low Woodland A Open Low Woodland B
KT Mallee tree form KS Mallee shrub form	Dense Tree Mallee Dense Shrub Mallee	Tree Mallee Shrub Mallee	Open Tree Mallee Open Shrub Mallee	Very Open Tree Mallee Very Open Shrub Mallee
S Shrubs >2m SA Shrubs 1.5-2.0m SB Shrubs 1 0-1.5m SC Shrubs 0.5-1.0m SD Shrubs 0.0-0.5m	Dense Thicket Dense Heath A Dense Heath B Dense Low Heath C Dense Low Heath D	Thicket Heath A Heath B Low Heath C Low Heath D	Scrub Low Scrub A Low Scrub B Dwarf Scrub C Dwarf Scrub D	Open Scrub Open Low Scrub A Open Low Scrub B Open Dwarf Scrub C Open Dwarf Scrub D
P Mat plants H Hummock Grass  GT Bunch grass >0.5m GL Bunch grass <0.5m J Herbaceous spp.	Dense Mat Plants Dense Hummock Grass  Dense Tall Grass Dense Low Grass Dense Herbs	Mat Plants Mid-Dense Hummock Grass  Tall Grass Low Grass Herbs	Open Mat Plants Hummock Grass  Open Tall Grass Open Low Grass Open Herbs	Very Open Mat Plants Open Hummock Grass  Very Open Tall Grass Very Open Low Grass Very Open Herbs
VT Sedges >0.5m VL Sedges <0.5m	Dense Tall Sedges Dense Low Sedges	Tall Sedges Low Sedges	Open Tall Sedges Open Low Sedges	Very Open Tall Sedges Very Open Low Sedges
X Ferns Mosses, liverwort	Dense Ferns Dense Mosses	Ferns Mosses	Open Ferns Open Mosses	Very Open Ferns Very Open Mosses

if an important dominant plant was not recognised were specimens bought back to the laboratory for examination.

Soil was examined very briefly and classified according to Northcote's (1971) texture groups and Munsell (1954) colour terms.

Fire history was determined from observation of the area, appearance of air-photographs and information from nearby farmers.

Fauna were not specifically sought, but some species (usually the most obvious) were encountered while examining vegetation. The lists provided are only a small fraction of the species present on nearly every reserve examined. Scats, footprints, burrows, nests and other indirect evidence is used only where identification is certain. Observations by farmers are used if considered reliable.

Opinion and recommendations expressed in these reports are entirely those of the author and are based on extensive experience in vegetation mapping and description in the wheatbelt, and association with faunal and habitat studies conducted by suitably qualified researchers.

## RESULTS AND DISCUSSION

The features of each Reserve can be summarised as follows:

Reserve 17771 - ca 106 ha: woodland, 2 types shrubland plus 2 burn regrowth associations; fairly rich flora; protects Gabbin Siding from strong winds.

Reserve 17923 - ca 438 ha: 2 woodlands, 2 mallee, 1 shrubland, 1 sedgeland plus granite complexes; rich in plant species; probably rich in fauna; waterhole on granite outcrop very important for fauna; recommend "A" classification.

Reserve 20986 - ca 71 ha; 1 woodland, 1 mallee plus fire regrowth, 2 shrublands, 1 fire regrowth heath; very rich in plant species for such a small size; seral stage will provide future increased habitat diversity.

Reserve 24534 - ca 333 ha; shrubland mosaic; isolated, therefore valuable for fauna; unauthorised airstrip has damaged ca 2.4% of the area of the Reserve.

Reserve 24539 - ca 162 ha; shrubland mosaic with patches mallee and small area of woodland; important for transient fauna.

Reserve 26687 - ca 378 ha; excellent stand woodland, ephemeral lake with species rich marginal dunes, salt marshes; important nest site for birds; will experience pressure for recreational purposes in the future.

Reserve 27913 - ca 34 ha; entirely woodland; very important nesting area and excellent refuge for woodland dwelling fauna; large adjacent Water

Reserve should be added to Nature Reserve; if this were done this may become one of the best woodland reserves in the Shire.

Of the 7 reserves examined most were undisturbed by human influence, except for Reserve 24534 with an airstrip. Several have not been burnt for a long time and thus support a richer flora than other reserves of younger seral stages.

Reserve 17923 is particularly rich in associations and species and gives every indication of being exceptionally rich in fauna. I have recommended it be given "A" classification.

Mount Marshall Shire is the largest I have examined in the wheatbelt so far, and yet it has only about 0.2% of its area set aside in Nature Reserves. The next largest Shire examined, Dalwallinu Shire, is less than three-quarters the area of Mt. Marshall Shire, yet has 1.3% of its area set aside. Although still inadequate this is 6 times more future natural resource available. I strongly recommend that uncleared land, be it Crown or privately owned, be examined within the Shire and that immediate action be taken to set some of it aside for conservation purposes. This is particularly urgent if further expansion of wheatgrowing into suboptimal agricultural areas is expected.

#### ACKNOWLEDGEMENTS

Mr. M. Powell assisted in the field. The Western Australian Herbarium provided access to collections and assistance in identifying plants.

## Reserve 17771

Located ca 19 km due W Bencubbin Townsite and shown on lithograph 55/80, A2.

### Background

Originally set aside 29 July 1921 for "Recreation". The area of the Reserve at that time was ca 40.5 ha. The area was decreased to ca 40 ha on 24 July 1925 and its classification changed to "Conservation of Flora" on 19 November 1965. The Reserve was increased to its present size of 104.5455 ha on 16 July 1971.

### Physical

Reserve 17771 is approximately rectangular, ca 0.8 km long (E-W axis) by 0.5 km broad (N-S axis) and with an area of 104.5455 ha. No contour maps are available but there is an overall topographic variation estimated at 2-4 km. Gabbin Siding, 0.5 km S of the Reserve, has an altitude of 341 m above sea level.

### Vegetation

The SW corner of loc. 377 and a small patch at the N end has a Eucalyptus transcontinentalis Open Low Woodland A over Melaleuca hamulosa Open Scrub over mixed Open Low Scrub A. The rest of the Reserve has a mosaic of Acacia sp. 20 Low Scrub B or Heath B which is mostly regrowth following fire. The original association was probably Open Scrub. Gravel pits on the W side have regrowth of several species of plants. The S end of the Reserve was not examined in detail.

### Plant species

Forty-nine plant species were recorded, of which 13 are exploited by the wildflower seed trade.

### Nest hollows

Numerous hollow limbs and trunks in Eucalyptus transcontinentalis areas.

### Weeds

Scattered in E. transcontinentalis areas, and in gravel pit. Commonest species were Ptilotus polystachys and Solanum hystrix.

## Fire history

The woodland areas are older than 30 years, the remainder ca 14 years old.

## Fauna

Kangaroo: scats seen.

Welcome Swallow (Hirundo neoxena): several flying over gravel pit.

Western Shrike-Thrush (Colluricincla harmonica rufiventris):  
1 calling in woodland SW corner.

White-browed Babbler (Pomatostomus superciliosus): calling from dense thicket on edge of burn.

Yellow-rumped Thornbill (Acanthiza chrysorrhoa): common in woodland.

Magpie-lark (Grallina cyanoleuca): 2 flying over Reserve.

Australian Raven (Corvus coronoides): 3 in gravel pit.

## Exotic fauna

Cat scats seen in woodland; 1 seen in heath.

## Firebreaks and fences

Firebreaks in adjacent farmland on N side. Fenced on N and E sides only.

## Human usage

Gravel pits still partly in use; timber removed from woodlands.

## Adjacent uncleared land

Contiguous with Reserve 17771 is a Sanitary Site (18950), a Cemetery (17772), a Flora Reserve (19036) and a Water Reserve (16683). The total area of uncleared land contiguous with the Reserve is ca 100 ha.

## Opinion and recommendations

Reserve 17771 presently contains a seral mosaic of shrublands providing valuable habitat for fauna preferring this type of association. It also supports woodland with numerous nest hollows. The flora is quite rich in species. The Reserve is also valuable to protect Gabbin from the strong NW winds which are frequent in the area. I recommend Reserve 17771 be retained in its present form and be vested in the Western Australian Wildlife Authority.

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APPENDIX 1

Reserve 17771

Eucalyptus transcontinentalis woodland-unburnt

Eucalyptus transcontinentalis trees, 8-14 m tall, 2-10% canopy cover, over Melaleuca hamulosa shrubs, 3-5 m tall, 2-10% canopy cover over Daviesia nematophylla and mixed shrubs, 2 m tall, 2-10% canopy cover. Also recorded were: Acacia erinacea, A. mackayana, A. sp., Bassia diacantha, Dianella revoluta, Enchylaena tomentosa, Eremophila oppositifolia, Eucalyptus redunca, Exocarpus sparteus, Grevillea huegellii, Melaleuca uncinata, Olearia muelleri, Phebalium tuberculosum, P. brachycalyx, Scaevola spinescens, Waitzia acuminata. Soil pinkish brown, sandy clay. Poorly drained.

E. transcontinentalis woodland - burnt

E. transcontinentalis trees and mallees, 3 m tall, 2-10% cover over Westringia cephalantha and mixed shrubs 1.0 m tall, 2-10% canopy cover. Other species were Acacia mackayana, Dianella revoluta, Eriostemon deserti, Eucalyptus redunca, Glischrocaryon flavescens, Platysace effusa, Waitzia acuminata.

Acacia shrubland

Originally Acacia sp. 20 trees, 4-8 m tall, 2-10% cover. Post fire regrowth is 1-1.5 m tall, 10-30% cover (locally up to 70%) dominated by Baeckea sp. 9 and Acacia sp. 20. Other plant species recorded were: Acacia neurophylla, Baeckea heteranthera, Casuarina acutivalvis, C. corniculata, Enneapogon caeruleascens, Eucalyptus leptopoda, Gonocarpus affin. confertifolius, Goodenia helmsii, Hakea subsulcata, Velleia discophora, Waitzia acuminata, Wehlia affin. thryptomenoides. Soil yellowish brown, fine sandy clay loam with ca 30% laterite pebbles. Well drained.

Casuarina shrubland - unburnt

Casuarina corniculata and Baeckea sp. 9 shrubs, 2-3 m tall, 30-70% cover with no understory. Also present were: Acacia neurophylla, A. resinomarginea, Calothamnus gilesii, Eriostemon deserti, Eucalyptus leptopoda, Grevillea paradoxa, Hakea coriacea. Soil yellowish brown, fine sandy clay loam with ca 40% laterite pebbles. Well drained.

Casuarina shrubland - burnt

Casuarina acutivalvis, C. corniculata and Baeckea sp. 9 shrubs, 1-1.5 m tall, 30-70% cover. Also present were Acacia signata, A. resinomarginea, Amphipogon debilis, Hakea subsulcata, Waitzia acuminata.

Gravel pit regrowth

Acacia mackayana, A. neurophylla, Calothamnus gilesii, Casuarina acutivalvis, C. corniculata, Cyanostegia angustifolia, Dianella revoluta, Dodonaea bursariifolia, Eriostemon deserti, Eucalyptus leptopoda, Glischrocaryon flavescens, Grevillea paradoxa, Hakea coriacea, Hibbertia affin. glomerosa, Phebalium sp., Prostanthera baxteri, Ptilotus polystachys, Solanum hystrix, Westringia cephalantha were recorded.

Reserve 17771

9A

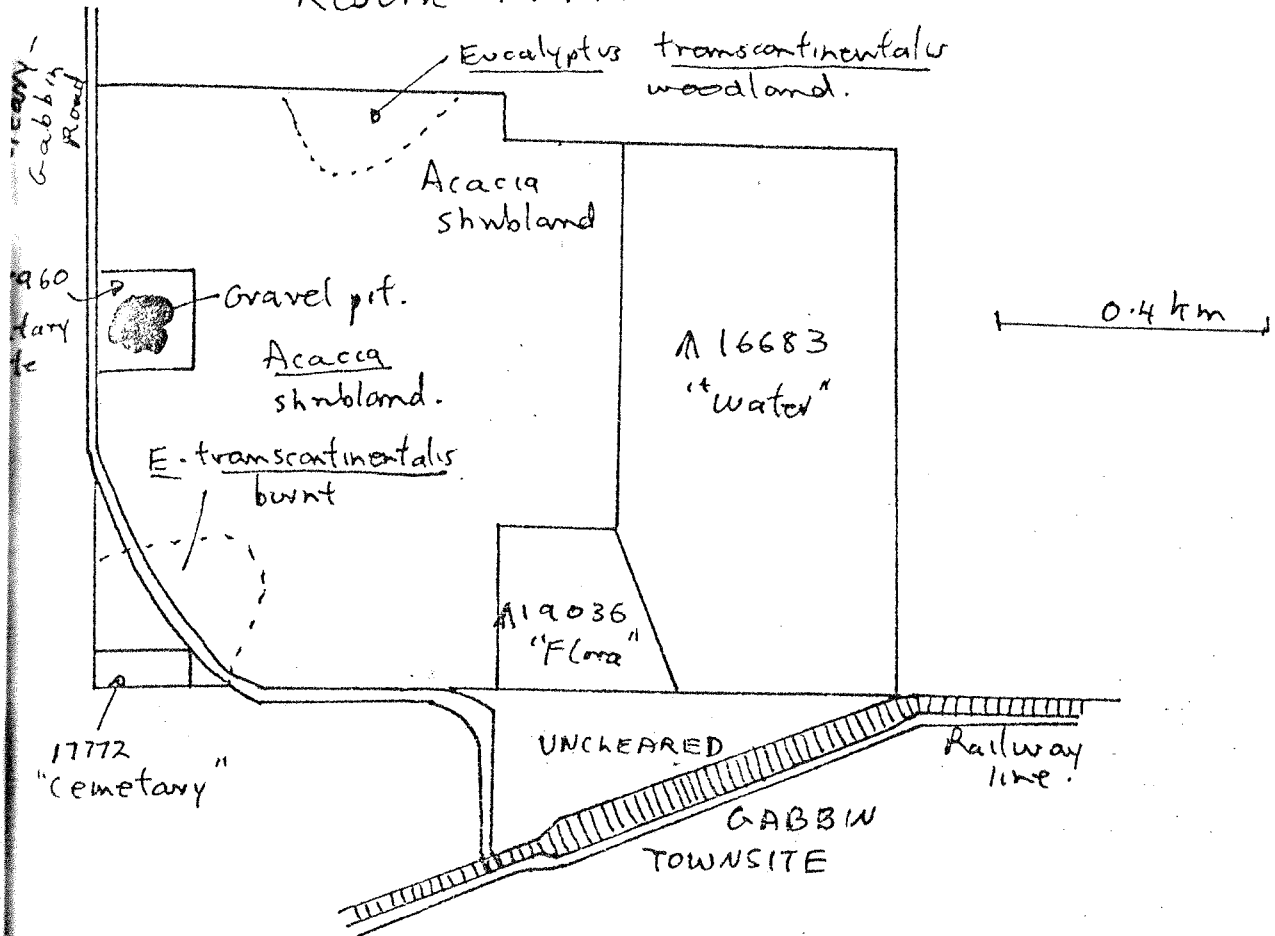




Plate 1. Eucalyptus loxophleba woodland on Reserve 17771. View SW.



Plate 2. View E across fire regrowth heath towards clump of unburnt vegetation.

## Reserve 17923

Located ca 10 km NW Beacon Siding and shown on lithograph 66/80, B1.

### Background

Originally set aside 10 February 1922 as a Reserve for "Water" and an area of ca 16 ha. Increased to its present area on 14 December 1928 and changed to "Conservation of Flora" on 7 January 1966.

### Physical characteristics

Reserve 17923 is rectangular, ca 3.2 km long (N-S axis) by ca 1.4 km wide. It has a total perimeter of ca 8.8 km and an area of 438.4339 ha. No contour maps are available but there is a spot altitude of ca 372 m above sea level on the NE corner of the Reserve. There is a gnamma hole and soak (Clafferty Soak) on the Reserve.

### Vegetation

Seven associations are present on the Reserve:

- (1) Gimlet Open Woodland over mixed Low Scrub B;
- (2) York Gum Very Open Shrub Mallee over mixed Heath A;
- (3) Black Marlock Open Shrub Mallee with no understory;
- (4) Eucalyptus transcontinentalis and Black Marlock Very Open Shrub Mallee over Melaleuca spp. or Acacia desertorum Scrub;
- (5) Acacia sp. Dense Thicket;
- (6) Ecdeiocolea Dense Low Sedges; **and**
- (7) Jam, Tamma and granitic mosaics.

### Plant species

Seventy-three species were recorded of which 19 are exploited by the wildflower seed trade.

### Nest hollows

Abundant in woodland.

### Weeds

Ephemerals and grasses common in wet areas, particularly around granite outcrop.

### Fire history

There is no evidence of fire within the last 30 years.

## Fauna

Euro (Macropus robustus): 4 seen drinking at gnamma hole at dusk.  
Wedgetail Eagle (Aquila audax): 2 flying above Reserve.  
Brown Falcon (Falco berigora): 3 perched near gnamma hole at dusk.  
Crested Pigeon (Ocyphaps lophotes): 2 heard in Acacia thicket, 1 drinking at gnamma hole at dusk.  
Port Lincoln Parrot (Platycercus zonarius): common in woodland.  
Galah (Cacatua roseicapilla): common in woodland.  
Black-faced Cuckoo Shrike (Coracina novaehollandiae): 1 in woodland.  
Crested Bellbird (Oreoica gutturalis): several heard calling throughout Reserve.  
Yellow-tailed Thornbill (Acanthiza chrysorrhoa): common in woodland.  
Zebra Finch (Peophila guttata): 2 drinking at gnamma hole in late afternoon.  
Australian Raven (Corvus coronoides): common, mostly in woodland.

## Exotic Fauna

Rabbit scats and diggings seen, particularly around the granite outcrops. A fence at the S end of the Reserve is in poor condition and may be allowing occasional sheep into the Reserve.

## Firebreaks and fences

Fenced on W and S sides but S side in poor condition. No firebreaks except for roads on N and E sides.

## Human usage

Track to gnamma hole, and a small gravel pit are present. Some timber has been removed from the woodland. A low wall has been built around the E side of the gnamma hole.

## Adjacent uncleared land

There is some uncleared lithic complex and associated vegetation on the SW corner of the Reserve.

## Opinion and recommendations

Reserve 17923 is the largest Nature Reserve in the Mount Marshall Shire, and contains a rich flora and numerous associations. The presence of 2 eagles and 3 falcons over the Reserve suggests to me the area may be quite rich in small vertebrates. Observations made at dusk at the gnamma hole suggest

this is an important watering point for fauna (water still present on 4 December 1978). I recommend that action be taken to improve fencing on the S boundary of the Reserve and install firebreaks. I do not recommend a firebreak be placed across the middle of the Reserve but rather that better peripheral breaks be installed to stop fire entering from outside the boundary. Unless the fire is extremely fierce, much of the vegetation would not burn.

I also recommend that the Reserve be vested in the Western Australian Wildlife Authority and that its classification be raised to "A" class.

APPENDIX 2

Reserve 17923

Gimlet woodland

Eucalyptus salubris trees, 8-18 m tall, 2-10% cover (locally up to 30%) with scattered E. salmonophloia trees to 24 m. Understory shrubs with variable dominance, 1.5 m tall varying from ca 2% to 10-30%. Also recorded were: Acacia acuaria, A. colletioides, A. erinacea, A. mackayana, Alyxia buxifolia, Cassia nemophylla, Eremophila clarkii, Eucalyptus wandoo, Exocarpus aphyllus, Grevillea acuaria, Lepidosperma affin. gracile, Olearia muelleri, Ptilotus exaltatus, P. obovatus. Soil pinkish grey, sandy clay. Poorly drained.

York Gum mallee

Eucalyptus loxophleba shrub and tree mallee 4-12 m tall, 2-10% cover over mixed shrubs 2 m tall, 30-70% cover. Other plant species present were: Acacia acuaria, A. acuminata, A. erinacea, A. sp., Alyxia buxifolia, Bassia diacantha, Cassia nemophylla, Dodonaea inequifolia, Exocarpus sparteus, Olearia muelleri, Pittosporum phylliraeoides, Ptilotus exaltatus, P. obovatus, Rhagodia nutans, Stipa elegantissima. Soil reddish yellow, sandy clay. Poorly drained.

Black Marlock mallee

Eucalyptus redunca shrub and tree mallee, 6-12 m tall, 10-30% canopy cover. No understory present. E. transcontinentalis replaces E. redunca in small areas. Other plants recorded were Acacia acuminata, A. colletioides, A. mackayana, A. sp. 4., Atriplex sp., Callitris glauca, Daviesia nematophylla, Grevillea huegellii, Lomandra effusa, Melaleuca uncinata, Olearia muelleri, Ptilotus obovatus, Westringia cephalantha. Soil reddish yellow, sandy clay. Poorly drained.

Eucalyptus transcontinentalis-Black Marlock Mallee

Eucalyptus transcontinentalis and E. redunca shrub mallee, 4-9 m tall, 2-10% cover over Melaleuca acuminata, M. hamulosa and M. eleutherostachya as variable dominants and areas of Acacia ? desertorum, 2-3.5 m tall, 10-30% cover. Also recorded were: Acacia acuminata, A. densiflora, A. mackayana, Bassia diacantha, Casuarina campestris, Dianella revoluta, Eremophila clarkii, Exocarpus sparteus, Grevillea huegellii, Lomandra glauca collina, Ptilotus obovatus, Rhagodia nutans, R. spinescens, Stipa elegantissima, Waitzia acuminata. Soil reddish yellow, sandy clay. Poorly drained.



Acacia shrubland

Acacia resinomarginea shrubs, 2-3 m tall, 70-100% cover. Scattered Ecdeiocolea monostachya present but no other understory. Also recorded were: Amphipogon debilis, Calytrix brachyphylla, Casuarina acutivalvis, Eriostemon tomentellus, Hakea subsulcata, Melaleuca uncinata, Prostanthera eckersleyana, and Thryptomene australis. Soil yellowish brown, fine sandy loam. Moderately drained.

Ecdeiocolea sedgeland

Ecdeiocolea monostachya sedge, 0.5 m tall, 70-100% cover with scattered emergent Hakea subsulcata to 2-3 m tall. Also present were: Acacia dielsii, Baeckea heteranthera, Borya nitida, Grevillea apiciloba, G. didymobotrya, G. nana, Melaleuca uncinata, Mirbelia spinosa, Persoonia striata, Platysace effusa, Schoenus sp. 3, Spyridium complicatum. This association merges into Acacia shrubland and most species listed are on the ecotone. Soil is yellow brown, sandy clay. Moderately drained but received runoff from higher ground on 3 sides.

Lithic complex

A patchy mosaic of Acacia acuminata shrubland, 1.5-3 m tall, 30-70%, Casuarina campestris 2 m tall, 2-10% and swards of Borya nitida or grasses. Species recorded were Aristida contorta, Astroloma serratifolium, Alyxia buxifolia, Dianella revoluta, Grevillea paniculata, G. yorkrakinensis, Hakea decurva, Lepidosperma tenue, Solanum lasiophyllum, Ptilotus drummondii, P. obovatus. The gnamma hole had a sward of Glossostigma drummondii on wet mud.



Plate 2A. Gimlet woodland on Reserve 17923

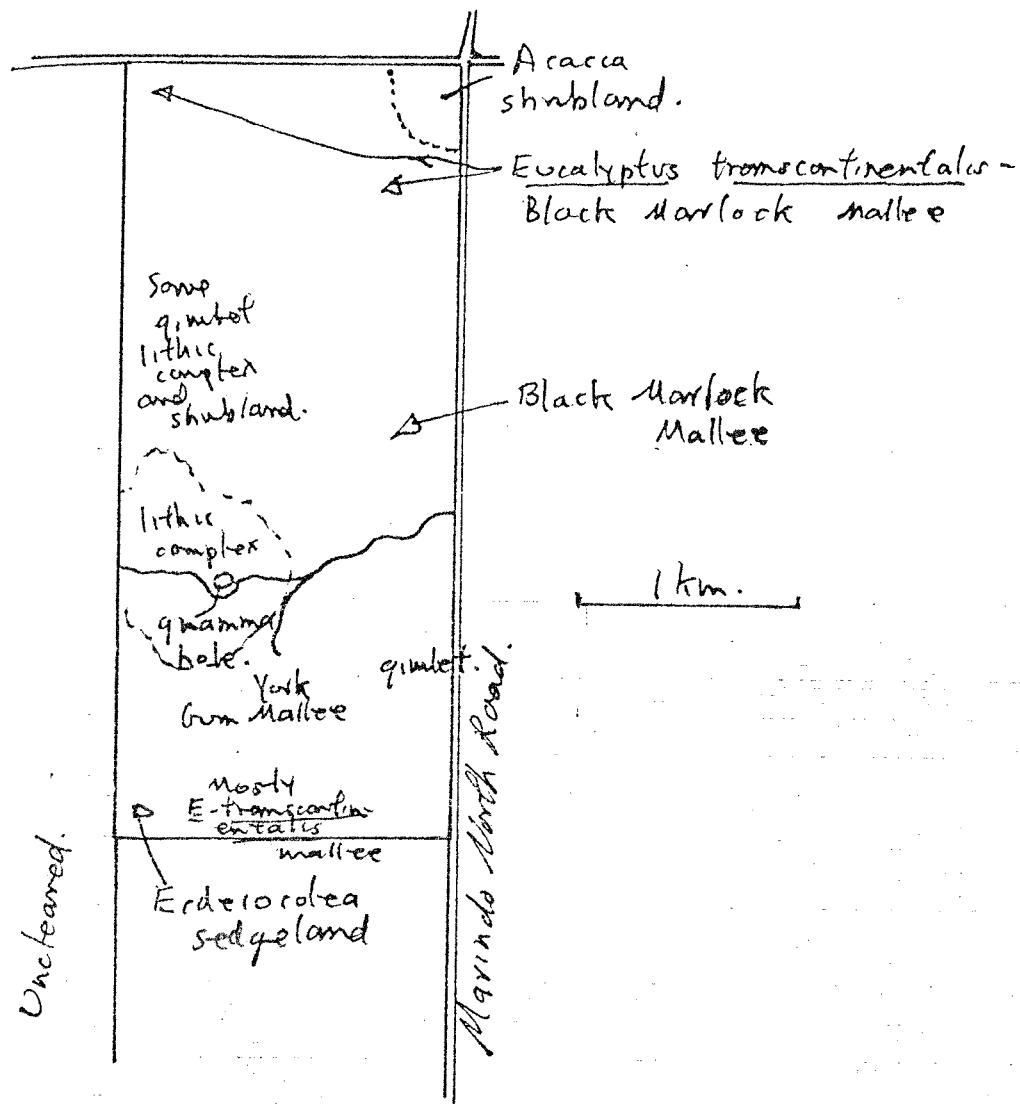


Plate 2B. Black Marlock mallee with sparse understory.



Plate 3. Reserve 17923 showing typical York Gum mallee over patchy mixed understory.



Plate 4. Acacia resinomarginea Dense Thicket on NE corner of Reserve.



Plate 5. Area of sparse mallee over Melaleuca and Acacia understory on Reserve 17923. Note abundant grasses and ephemerals.



Plate 6. View E across gnamma hole showing lithic complex behind. Note low wall behind board.

## Reserve 20986

Located at Marindo Siding, ca 10 km due W of Beacon Siding, and shown on lithograph 66/80, B2.

## Background

Originally set aside on 23 December 1932 for Public Utility. Decreased to ca 79 ha on 10 March 1933 and again to its present size following railway resumption on 6 July 1956. The Reserve's classification was altered to "Conservation of Flora and Fauna" at that time.

## Physical characteristics

Reserve 20986 is rectangular, ca 1.1 km long (N-S axis) by ca 0.8 km wide (E-W axis). It has a total perimeter of ca 3.8 km and an area of 70.6606 ha. No contour maps are available but Marino Siding has a spot altitude of 378 m above sea level. There is probably about a 30 m difference in altitude between the highest and lowest parts of the Reserve.

## Vegetation

Four associations, two with additional fire regrowth areas are present.

- (1) Gimlet and Eucalyptus transcontinentalis Woodland
- (2) E. transcontinentalis-Black Marlock Open Shrub Mallee
- (3) Black Marlock fire regrowth to 3 m tall
- (4) Acacia Dense Thicket
- (5) Casuarina acutivalvis Thicket over mixed Open Dwarf Scrub C
- (6) mixed Dense Heath B fire regrowth

## Plant species

Thirty-seven species of plants were recorded on the Reserve, of which 12 are exploited by the wildflower seed trade.

## Nest hollows

Scattered in woodland.

## Weeds

Scattered ephemerals in wet areas only.

## Fire history

Most of the N end of the Reserve has been burnt within the last 15 years. The remainder is older than 30 years.

## Fauna

Mr S. Bowler of Fisheries and Wildlife made the following list on 28 June 1962:

Grey Kangaroo (Macropus fuliginosus): scats and footprints seen. Glimpse of one in dense shrubland.

Crested Pigeon (Ocyphaps lophotes)

Regent Parrot (Polytelis antiopeplus)

Port Lincoln Parrot (Platycercus zonarius)

Mulga Parrot (Platycercus varius)

Galah (Cacatua roseicapilla)

Pallid Cuckoo (Cuculus pallidus)

Black-faced Cuckoo-shrike (Coracina novaehollandiae)

Red-capped Robin (Petroica goodenovii)

Crested Bellbird (Oreoica gutturalis)

Fantail (Rhipidura fuliginosa)

Willy Wagtail (R. leucophrys)

White-browed Babbler (Pomatostomus superciliosus)

Brown Thornbill (Acanthiza pusilla)

White-eared Honeyeater (Meliphaga leucotis)

Magpie-lark (Grallina cyanoleuca)

Pied Butcherbird (Cracticus nigrogularis)

During my visit in December 1978 Wedgetail Eagle (Aquila audax) and Singing Honeyeater (Meliphaga virescens) were added to the above list.

## Exotic fauna

Scats and diggings of rabbits seen.

## Firebreaks and fences

Marginal firebreaks and fences only adjacent to farmland. The central road is an effective firebreak.

## Human usage

Apart from the railway line and a small amount of rubbish the Reserve is undisturbed.

Adjacent uncleared land

None.

Opinion and recommendations

An excellent Reserve with a good species richness, considering its small size. Immature seral stages on the northern part of the Reserve, together with older vegetation on the S end presently provide 6 different habitat types. I recommend the Reserve be retained in its present state and vested in the Western Australian Wildlife Authority.



APPENDIX 3

Reserve 20986

Gimlet woodland

Eucalyptus salubris and E. transcontinentalis trees, 8-18 m tall, 10-30% cover. Understory of scattered shrubs, mainly: Acacia acuaria, A. colletioides, A. erinacea, A. mackayana, Eremophila clarkii, Grevillea acuaria, Olearia muelleri, Ptilotus obovatus. Soil pinkish grey, sandy clay. Poorly drained.

Mallee- unburnt

Eucalyptus transcontinentalis, E. redunca shrub mallee, 5-6 m tall, 10-30% canopy cover. No understory but scattered shrubs of Acacia mackayana, Daviesia nematophylla, Dodonaea bursariifolia, Grevillea huegelii, Olearia muelleri, Westringia cephalantha. Soil reddish yellow, sandy clay. Poorly drained.

Mallee - burnt

Eucalyptus redunca regrowth to 3 m tall and scattered E. salubris to 5 m tall. Overall canopy cover 2-10%. Understory regrowth 1.5 m tall, 2-10% canopy cover. Other species recorded were: Acacia coolgardiensis, A. dentifera, A. mackayana, Daviesia nematophylla, Dodonaea bursariifolia, Grevillea huegelii, Hakea coriacea, Olearia muelleri, Westringia cephalantha.

Acacia shrubland

Acacia resinomarginea shrubs, 2-3 m tall, 70-100% cover. No understory. Other plant species recorded were: Amphipogon debilis, Casuarina acutivalvis, C. corniculata, Ecdeiocolea monostachya, Hakea subsulcata, Lepidosperma tenue, Platysace effusa, Schoenus sp. Soil yellowish brown, fine sandy clay loam with ca 10% laterite pebbles. Well drained.

Casuarina shrubland

Casuarina acutivalvis shrubs 2-4 m tall, 30-70% canopy cover over mixed shrubs 1.0 m tall, 2-10% cover. Other species recorded were: Acacia resinomarginea, Baeckea heteranthera, Casuarina corniculata, Eucalyptus leptopoda, Grevillea paradoxa, Scholtzia sp.

Fire regrowth heath

Mixed shrubs, no particular dominant, 1.5 m tall, 70-100% cover. Other species present were: Acacia desertorum, A. signata, Baeckea muricata, Casuarina corniculata, Eucalyptus leptopoda, Grevillea paradoxa, Melaleuca scabra, M. uncinata, Verticordia sp. 12



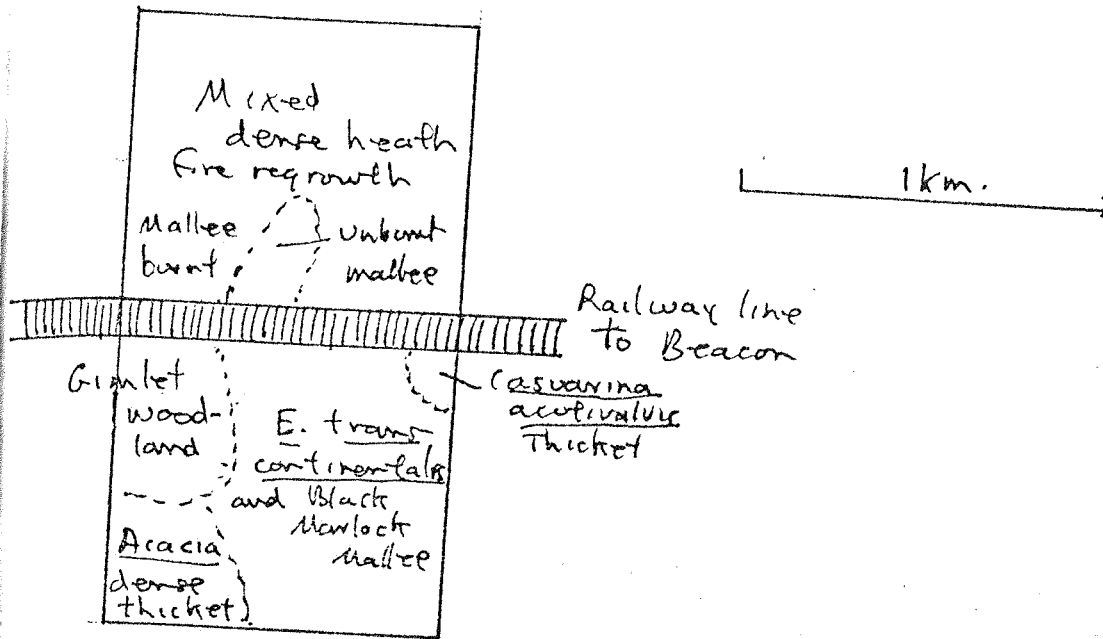




Plate 7. Regrowth of Acacia shrubland on burnt portion of Reserve 20986. The number 20988 shown on the board is in error.



Plate 8. Regrowth woodland on S end of N portion of Reserve 20986. The number 20988 shown on the board is in error.



Plate 9. Acacia resinomarginea shrubland on NW side of Reserve 20986.  
The number 20988 shown on the board is in error.

Reserve 24534

Located ca 4 km SE Beacon Siding and shown on lithograph 66/80, C-D3.

Background

Originally set aside for "Conservation of Flora" on 31 August 1956.

Physical characteristics

Reserve 24534 is triangular, with a total perimeter of ca 8.8 km and an area of 332.7502 ha. No contour maps are available but there is an altitudinal range of ca 80 m on the Reserve. A spot altitude at the NW corner of the Reserve is 373 m above sea level.

Vegetation

Most of the Reserve is a mosaic of Tamma (Casuarina campestris) and Acacia stereophylla Thicket over Ecdeiocolea monostachya Low Sedges together with Eucalyptus ovularis Open Shrub Mallee with variable understory. A creek which crosses the Reserve has denser shrubland than the rest of the Reserve.

Plant species

Twenty-nine species of plants were recorded of which 11 are exploited by the wildflower seed trade.

Nest hollows

None.

Weeds

Some grass along creek and some on edge of disturbed area.

Fire history

Reserve has not been burnt for at least 20-30 years.

Fauna

Euro (Macropus robustus): 2 seen near N end.

Crested Bellbird (Oreoica gutturalis): 1 calling SE end.

Pied Butcherbird (Cracticus nigrogularis): 2 flying across road, N side.

Exotic fauna

None recorded.

Firebreaks and fences

None except adjacent to farmland on S side.

Human usage

An airstrip has been cleared in the Reserve on its W side and is ca 1 km long by ca 80 m wide. About 8 ha or ca 2.4% of the Reserve has been cleared to provide the airstrip. I can find no records on Fisheries and Wildlife or Lands Department files to indicate the airstrip was authorised.

Adjacent uncleared land

A rubbish dump occupies Reserve 21070 at the N end of this Reserve and has about 3 ha of uncleared bushland on it.

Opinion and recommendations

Reserve 24534 is a valuable area of bushland, although containing only two associations. Other uncleared land in this part of the wheatbelt is scarce, so this Reserve provides a haven for wildlife and a valuable future seed source. The apparently unauthorised airstrip deserves to be investigated to determine the circumstances behind its being put on the Reserve rather than in adjacent farmland. I recommend the Reserve be retained in its present condition and vested in the Western Australian Wildlife Authority. If the airstrip is left alone, it will probably regrow into an association very similar to that already present on the Reserve.

APPENDIX 4  
Reserve 24534

Reserve has a mosaic of mallee and shrubland.

Mallee component

Eucalyptus ovularis shrub mallee, 4-7 m tall, 10-30% cover over Acacia ? fragilis 2-3 m tall, 2-10% cover over A. mackayana 1 m tall, 2-10% cover. Other plant species recorded were: Acacia colletioides, A. graffiana, Bassia diacantha, Borya nitida, Daviesia nematophylla, Dianella revoluta, Eremophila clarkii, Exocarpus sparteus, Melaleuca hamulosa, Olearia muelleri, Ptilotus exaltatus. Soil yellowish brown, fine sandy loam. Well drained.

Shrubland component

Casuarina campestris and Acacia stereophylla shrubs, 2-3 m tall, 30-70% cover over Ecdeiocolea monostachya, 0.5 m tall, 30-70% cover. Also recorded were Acacia sp. , Borya nitida, Dianella revoluta, Eucalyptus redunca, Grevillea yorkrakinensis, Lepidosperma gracile, Melaleuca uncinata, Platysace effusa. Soil yellowish brown, sandy loam. Well drained.

Casuarina acutivalvis is common in the ecotone between the mosaics. A creek running into the Reserve on the NE side has Acacia acuminata, Eremophila decipiens, Lomandra effusa, Melaleuca eleutherostachya, M. hamulosa and Ptilotus obovatus.

26A

Reserve 24534.

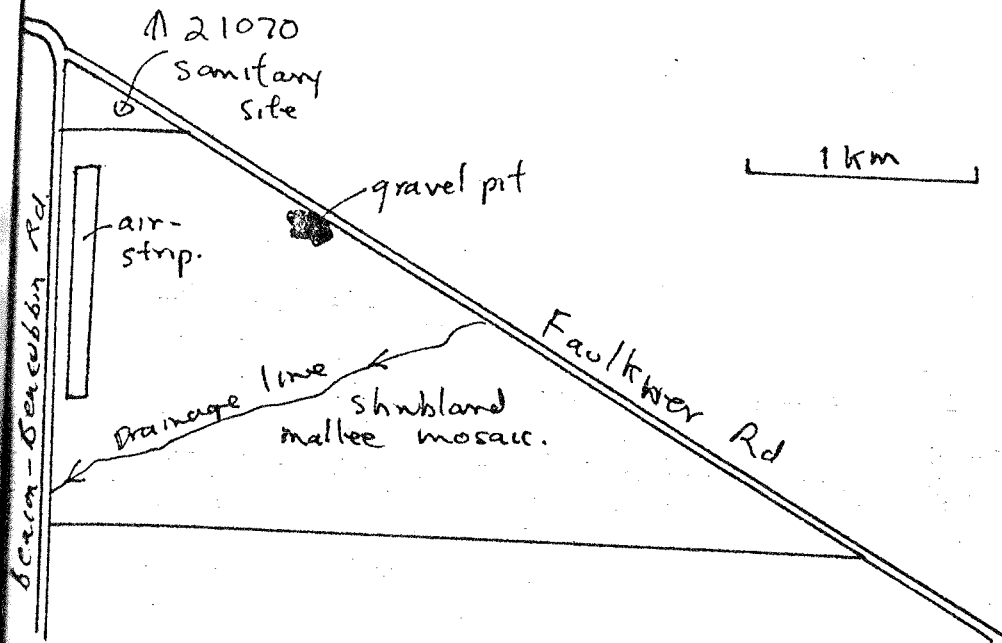




Plate 10. Mallee area on Reserve 24534.



Plate 11. Shrubland typical of much of the Reserve.



## Reserve 24539

Located ca 16 km N of Marind~~o~~Siding and ca 19 km NNW of Beacon Siding.  
Shown on lithograph 66/80, B1.

### Background

Originally set aside 14 September 1956 for "Conservation of Flora".

### Physical characteristics

Reserve 24539 is rectangular, ca 2 km long (E-W axis) by ca 0.8 km wide (N-S axis). It has a total perimeter of ca 5.6 km and an area of 161.9224 ha. No contour maps are available but the Reserve has a topographic variation of ca 5 m and a spot altitude ca 2 km N of the Reserve is 380 m above sea level.

### Vegetation

The majority of the Reserve is Acacia and Casuarina acutivalvis Dense Thicket over Acacia lineolata Open Low Scrub A over Eriostemon Open Dwarf Scrub C. Northern portions of the Reserve have Black Marlock mallees and there is a small area of Salmon Gum woodland in the middle of the S end.

### Plant species

Twenty-five plant species were recorded, of which 9 are exploited by the wildflower seed trade.

### Nest hollows

A few are present in the Salmon Gum woodland.

### Weeds

None recorded.

### Fire history

The Reserve has not been burnt for at least 20 years.

### Fauna

Grey Kangaroo (Macropus fuliginosus): 1 seen.

Southern Scrub Robin (Drymodes brunneopygius): calling in very dense area.

White-browed Babbler (Pomatostomus superciliosus): heard calling.

Weebill (Smicrornis brevirostris): mostly in Eucalyptus redunca areas.  
Chestnut-rumped Thornbill (Acanthiza uropygialis): 3 seen in shrub areas.

Exotic fauna

None recorded.

Firebreaks and fences

Firebreaks in adjacent paddock on N and E sides. Fenced on N, W and S sides.

Human usage

None recorded.

Adjacent uncleared land

Extensive uncleared to N and S of Reserve.

Opinion and recommendations

Although not particularly rich in plant species the Reserve is undoubtedly useful for transient birds and as a refuge for other fauna. It is probably best retained in its present condition. I recommend the Reserve be vested in the Western Australian Wildlife Authority.

APPENDIX 5

Reserve 24539

Shrubland

Variable association dominated by Acacia heteroclita and/or A. sp. 17 and Casuarina acutivalvis shrubs, 2-5 m tall, 70-100% cover over Acacia lineolata shrubs 1-2 m tall, 2-10% cover over Eriostemon thryptomenoides shrubs 1 m tall, 2-10% cover. Other plant species recorded were Acacia desertorum, A. neurophylla, A. stereophylla, Baeckea muricata, Cassytha glabella, Eucalyptus leptopoda, Hakea coriacea, Hibbertia rostellata, Melaleuca cordata, M. uncinata, Thryptomene australis. Soil yellow, sandy clay with ca 5% laterite. Well drained.

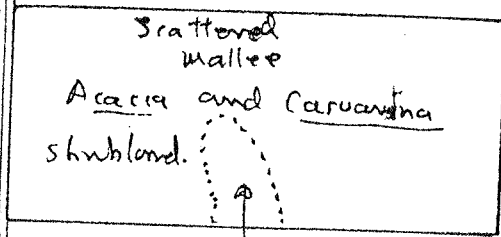
The southern portions of the Reserve have the following species prominent: Acacia neurophylla, A. resinomarginea, Calothamnus gilesii, Casuarina campestris, Dianella revoluta, Grevillea paniculata, Melaleuca uncinata, Micromyrtus imbricata, Platysace effusa.

The northern portion of the association has clumps of Eucalyptus redunca mallee and the southern end a small stand of Eucalyptus salmonophloia woodland.

Navajo North Road.

Reserve 24539

30A



1 km



Plate 12. View W into Acacia thicket on Reserve 24539.

Reserve 26687

Located ca 24 km WSW Bencubbin Townsite and shown on lithograph 55/80, A3-4.

Background

Originally set aside 15 March 1963 for "Conservation of Flora" and with an area of 377.6450 ha. The farmer at the W end of the Reserve cleared ca 74 ha of the Reserve illegally and was later allowed to purchase the cleared portion, reducing the Reserve area to 303.2893 ha (officially dated 11 November 1977).

Physical characteristics

Reserve 26687 is irregular rectangular, ca 2.4 km long (E-W axis) by ca 1.2 km broad (N-S axis), with a total perimeter of ca 7.7 km. The Reserve has an area of 303.2893 ha, and an altitudinal variation of 1-2 m in the salt complex areas and ca 5 m in the dunes surrounding the lake. No contour maps or spot altitudes are available, but the salt lake complex is presumably fairly level and Dukin Siding, which is near the salt complex ca 18 km W of the Reserve, is ca 604 m above sea level.

Vegetation

The majority of the W end of the Reserve is a complex mosaic of salt flats with thickets of Melaleuca spp. Dunes surrounding the salt lake are a patchy mosaic of shrubs and Eucalyptus transcontinentalis. SE corner is Salmon Gum/Yorrell Woodland.

Plant species

Thirty-six species were recorded, of which 7 are exploited by the wildflower seed trade.

Nest hollows

Some in woodland areas. Numerous young trees present.

Weeds

Virtually absent.

Fire

None of the vegetation has been burnt for at least 30 years, and the salt complex is unlikely to have ever supported fire.

## Fauna

The only fauna recorded were as follows, although there is little doubt that many more species are present.

Port Lincoln Parrot (Platycercus zonarius): several in woodland.

Yellow-rumped Thornbill (Acanthiza chrysorrhoa): several in woodland and on lake dunes.

Australian Raven (Corvus coronoides): calling in woodland.

## Exotic fauna

Sheep tracks and scats are present in many parts of the Reserve.

## Firebreaks and fences

Present only on the NW and E margins.

## Human usage

Timber has been removed from the woodland. A small amount of rubbish has been dumped on the S boundary of the Reserve and the lake margins (particularly the SE corner) have been used for recreation.

## Adjacent uncleared land

Several thousand ha of salt complex is present to the S and N of the Reserve.

## Remarks

The loss of the area of woodland on the W end of the Reserve by illegal clearing has considerably diminished the value of the Reserve. As far as I can determine from the records the farmers' (W.T. and R.T. Cooper) gain in illegally clearing the land far outweighed any retribution they received. While such situations are allowed to persist with little or no penalty, many of the reserves are in danger from unscrupulous farmers.

## Opinion and recommendations

The western portions of the Reserve are particularly valuable for soil conservation, any development of them encouraging salt encroachment on nearby paddocks. For fauna conservation the most valuable portion of the Reserve is undoubtedly the woodland on the E boundary. I feel that the future will see more extensive use of the lake for recreation and management of the Eastern lake boundary will be necessary. I recommend that Reserve 26687 be retained in its present form and vested in the Western Australian Wildlife Authority.

I also recommend the Reserve be kept under constant review with the intention of managing the SE corner of the lake to provide facilities for recreation, if they are needed, while localising their effects on the surrounding bushland.



APPENDIX 6

Reserve 26687

Salmon Gum-Yorrel woodland

Eucalyptus salmonophloia and E. gracilis trees, 14-20 m tall, 10-30% cover over Melaleuca uncinata, 2-4 m tall, 2-10% cover over Lomandra effusa clumps 30 cm tall ca 2% cover. Also recorded were: Acacia colletioides, A. mackayana, Alyxia buxifolia, Exocarpus sparteus, Olearia pimelioides, Phebalium brachycalyx, Templetonia sulcata, Waitzia acuminata, Westringia cephalantha. Soil pinkish grey, sandy clay loam. Poorly drained.

Salmon Gum woodland

Eucalyptus salmonophloia trees, 14-20 m tall, 10-30% cover over Phebalium brachycalyx and Bertya cunninghami shrubs, 1 m tall, 2-10% cover. Acacia colletioides, Daviesia nematophylla, Waitzia acuminata. Soil pale red, sandy clay. Poorly drained.

Lake margins

Scattered or mosaiced assemblages of several species of plants with no particular dominants. Species recorded were: Acacia eremaea, Astroloma sp., Bertya cunninghami, Callitris preissii, Casuarina acutivalvis, Darwinia diosmoides, Eucalyptus transcontinentalis, Grevillea huegelii, Hakea preissii, H. sp. 3, Lepidosperma gracile, Lygenia tenax, Melaleuca cymbifolia, M. uncinata, Persoonia coriacea, Phebalium filifolium, P. tuberculosum var. megaphyllum. Soil pinkish grey, loamy sand with high gypsum content. Very little salt influence. Moderately drained.

Salt complex mosaics, SW side

Complex mosaic of Arthrocnemum halocnemoides and A. lepidosperma in lower areas, with A. bidens on margins. Slight ridges have thickets of Melaleuca hamulosa or M. uncinata. Some marginal areas have M. thyoides thickets or small stands of Casuarina obesa.

Reserve 26687

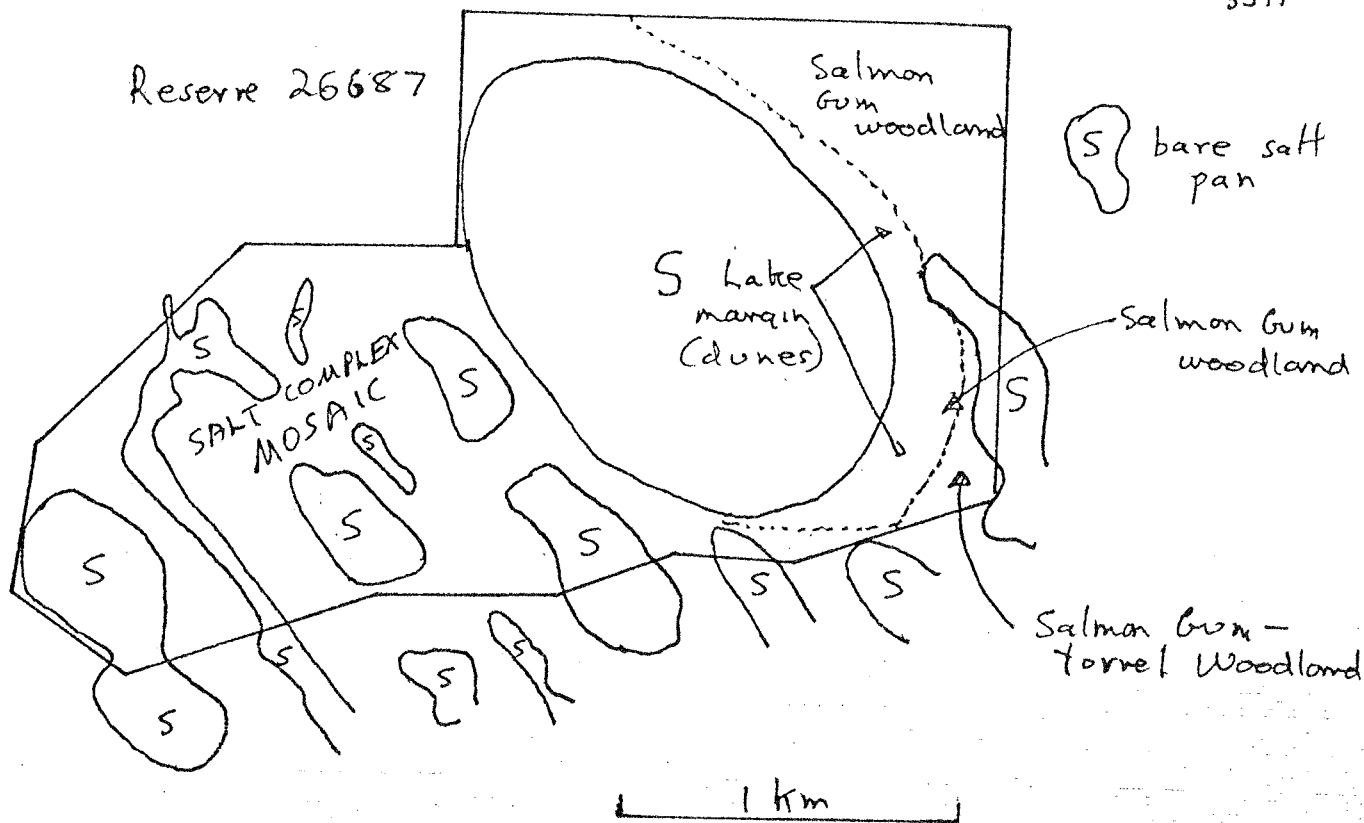




Plate 13. Reserve 26687 showing bare salt lake with marginal shrubs and trees on dunes.



Plate 14. Salmon Gum/Yorrell woodland on SE corner of Reserve.

Reserve 27913

Located ca 1 km SW of Wialki Townsite and shown on lithograph 66/80, E3.

Background

Originally set aside for "Conservation of Flora" on 18 February 1966.

Physical characteristics

Reserve 27913 is ca 1.1 km long (E-W axis) by ca 0.3 km broad (N-S axis) with an area of 33.6471 ha. No contour maps are available but a spot altitude of ca 410 m above sea level is available for Wialki Siding.

Vegetation

Gimlet with scattered Wandoo and Salmon Gum Woodland covers the majority of the Reserve.

Plant species

Sixteen plant species were recorded, including 9 exploited by the wildflower seed trade.

Nest hollows

Very abundant. Some young trees present.

Weeds

Scattered small ephemerals in woodland.

Fire history

Area not burnt for at least 30 years.

Fauna

Port Lincoln Parrot (Platycercus zonarius): heard calling.

Galah (Cacatua roseicapilla): 10-15 in woodland.

Weebill (Smicrornis brevirostris): in woodland.

Yellow-rumped Thornbill (Acanthiza chrysorrhoa): in canopies of woodland.

Australian Raven (Corvus coronoides): several heard.

Exotic fauna

None recorded.

Firebreaks and fences

None except adjacent to farmland.

Human usage

Small amount of rubbish dumped on W boundary.

Adjacent uncleared land

Water Reserve 21180 is contiguous with the N side of the Reserve and is ca 82 ha in area. The Water Reserve has the same association as the Flora Reserve.

Opinion and recommendations

The woodland on this Reserve is valuable for transient birds and woodland dwelling fauna, but is particularly important as a nest area. There would be considerable advantage to joining the Water Reserve and Reserve 27913 into a single Reserve for conservation of flora and fauna. In any event the Reserve should be retained in its present form and vested in the Western Australian Wildlife Authority.

664

APPENDIX 7  
Reserve 27913

Gimlet woodland

Eucalyptus salubris and scattered E. salmonophloia and E. wandoo to 24 m tall, 10-30% cover with no understory. Other plant species recorded were: Acacia acuminata, A. colletioides, A. erinacea, Bassia diacantha, Dianella revoluta, Enchylaena tomentosa, Exocarpus aphyllus, Olearia muelleri, Ptilotus exaltatus, P. obovatus, Santalum acuminatum, Stipa elegantissima, Waitzia acuminata.

39A

Reserve 27913

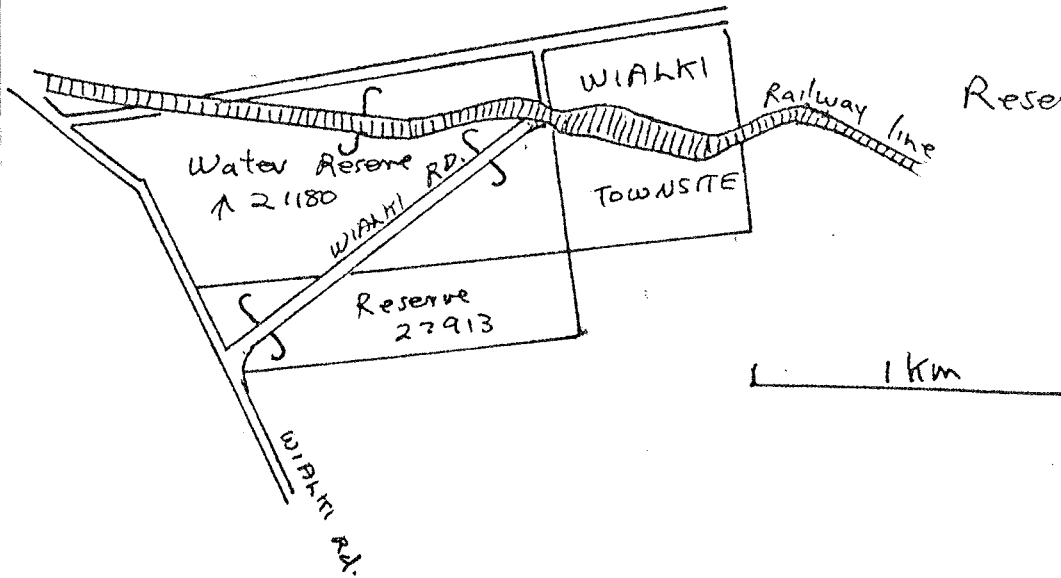




Plate 15. Reserve 27913 showing woodland with open areas and patchy understory.