



DEPARTMENT OF FISHERIES AND WILDLIFE  
108 Adelaide Terrace, Perth  
Western Australia.



# Western Australian Wildlife Authority

Published by the Director of Fisheries and Wildlife, Perth, under the authority of  
the Hon. Minister for Fisheries and Wildlife

# 1979 ANNUAL REPORT



NUMBAT OR BANDED ANTEATER  
(*Myrmecobius fasciatus*)

DEPARTMENT OF FISHERIES AND WILDLIFE

108 Adelaide Terrace,  
Perth, W.A.

The Honourable R.J. O'Connor  
Minister for Fisheries and Wildlife

Sir,

In accordance with the requirements of Sub-section (5) of Section 7 of the Wildlife Conservation Act, I have pleasure in submitting to you my report on the proceedings and work of the Western Australian Wildlife Authority for the period ending June 30, 1979, together with comments relating to the administration of this Act.



(B.K. Bowen)  
CHAIRMAN

Western Australian Wildlife Authority

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DEPARTMENT OF FISHERIES AND WILDLIFE  
WESTERN AUSTRALIAN WILDLIFE AUTHORITY

1 WESTERN AUSTRALIAN WILDLIFE AUTHORITY AND COMMITTEES

1. MEMBERSHIP

Names and Organisations

*Ex officio* Members -

Chairman - B.K. Bowen, Director, Department of Fisheries and Wildlife

Mr A.J. Mearns - Conservator of Wildlife, Department of Fisheries and Wildlife (Vice H.B. Shugg)

Mr B.J. Beggs - Conservator of Forests  
Deputy - Mr P.J. McNamara, Deputy Conservator (Vice Mr W.H. Eastman)

Mr A.R. Tomlinson - Chief Agriculture Protection Officer, Agriculture Protection Board

Appointed Members -

Mr R. Aitken - Retired School Teacher

Mr N.A. Beeck - Farmer

Dr S.J.J. Davies - Zoologist - Officer in Charge - CSIRO, Division of Wildlife Research

Dr J.W. Green - Botanist - Curator, Western Australian Herbarium

Mr H.G. Hall - Farmer

Dr D. Kitchener - Curator of Mammals, Western Australian Museum (Vice Dr B.R. Wilson, resigned)

Professor A.R. Main - Zoologist, University of Western Australia

Executive Officer

Mr D.W. Arnold - Acting Administrative Officer, Department of Fisheries and Wildlife

Names of Committees

Reserves Committee  
Bird Committee  
Flora Committee

## Membership

### Reserves Committee -

Chairman - Mr B.K. Bowen - Director, Department of Fisheries and Wildlife  
Mr A.J. Mearns - Deputy Chairman, Conservator of Wildlife, Department of Fisheries and Wildlife (Vice H.B. Shugg)  
Mr R.J. Powell, Executive Officer, Department of Fisheries and Wildlife  
Mr N.A. Beeck - Authority Member  
Dr A.A. Burbidge - Senior Research Officer, Western Australian Wildlife Research Centre  
Dr E. Hopkins - Forests Department  
Deputy - Mr F. Batini  
Dr D. Kitchener - Curator of Mammals, Western Australian Museum  
Mr N.L. McKenzie - Research Officer, Western Australian Wildlife Research Centre

### Bird Committee -

Chairman - Mr D.W. Arnold - Acting Administrative Officer, Department of Fisheries and Wildlife (Vice H.B. Shugg)  
Mr D.L. Jennings - Executive Officer, Department of Fisheries and Wildlife  
Mr N.A. Beeck - Authority Member  
Mr B.A. Carmichael - Chief Wildlife Officer, Department of Fisheries and Wildlife  
Dr S.J.J. Davies - Officer in Charge, CSIRO, Division of Wildlife Research, Helena Valley  
Deputy - Mr I. Rowley  
Mr H.G. Hall - Authority Member  
Mr J.A.K. Lane - Research Officer, Western Australian Wildlife Research Centre  
Mr J.R. Masters - Farmer (Ornithologist)  
Dr D.L. Serventy - Zoologist  
Mr T. Spence - Director, South Perth Zoological Gardens  
Dr G.M. Storr - Curator of Birds and Reptiles, Western Australian Museum  
Mr A.R. Tomlinson - Chief Agriculture Protection Officer, Agriculture Protection Board  
Deputies - Mr A.J. Oliver  
Mr J. Long

### Flora Committee -

Chairman - Mr B.K. Bowen - Director, Department of Fisheries and Wildlife  
Mr A.J. Mearns - Conservator of Wildlife, Department of Fisheries and Wildlife (Vice H.B. Shugg)  
Mr D.W. Arnold - Executive Officer, Department of Fisheries and Wildlife

Mr R. Aitken - Retired School Teacher  
Mr B.J. Beggs - Conservator of Forests  
Mrs M. Blackwell - Botanist  
Dr J. Green - Botanist - Curator, Western Australian  
Herbarium  
Mr P. Hewitt - Forests Department  
Deputy - Mr F. Batini  
Mr A.J. Hopkins - Research Officer, Western Australian  
Wildlife Research Centre  
Dr N. Marchant - Botanist - Western Australian Herbarium  
Professor J.S. Pate - Officer in Charge, Department of  
Botany, University of Western Australia  
Mr R. Shaw - Main Roads Department  
Dr P.R. Wycherley - Director, Kings Park Board

#### Secretariat

Mr A.J. Goadby and Mr G.E. Allen carried out the secretarial functions for the Authority and its various committees.

## 2. MEETINGS -

#### The Western Australian Wildlife Authority

The Authority met on four occasions during 1978/79.

#### Committees

Reserves Committee - met on two occasions during 1978/79

Bird Committee - met on seven occasions during 1978/79

Flora Committee - did not meet during 1978/79

## II THE FAUNA

### 1. NUMBER OF INDIGENOUS SPECIES OF:

|               |       |
|---------------|-------|
| Birds         | 475   |
| Marsupials    | 63    |
| Other Mammals | 63    |
| Reptiles      | 349   |
| Amphibia      | 62    |
|               | 1 012 |

### 2. LIST OF UNPROTECTED INDIGENOUS SPECIES AS AT 30.6.79

#### Mammals

Wild Dog (Dingo) *Canis familiaris dingo*

#### Reptiles

|                                            |                                |
|--------------------------------------------|--------------------------------|
| Common Death Adder                         | <i>Acanthophis antarcticus</i> |
| Desert Death Adder                         | <i>Acanthophis pyrrhus</i>     |
| Black Whip-snake                           | <i>Demansia atra</i>           |
| Spotted-headed Snake                       | <i>Demansia olivacea</i>       |
| Papuan Whip-snake                          | <i>Demansia papuana</i>        |
| Green Whip-snake                           | <i>Demansia reticulata</i>     |
| Rosen's Snake                              | <i>Denisonia fasciata</i>      |
| Little Spotted Snake                       | <i>Denisonia punctata</i>      |
| Gould's Snake                              | <i>Denisonia gouldii</i>       |
| Northern White-lipped Snake                | <i>Denisonia suta</i>          |
| Monk (or Hooded) Snake                     | <i>Denisonia monachus</i>      |
| Crowned Snake or Werr.                     | <i>Drysdalia coronata</i>      |
| Bardick                                    | <i>Echiopsis curta</i>         |
| Tiger Snake                                | <i>Notechis ater</i>           |
| Mulga (or King Brown) Snake                | <i>Pseudechis australis</i>    |
| Dugite                                     | <i>Pseudonaja affinis</i>      |
| Gwardar                                    | <i>Pseudonaja nuchalis</i>     |
| Five-ringed Snake                          | <i>Pseudonaja modesta</i>      |
| All Sea Snakes of the Family Hydrophiidae. |                                |

### 3. LIST OF SPECIES RARE OR OTHERWISE IN NEED OF SPECIAL PROTECTION AS AT 30.6.79

#### Birds

|                        |                                  | <u>Government<br/>Gazette</u> |
|------------------------|----------------------------------|-------------------------------|
| Red-tailed Tropic-bird | <i>Phaethon rubricauda</i>       | 3.2.78                        |
| White (Mute) Swan      | <i>Cygnus olor</i>               | "                             |
| Freckled Duck          | <i>Stictonetta naevosa</i>       | "                             |
| Cape Barren Goose      | <i>Cereopsis novaehollandiae</i> | "                             |
| Burdekin Duck          | <i>Tadorna radjah</i>            | "                             |
| Crested Hawk           | <i>Aviceda subcristata</i>       | "                             |



Birds (Cont'd)

|                                     |                                         |        |
|-------------------------------------|-----------------------------------------|--------|
| Red Goshawk                         | <i>Accipiter radiatus</i>               | 3.2.78 |
| Peregrine Falcon                    | <i>Falco peregrinus</i>                 | "      |
| Grey Falcon                         | <i>Falco hypoleucos</i>                 | "      |
| Scrub Fowl                          | <i>Megapodius freycinet</i>             | "      |
| Lesser Noddy                        | <i>Anous tenuirostris</i>               | "      |
| Red-crowned Pigeon                  | <i>Ptilinopus regina</i>                | "      |
| Green-winged Pigeon                 | <i>Chalcophaps indica</i>               | "      |
| Partridge Pigeon                    | <i>Geophaps smithii</i>                 | "      |
| Mangrove Kingfisher                 | <i>Halcyon chloris</i>                  | "      |
| Alexandra (Princess)<br>Parrot      | <i>Polytelis alexandrae</i>             | "      |
| Naretha Bluebonnet                  | <i>Psephotus haematogaster narethae</i> | "      |
| Ground Parrot                       | <i>Pezoporus wallicus</i>               | "      |
| Night Parrot                        | <i>Geopsittacus occidentalis</i>        | "      |
| Grass Owl                           | <i>Tyto longimembris</i>                | "      |
| Rufous Owl                          | <i>Ninox rufa</i>                       | "      |
| Noisy Scrub-bird                    | <i>Atrichornis clamosus</i>             | "      |
| Cicadabird                          | <i>Coracina tenuirostris</i>            | "      |
| Western Whip-bird                   | <i>Psophodes nigrogularis</i>           | "      |
| Purple-crowned Wren                 | <i>Malurus coronatus</i>                | "      |
| Thick-billed Grass-<br>Wren         | <i>Amytornis textilis</i>               | "      |
| Rufous Bristle-bird                 | <i>Dasyornis broadbenti</i>             | "      |
| Brown Bristle-bird                  | <i>Dasyornis brachypterus</i>           | "      |
| Lemon-breasted<br>Flycatcher        | <i>Microeca flavigaster</i>             | "      |
| White-browed (Buff-<br>sided) Robin | <i>Poecilodryas superciliosa</i>        | "      |
| Rufous Fantail                      | <i>Rhipidura rufifrons</i>              | "      |
| Shrike-Tit                          | <i>Falcunculus frontatus</i>            | "      |
| Red-eared Firetail                  | <i>Emblema oculata</i>                  | "      |
| Yellow-rumped<br>Finch              | <i>Lonchura flaviprymna</i>             | "      |
| Major Mitchell                      | <i>Cacatua leadbeateri</i>              | "      |

Mammals

|                                 |                                      |   |
|---------------------------------|--------------------------------------|---|
| Barrow Island Euro              | <i>Macropus robustus isabellinus</i> | " |
| Crescent Nail-tailed<br>Wallaby | <i>Onychogalea lunata</i>            | " |
| Spectacled Hare-<br>Wallaby     | <i>Lagorchestes conspicillatus</i>   | " |
| Western Hare-Wallaby            | <i>Lagorchestes hirsutus</i>         | " |
| Banded Hare-Wallaby             | <i>Lagostrophus fasciatus</i>        | " |
| Brush-tailed Rock<br>Wallaby    | <i>Petrogale penicillata</i>         | " |
| Woolie                          | <i>Bettongia penicillata</i>         | " |
| Boodie                          | <i>Bettongia lesueur</i>             | " |
| Broad-faced Potoroo             | <i>Potorous playtops</i>             | " |
| Gilbert's Potoroo               | <i>Potorous tridactylus gilberti</i> | " |
| Rock-haunting<br>Ringtail       | <i>Petropseudes dahli</i>            | " |
| Marl                            | <i>Perameles bougainville</i>        | " |
| Pig-footed Bandicoot            | <i>Chaeropus ecaudatus</i>           | " |
| Dalgyte                         | <i>Macrotis lagotis</i>              | " |
| Rusty Numbat                    | <i>Myrmecobius fasciatus rufus</i>   | " |

Mammals (Cont'd)

|                                 |                                 |        |
|---------------------------------|---------------------------------|--------|
| Dibbler                         | <i>Antechinus apicalis</i>      | 3.2.78 |
| Long-tailed Dunnart             | <i>Sminthopsis longicaudata</i> | "      |
| Ingram's Planigale              | <i>Planigale ingrami</i>        | "      |
| Pygmy Marsupial-Mouse           | <i>Planigale maculata</i>       | "      |
| Big-eared Hopping-Mouse         | <i>Notomys megalotis</i>        | "      |
| Long-tailed Hopping<br>Mouse    | <i>Notomys longicaudatus</i>    | "      |
| Dusky Hopping Mouse             | <i>Notomys fuscus</i>           | "      |
| Stick-Nest Rat                  | <i>Leporillus conditor</i>      | "      |
| White-tipped Stick-<br>Nest Rat | <i>Leporillus apicalis</i>      | "      |
| Shark Bay Mouse                 | <i>Pseudomys praeconis</i>      | "      |
| Gould's Native Mouse            | <i>Pseudomys gouldii</i>        | "      |
| Shortridge's Native<br>Mouse    | <i>Pseudomys shortridgei</i>    | "      |
| Dugong                          | <i>Dugong dugon</i>             | "      |

Reptiles

|                                           |                             |   |
|-------------------------------------------|-----------------------------|---|
| Salt-water Crocodile                      | <i>Crocodylus porosus</i>   | " |
| Fresh-water Crocodile                     | <i>Crocodylus johnstoni</i> | " |
| Western Swamp (Short-<br>necked) Tortoise | <i>Pseudemydura umbrina</i> | " |
| Leathery Turtle                           | <i>Dermochelys coriacea</i> | " |
| Lancelin Island Skink                     | <i>Ctenotus lanceolini</i>  | " |
| Lined Skink                               | <i>Lerista lineata</i>      | " |
| Carpet Snake                              | <i>Python spilotus</i>      | " |

Amphibians

|            |                            |   |
|------------|----------------------------|---|
| Round Frog | <i>Arenophryne rotunda</i> | " |
|------------|----------------------------|---|

|                                                                                                                                                       |                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 4. OPEN SEASONS                                                                                                                                       | <u>Gazetted</u>   |
| Open Seasons declared in 1978/79.                                                                                                                     |                   |
| Finch Trapping Season - September 8 to November<br>15, 1977.                                                                                          | 8.9.78            |
| Management of Agile Wallabies ( <i>Macropus agilis</i> ).                                                                                             | 13.8.76           |
| Waterfowl Hunting Season - Kimberley, North-west and<br>Eastern Land Divisions. January 1 to December 31,<br>1978.                                    | 8.12.78           |
| Existing Open Seasons -                                                                                                                               |                   |
| Management of populations of Red Kangaroo ( <i>Megaleia<br/>rufa</i> ) and Euro ( <i>Macropus robustus</i> )                                          | 17.4.70<br>1.5.70 |
| Hunting Season - Brown Quail ( <i>Synoicus ypsilophorus</i> )<br>and Stubble Quail ( <i>Coturnix pectoralis</i> ).<br>January 1 to June 30 each year. | 25.6.71           |

#### 4. OPEN SEASONS (cont.)

|                                                                                                                                                                                                                         |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Management of populations of Grey Kangaroo<br>( <i>Macropus fuliginosus</i> ).                                                                                                                                          | 23.7.71<br>30.6.72 |
| Management of populations of Emus ( <i>Dromaius novae-hollandiae</i> ).                                                                                                                                                 | 26.1.73            |
| Management of Little Corellas ( <i>Cacatua sanguinea</i> ) -<br>in Kimberley Land Division -<br>in Shire of Coorow -                                                                                                    | 16.6.78            |
| Management of Sulphur-crested Cockatoos (Eastern sub-species) ( <i>Cacatua galerita queenslandica</i> ; <i>Cacatua galerita rosinae</i> ; <i>Cacatua galerita melvillensis</i> ; <i>Cacatura galerita interjecta</i> ). | 16.6.78            |
| Management of Black Cormorant ( <i>Phalacrocorax carbo</i> )<br>Pied Cormorant ( <i>Phalacrocorax varius</i> )                                                                                                          | 16.6.78            |

#### Place and Time May be Taken:-

The waters of Peel Inlet and Harvey Estuary when open to netting under the Fisheries Act, 1905.

The following restrictions on the taking and disposal apply:-

- (1) The fauna may be taken only by a person who is the holder of a current professional fisherman's license issued pursuant to the provisions of the Fisheries Act, 1905.
- (2) The fauna may be so taken only when they are taking fish lawfully caught or being lawfully netted.
- (3) The fauna may be taken only by means of a shotgun licensed pursuant to the Firearms Act, 1973, and by shot of a size not larger than No. 4.
- (4) The fauna taken shall be retrieved and buried in a suitable place as soon after the taking as is reasonable having regard to fishing operations.

### III THE FLORA

The protection of flora has remained the responsibility of the Conservator of Forests throughout the past year.

Following the passing of the Wildlife Conservation Act Amendment Act (1976) further legislative amendments relating to flora conservation have been drafted. These amendments to the Wildlife Conservation Act have been placed before Parliament and it is expected that action to proclaim them will be taken in the near future.

## IV NATURE RESERVES

### 1. INTRODUCTION

The Wildlife Conservation Act defines a nature reserve as "an area of land which is vested in the Crown and which the Governor, subject to such conditions and limitations as he thinks fit, reserves to Her Majesty or disposes of in the public interest pursuant to the provisions of paragraph (g) of sub-section (1) of section twenty-nine of the Land Act, 1933, for the conservation of indigenous flora or fauna".

Prior to the Act being amended in 1975, nature reserves were known as wildlife sanctuaries and included only reserves set aside for the conservation of fauna.

### 2. TABLE OF RESERVES

Note: Correction has been made to 1978 data, after checks revealed reserve numbers and areas to be incorrect.

| Year<br>30 June | Total<br>Number | Area<br>(ha) | Vested in the<br>W.A. Wildlife Authority |           |
|-----------------|-----------------|--------------|------------------------------------------|-----------|
|                 |                 |              | No.                                      | Area (ha) |
| 1969            | 278             | 2 342 966    | 127                                      | 818 442   |
| 1970            | 315             | 2 100 318    | 156                                      | 867 362   |
| 1971            | 359             | 4 955 893    | 213                                      | 4 415 595 |
| 1972            | 404             | 5 077 224    | 242                                      | 4 533 944 |
| 1973            | 440             | 5 013 287    | 265                                      | 4 607 266 |
| 1974            | 454             | 5 033 935    | 281                                      | 4 626 617 |
| 1975            | 491             | 5 103 037    | 320                                      | 4 713 482 |
| 1976            | 918             | 5 339 947    | 351                                      | 4 747 403 |
| 1977            | 946             | 7 520 839    | 385                                      | 6 927 627 |
| 1978            | 995             | 8 398 648    | 412                                      | 8 086 314 |
| 1979            | 1016            | 8 536 654    | 493                                      | 8 205 197 |

3. SUMMARY OF NATURE RESERVES - JUNE 30, 1979.

|                               |               |                     |
|-------------------------------|---------------|---------------------|
| As at June 30, 1978           | 995 reserves  | 8 398 648.2110 ha   |
| New Reserves 1978/79          | 39 reserves   | +140 892.1918 ha    |
| Amendments 1978/79            | 30 reserves   | + 12 281.7675 ha    |
| Cancelled Reserves<br>1978/79 | 18 reserves   | - 2 865.2738 ha     |
| TOTAL                         | 1016 reserves | = 8 536 654.2090 ha |

4. NATURE RESERVES VESTED IN WESTERN AUSTRALIAN WILDLIFE  
AUTHORITY - JUNE 30, 1979.

|                                     |              |                     |
|-------------------------------------|--------------|---------------------|
| As at June 30, 1978                 | 412 reserves | 8 086 314.0000 ha   |
| New reserves 1978/79                | 25 reserves  | +93 724.2080 ha     |
| Amendments 1978/79                  | 17 reserves  | +9 669.5292 ha      |
| Existing reserves<br>vested 1978/79 | 57 reserves  | +16 307.1462 ha     |
| Cancelled vestings                  | 1 reserve    | -817.4650 ha        |
| TOTAL                               | 493 reserves | = 8 205 197.4184 ha |

5. NEW RESERVES 1978/79

| NO.     | NAME    | AREA (ha)  | VESTING        | GAZETTED |
|---------|---------|------------|----------------|----------|
| 35413   |         | 592.1195   | W.A.W.A.       | 14.7.78  |
| 9308    |         | 40.4686    | W.A.W.A.       | 28.7.78  |
| 24677   |         | 74.6190    | W.A.W.A.       | 28.7.78  |
| 18583   |         | 1 155.9871 | W.A.W.A.       | 11.8.78  |
| 35453   |         | 621.4181   |                | 11.8.78  |
| 23934   |         | 212.4600   | W.A.W.A.       | 25.8.78  |
| A.31188 |         | 46.0109    | W.A.W.A.       | 25.8.78  |
| 26809   |         | 107.8487   | W.A.W.A.       | 22.9.78  |
| A.35557 |         | 486.2774   | W.A.W.A.       | 6.10.78  |
| 35594   |         | 54.9527    |                | 6.10.78  |
| 35659   |         | 1 048.8930 |                | 20.10.78 |
| A.19717 |         | 121.4057   | Min. for Water | 20.10.78 |
| 35679   | Ninghan | 404.5143   | W.A.W.A.       | 17.11.78 |
| 12547   |         | 210.0369   |                | 22.12.78 |
| 20339   |         | 1 246.3711 | W.A.W.A.       | 22.12.78 |
| 26410   |         | 157.5487   |                | 22.12.78 |

cont'd...

| NO.                     | NAME             | AREA (ha)    | VESTING       | GAZETTED |
|-------------------------|------------------|--------------|---------------|----------|
| 27219                   |                  | 199.7629     | W.A.W.A.      | 19.1.79  |
| 35826                   |                  | 36.1290      | W.A.W.A.      | 19.1.79  |
| 2863                    |                  | 841.1800     | Min for Water | 2.3.79   |
| A.35752                 | Walyahoming      | 20 925.2766  | W.A.W.A.      | 16.3.79  |
| 16000                   |                  | 102.3792     | W.A.W.A.      | 30.3.79  |
| 16896                   |                  | 5.0585       | Min for Water | 30.3.79  |
| 18584                   |                  | 576.6770     | W.A.W.A.      | 30.3.79  |
| 20479                   |                  | 64.7497      | W.A.W.A.      | 30.3.79  |
| 21719                   |                  | 121.5226     | W.A.W.A.      | 30.3.79  |
| 24465                   |                  | 531.7443     | Min for Water | 30.3.79  |
| A.35918                 | Dragon Tree Soak | 14 182.0000  | W.A.W.A.      | 30.3.79  |
| A.36003                 |                  | 1 112.8201   | W.A.W.A.      | 30.3.79  |
| 36028                   |                  | 1 330.0000   | W.A.W.A.      | 27.4.79  |
| 36053                   |                  | 10 853.7275  |               | 11.5.79  |
| 36056                   |                  | 40.9500      |               | 11.5.79  |
| 36063                   |                  | 553.2381     |               | 11.5.79  |
| 20985                   |                  | 63.6368      | W.A.W.A.      | 8.6.79   |
| 36101                   |                  | 84.9249      | W.A.W.A.      | 8.6.79   |
| 36102                   |                  | 149.5780     | W.A.W.A.      | 8.6.79   |
| 19740                   |                  | 58.0749      | W.A.W.A.      | 22.6.79  |
| 36126                   |                  | 31.0967      | Min for Water | 22.6.79  |
| 36127                   |                  | 50 350 0000  | W.A.W.A.      | 22.6.79  |
| A.36128                 |                  | 32 096.7336  |               | 22.6.79  |
| TOTAL : 39 New Reserves |                  | 140 892.1918 |               |          |

Total Area:

25 Reserves                      93 724.2080  
W.A.W.A. only

6. OTHER CHANGES

(i) Amendments to Area 1978/79

| NO.     | NAME             | VESTING                         | OLD AREA     | NEW AREA     | DIFFERENCE  | DATE     |
|---------|------------------|---------------------------------|--------------|--------------|-------------|----------|
| 7756    |                  |                                 | 44.1107      | 33.4270      | -10.6837    | 14.7.78  |
| 27241   |                  |                                 | 8.0937       | 6.9000       | -1.1937     | 28.7.78  |
| 31880   | Lake Muir        | W.A.W.A.                        | 10 400.0000  | 12 136.0000  | +1 736.0000 | 11.8.78  |
| A.10922 |                  |                                 | 99.1480      | 117.0124     | +17.8644    | 11.8.78  |
| 24496   |                  |                                 | 71 498.0000  | 71 425.5831  | -72.4169    | 11.8.78  |
| 24897   |                  |                                 | 704.8629     | 696.6766     | -8.1863     | 25.8.78  |
| 20381   |                  |                                 | 70.0106      | 285.2697     | +215.2591   | 25.8.78  |
| 28656   |                  |                                 | 15.7069      | 22.9910      | +7.2841     | 25.8.78  |
| 23758   |                  |                                 | 269.1160     | 288.3240     | +19.2080    | 8.9.78   |
| A.8437  | Badjalang        | W.A.W.A.                        | 301.4409     | 300.1877     | -1.2532     | 6.10.78  |
| 24496   |                  |                                 | 71 498.0000  | 71 363.3270  | -134.6738   | 17.11.78 |
| B.26411 |                  |                                 | 1.4165       | 3.8306       | +2.4141     | 17.11.78 |
| B.29254 |                  |                                 | 1.5176       | 4.0309       | +2.5133     | 17.11.78 |
| B.24979 |                  |                                 | 8.0937       | 8.6189       | +5252       | 17.11.78 |
| B.29259 |                  |                                 | .7689        | 6.3709       | +5.6020     | 17.11.78 |
| B.29258 |                  |                                 | .6070        | 6.8548       | +6.2478     | 17.11.78 |
| 9838    | Lk. Wannamal     | W.A.W.A.                        | 80.9371      | 85.9956      | +5.0585     | 17.11.78 |
| A.20338 | Bendering        | W.A.W.A.                        | 5 119.2730   | 5 186.0006   | +66.7276    | 22.12.78 |
| A.25210 |                  |                                 | 16 928.4616  | 18 220.7312  | +1 292.2696 | 22.12.78 |
| 26819   |                  |                                 | 161.6947     | 347.4505     | +185.7558   | 19.1.79  |
| 27394   |                  |                                 | 481.7074     | 740.7062     | +258.9988   | 2.3.79   |
| 27632   |                  |                                 | 625 343.6145 | 625 322.6945 | -20.9200    | 2.3.79   |
| 24789   | Nuytsland        | W.A.W.A.                        | 10 070.9919  | 9 948.4760   | -122.5159   | 9.3.79   |
| A.9617  | Bulbining Lake   | W.A.W.A.                        | 186.2009     | 290.3541     | +104.1532   | 16.3.79  |
| 30463   | Barkers Junction | W.A.W.A.                        | 1 073.7069   | 1 090.1321   | +16.4252    | 30.3.79  |
| 14429   | Mollerin         | W.A.W.A.                        | 648.6150     | 6 637.2942   | +5 988.6792 | 12.4.79  |
| 24496   |                  |                                 | 71 290.3262  | 71 242.6577  | -47.6685    | 27.4.79  |
| 28558   | Namming Lake     |                                 | 2 128.6460   | 5 285.1945   | +3 156.5485 | 27.4.79  |
| 855     |                  |                                 | 377.1822     | 11.9768      | -365.2054   | 11.5.79  |
| A.32257 | Lk Warden        | Dandaragan<br>Shire<br>W.A.W.A. | 730.7491     | 709.7000     | -21.0491    | 8.6.79   |

Total - = -805.7665

Total + = +13 087.5340

Total area amended = +12 281.7675

Total 17 W.A.W.A. Reserves amended = +9 669.5292



(ii) Existing Reserves Vested 1978/79

| NO.               | NAME              | VESTING         | AREA (ha)   | DATE     |
|-------------------|-------------------|-----------------|-------------|----------|
| A.10733           | Parkeyerring Lake | W.A.W.A.        | 684.4903    | 14.7.78  |
| A.9307            | Mongelup Pool     | W.A.W.A.        | 39.1634     | 28.7.78  |
| A.16031           |                   | W.A.W.A.        | 39.7246     | 28.7.78  |
| A.16568           |                   | W.A.W.A.        | 22.1236     | 28.7.78  |
| 35217             | Kirwan            | W.A.W.A.        | 70.1177     | 11.8.78  |
| A.11144           | Boyagin Rock      | W.A.W.A.        | 121.8104    | 28.7.78  |
| 23758             | Badjaling         | W.A.W.A.        | 288.3240    | 8.9.78   |
| 15762             | Big Brook         | W.A.W.A.        | 85.0627     | 20.10.78 |
| A.26677-<br>26682 |                   | W.A.W.A.        | 1 928.5168  | 20.10.78 |
| 28289             |                   | W.A.W.A.        | 153.4745    | 17.11.78 |
| 33990             |                   | W.A.W.A.        | 24.1815     | 17.11.78 |
| 4667              |                   | W.A.W.A.        | 33.1842     | 17.11.78 |
| 3345              |                   | W.A.W.A.        | 48.5623     | 17.11.78 |
| 24831             |                   | W.A.W.A.        | 35.6123     | 17.11.78 |
| 23566             |                   | W.A.W.A.        | 255.8726    | 17.11.78 |
| 3345              |                   | W.A.W.A.        | 258.9988    | 17.11.78 |
| B.26411           |                   | W.A.W.A.        | 3.8306      | 17.11.78 |
| B.29251           |                   | W.A.W.A.        | 40.3224     | 17.11.78 |
| B.29252           |                   | W.A.W.A.        | 8.4175      | 17.11.78 |
| B.29253           |                   | W.A.W.A.        | 4.0000      | 17.11.78 |
| B.29254           |                   | W.A.W.A.        | 4.0309      | 17.11.78 |
| B.29255           |                   | W.A.W.A.        | 1.5490      | 17.11.78 |
| B.29256           |                   | W.A.W.A.        | 5.2419      | 17.11.78 |
| B.29257           |                   | W.A.W.A.        | 7.2580      | 17.11.78 |
| A.29601           |                   | W.A.W.A.        | 61.6083     | 17.11.78 |
| B.29260           |                   | W.A.W.A.        | .0809       | 17.11.78 |
| B.29259           |                   | W.A.W.A.        | 6.3709      | 17.11.78 |
| B.29258           |                   | W.A.W.A.        | 6.8548      | 17.11.78 |
| 9237              |                   | Min for Water   | .7000       | 1.12.78  |
| A.25886           |                   | W.A.W.A.        | 153.5732    | 22.12.78 |
| 26819             |                   | W.A.W.A.        | 161.6947    | 22.12.78 |
| 35773             |                   | Busselton Shire | 9409 sq. m. | 22.12.78 |
| 24891             | Marbellup         | W.A.W.A.        | 66.0549     | 19.1.79  |
| 26668             | Highbury          | W.A.W.A.        | 16.9853     | 2.2.79   |
| 19650             |                   | W.A.W.A.        | 62.3191     | 16.2.79  |
| 27394             |                   | W.A.W.A.        | 740.7062    | 2.3.79   |
| 27525             |                   | W.A.W.A.        | 430.7898    | 2.3.79   |
| 27768             |                   | W.A.W.A.        | 1 105.9542  | 2.3.79   |
| 28300             |                   | W.A.W.A.        | 393.0940    | 2.3.79   |
| A.21229           |                   | W.A.W.A.        | 114.3996    | 16.3.79  |
| 18198             | Burracoppin       | W.A.W.A.        | 202.3428    | 12.4.79  |
| 19476             |                   | W.A.W.A.        | 90.7508     | 12.4.79  |
| 20504             |                   | W.A.W.A.        | 203.0409    | 12.4.79  |
| 25872             |                   | W.A.W.A.        | 440.7963    | 12.4.79  |
| A.26798           |                   | W.A.W.A.        | 84.2024     | 12.4.79  |
| 28406             |                   | W.A.W.A.        | 87.9129     | 12.4.79  |
| 29738             |                   | W.A.W.A.        | 479.9521    | 12.4.79  |

cont'd...

(ii) - cont'd...

| NO.                          | NAME     | VESTING  | AREA (ha)     | DATE    |
|------------------------------|----------|----------|---------------|---------|
| 14429                        | Mollerin | W.A.W.A. | 6 637.2942    | 27.4.79 |
| 20810                        |          | W.A.W.A. | 57.4654       | 27.4.79 |
| 23795                        |          | W.A.W.A. | 203.2003      | 27.4.79 |
| 24532                        |          | W.A.W.A. | 46.7588       | 27.4.79 |
| 24835                        |          | W.A.W.A. | 70.8200       | 27.4.79 |
| 27584                        |          | W.A.W.A. | 149.8401      | 27.4.79 |
| 28403                        |          | W.A.W.A. | 67.8152       | 27.4.79 |
| TOTAL = 59 Reserves Area     |          |          | = 16 307.8462 |         |
| TOTAL = 57 W.A.W.A. Reserves |          |          | = 16 307.1462 |         |

(iii) Existing Reserves Made Class "A" or "B"

| NO.                                | NAME                      | VESTING  | AREA (ha)     | GAZETTED |
|------------------------------------|---------------------------|----------|---------------|----------|
| A.25210                            | Lk Eganu and<br>Pinjarega | W.A.W.A. | 16 928.4616   | 25.8.78  |
| A.32257                            | Lake Warden               | W.A.W.A. | 730.7491      | 6.10.78  |
| A.26677-<br>26682                  |                           | W.A.W.A. | 1 928.5168    | 20.10.78 |
| A.18739                            | Milbrook                  | W.A.W.A. | 1 497.3369    | 17.11.78 |
| B.26411                            |                           | W.A.W.A. | 3.8306        | 17.11.78 |
| B.29251                            |                           | W.A.W.A. | 40.3224       | 17.11.78 |
| B.29252                            |                           | W.A.W.A. | 8.4175        | 17.11.78 |
| B.29253                            |                           | W.A.W.A. | 4.0000        | 17.11.78 |
| B.29254                            |                           | W.A.W.A. | 4.0309        | 17.11.78 |
| B.29256                            |                           | W.A.W.A. | 5.2419        | 17.11.78 |
| B.29257                            |                           | W.A.W.A. | 7.2580        | 17.11.78 |
| A.29601                            |                           | W.A.W.A. | 61.6083       | 17.11.78 |
| B.24977                            |                           | W.A.W.A. | 8.6189        | 17.11.78 |
| B.29260                            |                           | W.A.W.A. | .0809         | 17.11.78 |
| B.29259                            |                           | W.A.W.A. | 6.3709        | 17.11.78 |
| B.29258                            |                           | W.A.W.A. | 6.8548        | 17.11.78 |
| A.22796                            |                           | W.A.W.A. | 57.8087       | 17.11.78 |
| A.25886                            |                           | W.A.W.A. | 153.5732      | 22.12.78 |
| A.27286                            |                           | W.A.W.A. | 343.3150      | 22.12.78 |
| A.21229                            |                           | W.A.W.A. | 114.3996      | 13.3.79  |
| A.9617                             | Dulbining Lake            | W.A.W.A. | 290.3541      | 30.3.79  |
| TOTAL Made Class "A" = 15 reserves |                           |          | = 40 326.8447 |          |
| TOTAL Made Class "B" = 11 reserves |                           |          | = 95.0268     |          |
| TOTAL                              |                           |          | = 40 421.8715 |          |

(iv) Existing Reserves, Change of Purpose 1978/79

| NO.               | NAME      | VESTING  | FROM                                             | TO                                      | AREA        | GAZETTED |
|-------------------|-----------|----------|--------------------------------------------------|-----------------------------------------|-------------|----------|
| 27385             |           |          | Cons. of<br>Flora                                | Water &<br>Cons. of<br>Flora            | 70.6581     | 11.8.78  |
| 31880             | Lake Muir | W.A.W.A. | Cons. of<br>Flora &<br>Fauna                     | Water &<br>Cons. of<br>Flora &<br>Fauna | 12 136.0000 | 11.8.78  |
| 23758             | Badjaling | W.A.W.A. | Cons. of<br>Flora                                | Cons. of<br>Flora &<br>Fauna            | 288.3240    | 8.9.78   |
| 15762             | Big Brook | W.A.W.A. | Pres. of<br>Flora &<br>Fauna                     | Cons. of<br>Flora &<br>Fauna            | 85.0627     | 20.10.78 |
| A.26677-<br>26682 |           | W.A.W.A. | Cons. of<br>Flora &<br>Fauna                     | Water &<br>Cons. of<br>Flora &<br>Fauna | 1 928.5168  | 20.10.78 |
| 23566             |           | W.A.W.A. | Timber<br>for<br>Settlers<br>& Cons.<br>of Fauna | Cons. of<br>Flora &<br>Fauna            | 255.8726    | 17.11.78 |
| 3345              |           | W.A.W.A. | Pres. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 258.9988    | 17.11.78 |
| B.26411           |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 3.8306      | 17.11.78 |
| B.29251           |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 40.3224     | 17.11.78 |
| B.29252           |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 8.4175      | 17.11.78 |
| 29253             |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 4.0000      | 17.11.78 |
| 29254             |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 4.0309      | 17.11.78 |
| 29255             |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 1.5490      | 17.11.78 |
| B.29256           |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 5.2419      | 17.11.78 |
| 29257             |           | W.A.W.A. | Cons. of<br>Fauna                                | Cons. of<br>Flora &<br>Fauna            | 7.2580      | 17.11.78 |

(iv) - cont'd...

| NO.     | NAME       | VESTING  | FROM                                     | TO                                                | AREA       | GAZETTED |
|---------|------------|----------|------------------------------------------|---------------------------------------------------|------------|----------|
| 29601   |            | W.A.W.A. | Cons. of<br>Flora &<br>Fauna             | Water &<br>Cons. of<br>Flora &<br>Fauna           | 61.6083    | 17.11.78 |
| 29260   |            | W.A.W.A. | Cons. of<br>Fauna                        | Cons. of<br>Flora &<br>Fauna                      | .0809      | 17.11.78 |
| 29259   |            | W.A.W.A. | Cons. of<br>Fauna                        | Cons. of<br>Flora &<br>Fauna                      | 6.3709     | 17.11.78 |
| B.29258 |            | W.A.W.A. | Cons. of<br>Fauna                        | Cons. of<br>Flora &<br>Fauna                      | 6.8548     | 17.11.78 |
| 9237    |            | W.A.W.A. | "Water"                                  | Water &<br>Cons. of<br>Flora &<br>Fauna           | .7000      | 1.12.78  |
| 4668    |            |          | Water &<br>Flora                         | Water &<br>Recrea-<br>tion                        | 23.2315    | 1.12.78  |
| A.25886 |            | W.A.W.A. | Cons. of<br>Fauna                        | Cons. of<br>Flora &<br>Fauna                      | 153.5732   | 22.12.78 |
| 26668   | Highbury   | W.A.W.A. | Cons. of<br>Fauna &<br>Stopping<br>Place | Cons. of<br>Flora &<br>Fauna                      | 16.9853    | 2.2.79   |
| 19650   |            | W.A.W.A. | Prot. of<br>Native<br>Flora              | Cons. of<br>Flora &<br>Fauna                      | 62.3191    | 16.2.79  |
| 27525   |            | W.A.W.A. | Preser-<br>vation<br>of Flora            | Cons. of<br>Flora &<br>Fauna                      | 430.7898   | 2.3.79   |
| 27768   |            | W.A.W.A. | Prot. of<br>Natural<br>Veg.              | Cons. of<br>Flora &<br>Fauna                      | 1 105.9542 | 2.3.79   |
| 28300   |            | W.A.W.A. | Pres. of<br>Natural<br>Veg.              | Cons. of<br>Flora &<br>Fauna                      | 393.0940   | 2.3.79   |
| 15231   | Woody Lake | W.A.W.A. | Cons. of<br>Flora &<br>Fauna             | Recrea-<br>tion &<br>Cons. of<br>Flora &<br>Fauna | 522.8723   | 9.3.79   |
| A.21229 |            | W.A.W.A. | Prot. of<br>Flora &<br>Fauna             | Cons. of<br>Flora &<br>Fauna                      | 114.3996   | 13.3.79  |
| 19476   |            | W.A.W.A. | Flora &<br>Fauna                         | Cons. of<br>Flora &<br>Fauna                      | 90.7508    | 12.4.79  |

(iv) - cont'd...

| NO.   | NAME     | VESTING  | FROM                         | TO                           | AREA       | GAZETTED |
|-------|----------|----------|------------------------------|------------------------------|------------|----------|
| 20504 |          | W.A.W.A. | Cons. of<br>Flora            | Cons. of<br>Flora &<br>Fauna | 203.0409   | 12.4.79  |
| 25872 |          | W.A.W.A. | Cons. of<br>Flora            | Cons. of<br>Flora &<br>Fauna | 440.7963   | 12.4.79  |
| 14429 | Mollerin | W.A.W.A. | Prot. of<br>Flora &<br>Fauna | Cons. of<br>Flora &<br>Fauna | 6 637.2942 | 27.4.79  |
| 20810 |          | W.A.W.A. | Scenic<br>Reserve            | Cons. of<br>Flora &<br>Fauna | 57.4654    | 27.4.79  |
| 23795 |          | W.A.W.A. | Flora                        | Cons. of<br>Flora &<br>Fauna | 203.2003   | 27.4.79  |
| 24532 |          | W.A.W.A. | Cons. of<br>Flora            | Cons. of<br>Flora &<br>Fauna | 46.7588    | 27.4.79  |
| 24835 |          | W.A.W.A. | Cons. of<br>Flora            | Cons. of<br>Flora &<br>Fauna | 70.8200    | 27.4.79  |
| 28403 |          | W.A.W.A. | Cons. of<br>Flora            | Cons. of<br>Flora &<br>Fauna | 67.8152    | 27.4.79  |

(v) Existing Reserves Cancelled 1978/79

| RESERVE NO. | VESTING | AREA (ha) | DATE GAZETTED |
|-------------|---------|-----------|---------------|
| 29179       | -       | 2.1069    | 22.12.78      |
| 32154       | -       | 1.0051    | 22.12.78      |
| 27393       | -       | 258.9988  | 2.3.79        |
| 26986       | -       | 16.4252   | 12.4.79       |

TOTAL = Reserves cancelled, area = 278.5360

(vi) Existing Reserves Vestings Cancelled 1978/79

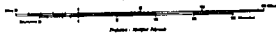
| RESERVE NO. | VESTING  | AREA (ha) | DATE GAZETTED |
|-------------|----------|-----------|---------------|
| 19128       | W.A.W.A. | 817.4650  | 8.6.79        |

(vii) Existing Reserves Purpose Changed to Outside Interests 1978/79

| RESERVE NO. | PURPOSE CHANGED TO    | AREA     | DATE GAZETTED |
|-------------|-----------------------|----------|---------------|
| 25813       | Recreation            | 1.2116   | 22.12.78      |
| 7406        | Nat. Park & Water     | 67.5825  | 9.3.79        |
| 8428        | National Park         | 68.3919  | 9.3.79        |
| 8429        | National Park         | 182.5132 | 9.3.79        |
| 8430        | National Park         | 318.0829 | 9.3.79        |
| 8432        | National Park         | 64.7497  | 9.3.79        |
| 8433        | National Park         | 215.2928 | 9.3.79        |
| 8435        | National Park         | 192.1570 | 9.3.79        |
| 8694        | National Park         | 222.5771 | 9.3.79        |
| 8768        | National Park         | 242.8114 | 9.3.79        |
| 10922       | National Park         | 117.0124 | 9.3.79        |
| 20091       | Recreation & Parkland | 76.8903  | 9.3.79        |

# MAP OF WESTERN AUSTRALIA

Scale: 1 Inch to 50 Miles



SHOWING LOCAL AUTHORITY BOUNDARIES

As at June 1972

Local Authority Boundaries

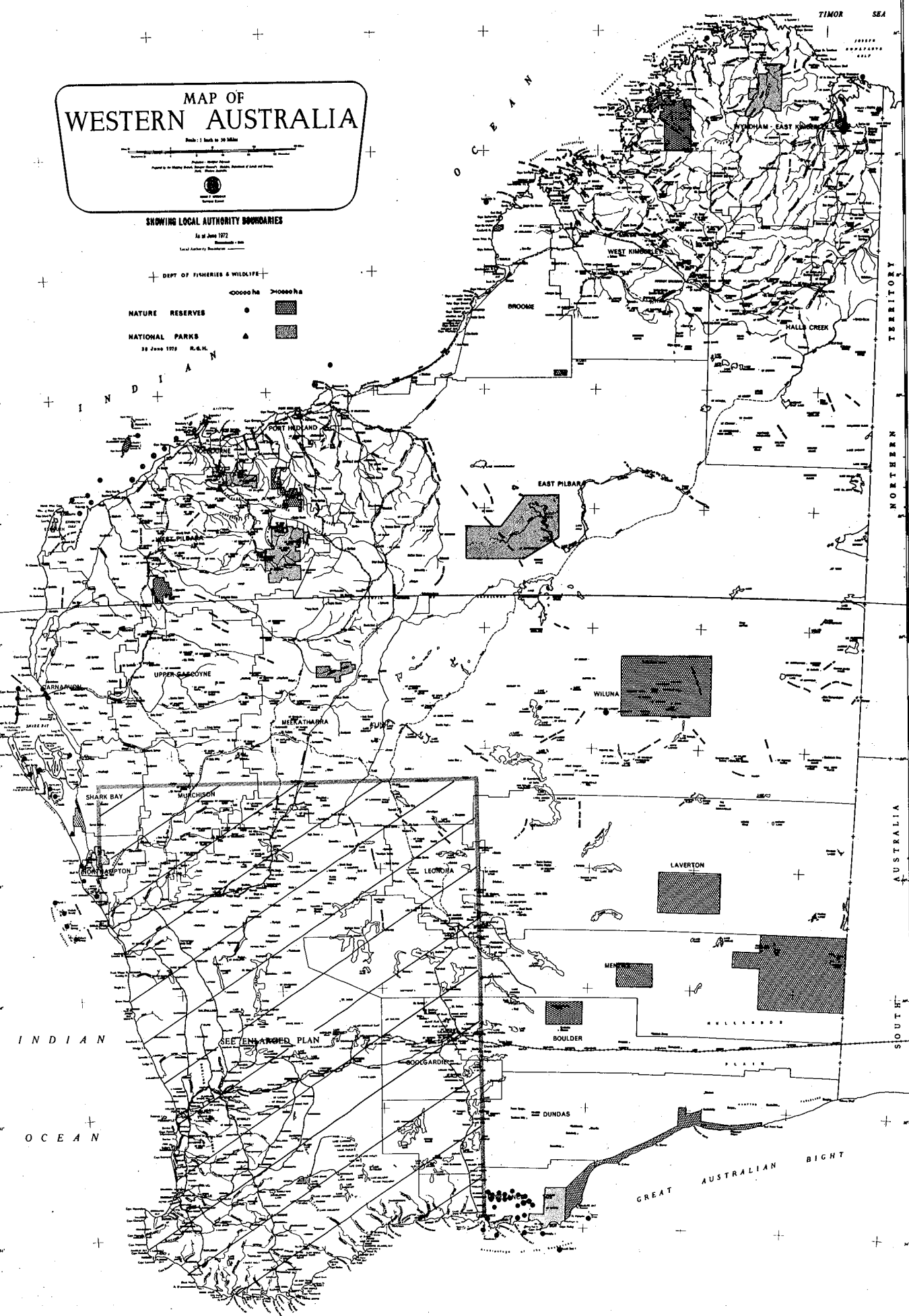
DEPT. OF FISHERIES & WILDLIFE

0-10000 ha 10000-20000 ha

NATURE RESERVES

NATIONAL PARKS

28 June 1972 R.G.H.



INDIAN OCEAN

SEE ENLARGED PLAN

GREAT AUSTRALIAN BIGHT

NORTHERN TERRITORY  
AUSTRALIA  
SOUTH





## V RESERVE MANAGEMENT

### 1. WANNEROO

#### (i) Firebreaks.

During the past year this unit has continued with the fire break construction programme and maintenance of what now amounts to nearly 3,000 km of fire breaks on Nature Reserves throughout the State. The maintenance cost for the upkeep of these breaks is becoming quite considerable even though most farmers are cooperative in keeping their charges down and in some instances no charge is made at all. However, this does not always prove a satisfactory solution.

A detailed list of bulldozing and maintenance follows.

#### CONTRACT PLOUGHING ON NATURE RESERVES

| Reserve No. | Name                   | Length (km) | Shire            |
|-------------|------------------------|-------------|------------------|
| A.26763     | Burngup                | 26          | Lake Grace       |
| 32400       | Clackline              | 20          | Northam          |
| A.26793     | Corackerup             | 54          | Gnowangerup      |
| 29231)      | East Yuna              | 39          | Chapman Valley   |
| 28415)      |                        |             |                  |
| 26678       | Kodjinup               | 14.5        | Manjimup         |
| 26677       | Kulunilup              | 12          | Cranbrook        |
| 29018       | Silver Wattle Hill (E) | 29          | Lake Grace       |
| 29019       | Silver Wattle Hill (W) | 98          | Lake Grace       |
| 29020       | Lake Bryde             |             | Kent             |
| 21          | " "                    |             | "                |
| 22          | " "                    |             | "                |
| 23          | " "                    |             | "                |
| 24          | " "                    |             | "                |
| 25          | " "                    | 155         | "                |
| A.25113     | Lake Magenta           | 96          | Kent/Gnowangerup |
| A.26680     | Lake Noobijup          | 6           | Cranbrook        |
| 2323        |                        | 12          | Mingenew         |
| A.687       | Namalcatching Well     | 13          | Dowerin          |
| 24367       | T.A. Maughan           | 16          | Merredin         |
| A.25711     | Tarin Rock North *     | 22          | Lake Grace       |
| A.29857     | Tarin Rock South *     | 40          | Lake Grace       |
| 22262       | Wundowlin Well         | 32          | Mukinbudin       |
| 22082       | Barbalin               | 8           | Mukinbudin       |
| 31424       |                        | 56          | Ravensthorpe     |
| 19900       |                        | 4           | Toodyay          |
| 22096       |                        | 13          | Toodyay          |
| A.18803     | Chinocup               | 13          | Kent             |
| 23601)      | Gunyidi                | 21.5        | Coorow           |
| 23602)      |                        |             |                  |
| Total       |                        | 800 km      |                  |

### BULLDOZING CONTRACTS

| Reserve No. | Name           | Length (km) | Shire          |
|-------------|----------------|-------------|----------------|
| 2322        | Gillingarra    | 4.5         | Moora          |
| 20738       | Koojan         | 6           | Moora          |
| 27886       | Rocky Springs  | 22.5        | Carnamah       |
| 29806       | Eneabba        | 30          | Carnamah       |
| 31030       | South Eneabba  | 26          | Carnamah       |
| 31781       | Nilgen         | 23          | Gingin         |
| 27609       | Flagstaff Lake | 8           | Woodanilling   |
| 30774       | Tenterden      | 4.5         | Cranbrook      |
| A.25798     | Lake Unicup    | 39          | Cranbrook      |
| A.24739)    | Harvey Estuary |             |                |
| A.23756)    |                | 42.5        | Murray/Waroona |
| 2707        | Robert Bay     | 4           | Murray         |
| A.2738      | Mealup Point   | 2           | Murray         |
| B.24036     | Austin Bay     | 25.5        | Murray         |
| 15762       | Big Brook      | 8           | Manjimup       |
| A.27310     |                | 4           | Manjimup       |
| Total       |                | 289.5 km    |                |

### MAINTENANCE WORK BY BRANCH STAFF

|         |                          |        |          |
|---------|--------------------------|--------|----------|
| 15556   | Thompsons Lake           | 65     | Cockburn |
| A.27621 | Twin Swamps              | 49     | Swan     |
| A.27620 | Ellen Brook              | 24     | Swan     |
| 30809   | Wildlife Research Centre | 5      | Wanneroo |
| 31211   | Mokine                   | 18     | Northam  |
| 21981   | Wambyn                   | 14     | York     |
| 30591   | St Ronan's Well          | 6      | York     |
| A.27956 | Two Peoples Bay          | 53     | Albany   |
| Total   |                          | 234 km |          |

#### (ii) Wildfires

During the year the Pingelly management team became a reality thus relieving the Wanneroo team of considerable pressures. However, eleven calls were made for assistance around Thompsons Lake. One fire jumped Russell Road and burned approximately one hectare of the Nature Reserve. Prior to the prohibited burning season the four buffer strips, dividing the reserve into quarters, were control burnt with the help of the Jandakot and Wattleup Bush Fire Brigades. This proved to be a successful exercise by containing two deliberately lit fires later in the season.

The unit assisted the Wanneroo Shire by bringing under control and suppressing a fire on Reserve No. 20091 (vested in the Shire) when all their suppression forces were fully committed.

It appears that wild fires are on the increase due to greater public pressures being brought to bear on reserves, mainly due to the upsurge of off road vehicles and bikes now in use.

Other fires attended include in the Mt Many Peaks area, one adjacent to the Harvey Estuary, two in the Manjimup area and one wildfire in the Avon Valley National Park.

(iii) Prescribed Burns

The six year burning plans in Albany and Kojonup are continuing.

A series of patch burns were placed around the Wanneroo Wildlife Research Centre building to reduce the build-up of flash fuels.

The buffer strip along Russell Road, Jandakot was control burnt in November 1978 prior to the control burning of the internal buffers.

A small prescribed fire was lit on Two Peoples Bay Nature Reserve in February 1979 to aid current research on plant ecology.

The annual roadside burn along the Ellen Brook Nature Reserve was carried out by the Bullsbrook Fire Brigade with a team from Wanneroo assisting.

(iv) Other Projects

The management branch accompanied by three volunteers visited Wanjarri again this year to commence an upgrading programme of the buildings. Concrete work on the main floor was completed and a kitchen sink and wash trough were installed. Sheep pens were removed and the roof painted. Weldmesh screens have been erected at the doorways to prevent the intrusion of animals. Four kangaroos had previously entered the shed and died making a very unpleasant task for Wildlife Officer Silvester who had to clean up their remains.

An inspection of fire breaks was made and the possible resighting of the South bore windmill was investigated whilst on the Nature Reserve.

2. PINGELLY

The two-man Nature Reserve Management team took up residence in Pingelly in September 1978. The team is responsible for the operations side of nature reserve management in 16 Local Authorities in the central wheatbelt. Currently some 236 Nature Reserves with a total area of 107 365 ha come under its control.

The teams duties have included:

- (a) firebreak design and construction
- (b) firebreak maintenance
- (c) wildfire fighting
- (d) prescribed burning
- (e) biological survey of existing and proposed reserves
- (f) research on mammals at Tutanning Nature Reserve
- (g) general reserve inspection and maintenance
- (h) preparation of a manual for operations staff.

### 3. RESOURCE MANAGEMENT

This years efforts have had two main emphases:

The first has been that of investigating and reporting on varieties of problems associated with Nature Reserves. This has involved liaising with Local Authorities and concerned groups. In this first case projects have been dealt with on an *ad hoc* basis. Such projects are listed hereunder.

- (1) Bruce Rock Shire is developing part of Kokerbin Hill Nature Reserve as a recreation site. Liaison has aimed at minimising impacts on the reserve by such developments.
- (2) Bruce Rock Shire is using part of Reserve A.24505 as a garbage tip. The tip may be a pollutant source to a major flowline on the reserve. Moreover, wildlife values are threatened. Resolution of the problem is being negotiated with the Shire.
- (3) Woody Island, 16 km south of Esperance, is part of the Recherche Archipelago Nature Reserve. The island is two square kilometres in area. Its sides are steep. The island's bedrock is covered by a thin mantle of soil which is stabilised by low scrub and woodland. The island is also used as a recreation facility and is a local tourist attraction. Management of such an island presents special problems which have been successfully coped with during the year.
- (4) Lake Dumbleyung Nature Reserve is of 5 000 ha and is an ephemeral lake. It is one of the south-west's largest natural impoundments. When it is filled with water, it is a popular tourist attraction. Negotiations with the Local Authority have continued through the year in relation to recreational uses and facilities.
- (5) Belaring and Goonaring Springs Nature Reserves are two reserves of 40 ha each sited 20 km west of Toodyay on the Toodyay Road. On those two reserves are two streams that support a population of a small native crayfish of the genus *Cherax*. As yet the species has not been

described, and it is believed to be endemic to those two reserves. A proposed subdivision to include the catchment which feeds the two streams posed a threat to the streams' water quality on which the crayfish depend.

Negotiations with the subdivider, the Toodyay Shire Council, and other concerned Authorities, resulted in the 800 ha catchment being set aside, at no cost to the Crown, to complement the two nature reserves. This will ensure maintenance of water quality on which the crayfish's future depends.

- (6) Lake Booragoon in the City of Melville is a reserve of 13 ha. This reserve supports a viable *Melaleuca-Eucalyptus* woodland and is a refuge for some aquatic and terrestrial birds. However, the potential of this lake as an aquatic reserve was limited in the past because of low water levels over summer. Also, algal odour annoyed residents and stagnation killed some water birds.

As a result of negotiations with Melville City Council engineers underground water was used to charge the lake for the first time during last summer. In response to that artificial charging of the lake's level three cormorants (Great, Little Black and Little Pied) for the first time on record have formed a nesting rookery at the lake. Negotiations with the Council and monitoring of the lake are continuing.

- (7) Benger Swamp is a future wetland reserve of 600 ha. Once privately owned, now almost all has now been purchased for Nature Reserve purposes. Aerial photographs have been taken and are being used to monitor the swamp's vegetation. Bulrush thrives there and tends to intrude into open water areas that are necessary for waterfowl nursery habitat. Presently open water areas are being maintained by allowing farmers permissive use, although farm use of the swamp is tending to lessen. This means that in the future it may be necessary for the Department to investigate other ways to maintain such open spaces of water. The Benger Drainage Board still manages the swamp. Its meetings are being attended by Departmental representatives.

- (8) Negotiations have begun with the Shire of West Arthur in relation to diverting water into Lake Towerinning Nature Reserve, another ephemeral lake. This may involve the construction of a channel 10 km long. The object of the project is to maintain water in the lake for longer periods than has been possible in the past. Implications of the project are being investigated.

- (9) Lake Bryde Reserve is one of the Wheatbelt's few fresh water lakes. It has an area of 1.6 km and it is located in Shire of Kent where locals use the reserve as a recreational and fresh water resource. A resource survey was undertaken of this reserve and a land-use survey was undertaken of its catchment. After negotiating with local Authority recommendations were made in relation to the lake's future.
- (10) Negotiations have commenced with the Shire of Kent in relation to the construction of a major road of approximately 20 km through Lake Magenta reserve.

Land-use principles are being applied. Attention to impacts such as the siting of the road, borrow pits etc. are being considered.

The second emphasis has been directed to the rehabilitation of the lakes and foreshores of the Upper Arthur River. Unfortunately, lack of adequate rain has been a complicating factor because there has been insufficient rain this year to fill the lake.

This problem is being investigated by a committee comprising representatives from Public Works Department, Mines Department, Forests Department, Department of Agriculture and the Department of Fisheries and Wildlife.

Initially, attention has been concentrated on Lake Toolibin. When the lake fills, it is a significant wetland nursery remaining in the Wheatbelt, because it is of fresh water. 40 aquatic and 85 terrestrial birds use the lake reserve and its surrounds. Nesting species include 78 terrestrials and 26 aquatics.

A bore network has been installed and monitoring by the Department of Agriculture has provided useful data which are filed with the Public Works Department computer.

Such monitoring has shown that intact bushland maintains a lowered underground water table which, near the lake, is as salty as sea-water. If the underground water rises and intrudes into the lake floor, the lake would be destroyed as a wetland nursery.

Vegetative control of the water table was jeopardised by recent clearing of already barely adequate bushland that surrounded the lake. To solve this problem committee members completed an environmental survey, and the Department of Lands and Surveys provided colour and infra-red photographs, and contoured 30 km<sup>2</sup> of the lake and its surrounds. The data thus collected were used to justify purchase of another 40 ha of bushland adjoining the lake. This now totals 335 ha of

bushland purchased over the past two years to complement the lake reserve.

The Forests Department is continuing to monitor vegetation regeneration on recently purchased land adjoining the lake. This Department is investigating the effects of salinity on some selected invertebrates.

## VI WILDLIFE RESEARCH

### 1. BIOLOGICAL SURVEY

The integrated biological survey of the Goldfields continued with field trips to the Lake Dundas area (October 1978) and Wanjarri/Erlistoun (February 1979). The Western Shrike-tit *Falcunculus frontatus leucogaster* was recorded near Lake Dundas and represents a considerable range extension. Initial collation of data from these surveys has commenced.

The second of two field trips to an area of vacant Crown land at Toolonga (East of Nerren-Nerren Station) was completed in April 1979. This work was undertaken in response to a recommendation by the Environmental Protection Authority in its report "Conservation Reserves for Western Australia". A report on this area has been prepared for publication.

In September 1978 a second and final survey of the Dampier Peninsula (West Kimberley) was carried out with an emphasis on ascertaining the current status of the medium-sized native mammals of this area. A report on the results of this work is nearing completion. Several specimens of the Timor Pipistrelle *Pipistrellus tenuis* were collected. This small bat has not been recorded in Western Australia since 1895.

The ongoing biological survey of the desert regions of Western Australia continued. With assistance from the National Parks Authority and the W.A. Herbarium in April/May 1979, biological collections were made along the northern portion of the Canning Stock route, the Anketell Ridge and the Rudall River National Park. Information collected on this survey suggests that the Western Hare-wallaby *Lagorchestes hirsutus* is still extant in the northern Great Sandy Desert. A further field trip is planned in early 1980 to confirm the presence of this species.

The adoption of more sophisticated techniques for trapping small mammals has resulted in increasingly comprehensive species lists from survey areas. Previously "difficult" species such as the smaller marsupial carnivores and bats, are particularly well represented in recent collections.

### 2. ANIMAL ECOLOGY

#### (i) Kangaroo Management Programmes

Monitoring of the commercial red kangaroo harvest as required by the Kangaroo Management Advisory Committee was continued.



A questionnaire survey of licensed professional shooters views on prospects for their continued involvement in the management programme, and their appreciation of possible changes in abundance and age structure of the red kangaroo population since 1976 was undertaken in October - November 1978.

Results from this survey generally indicated a declining margin between shooters costs and returns, in common with other sections of the community.

A decrease in kangaroo breeding during the intervening drought, and some reductions in abundance of the kangaroos were also suggested. Rainfall during 1978 led to increased breeding success in the latter part of the year.

No further advances have been made in redevelopment of the export trade in game meat. The United States of America has also continued its ban on importation of kangaroo products.

Western Grey Kangaroo management continues on a local *ad hoc* basis with a large proportion of the kangaroos taken being passed on to the commercial trade.

Further involvement of commercial trade in management of the Agile Wallaby in the West Kimberley area is planned.

(ii) Wheatbelt Rock Wallaby (*Petrogale lateralis*) Project

Estimates of the total population for the whole area indicate that there are about 75 animals with an age structure consisting of predominantly mature animals. Trapping data show that most females are carrying pouched young of different sizes; thus it would appear that these populations are continuously breeding at least under the prevailing environmental conditions.

From these data it is clear that survival of the young is currently very low; the major factor which is believed to be affecting recruitment is predation by foxes and possibly by feral cats.

An attempt is being made to measure the impact of these exotic predators by partitioning the study area into two zones; in one area, we are endeavouring to diminish the predator population while the other area is to serve as a control zone. Thus, if predation is a significant factor affecting recruitment, population numbers and survival rates of the recruits should increase as predation pressure is relaxed. Population responses

in both zones will be monitored, but it is anticipated that a statistically measurable response will not be evident for sometime because of the low numbers, and the low intrinsic rate of increase common to macropods.

To date, however, our efforts to control predators by baiting has been disappointing; the baits which are supplied and laid by the Agriculture Protection Board are not sufficiently attractive, and as a result there has not been a noticeable decline in predator sightings. If this aspect of the project is to succeed a more flexible and efficient method must be devised.

Dietary studies have shown that the food of the wheatbelt rock wallabies (RW) consists of grasses. Trapping recaptures reveal only moderate weight losses and in general, the nutritional status and body condition is judged to be good. More data is needed for a complete nutritional appraisal especially during severe drought conditions.

Trapped RW have been routinely swabbed for *Salmonella* and to date all have been negative. Foxes have also been negative, but there is a low incidence of *Salmonella* in feral cats. RW, rabbits, feral cats and foxes have been checked for evidence of Toxoplasmosis infections by R. Jakobs of Murdoch University; so far the results have been negative, but the sample size is rather small at this stage.

Inbreeding studies have been partly completed using electrophoretic methods on blood. No variability has been detected even between isolated populations. The implications of these findings are being explored.

(iii) Dampier Archipelago Rock Wallaby Project

Three islands in the Archipelago are known to support RW populations; the more remote Enderby and Rosemary support thriving populations of *Petrogale rothschildi* while on Dolphin Island a RW species has been sighted but never identified.

Enderby Island was surveyed and trapping programme was implemented. Transect surveys were carried out and the animals were found to be very abundant.

Dolphin Island was surveyed in a similar manner but only 4 RW were sighted. One animal was collected and it proved to be *P. rothschildi*; this is a new record.

Habit differences and the presence of the euro (*Macropus robustus*) could be factors affecting RW abundance, but this is considered unlikely. A major factor is the presence of the fox and feral cat on Dolphin.

The project is continuing with the resident Reserves Officer R. Sokolowski trapping the Enderby population on a bimonthly basis to collect basic biological information on this little-studied species.

(iv) Dorre Island - Nutritional Studies on Macropodids.

In April the Dorre Island macropodids (3 spp.) were investigated with respect to their digestive physiology and nutritional niche. The analytical work has been nearly completed: in general, the results show that the 3 species are clearly 'ruminant-like' but differ with respect to stomach anatomy and food preferences. A similar visit to Bernier Island is planned to extend the study to include feral goats with the object of assessing competitive nutritional interactions between goats and the three macropodids.

(v) Banded Hare Wallaby Reintroduction Programme - Dirk Hartog Island.

The second stage of the release programme is now going into its second year. Progress to date has generally been in accordance with expectations but numbers hoped for have not been attained.

Only two adult females were obtained from Dorre Island in August 1978 due to an apparent scarcity of these wallabies in the White Beach area. These females were added to the release group as planned.

Five wallabies were also taken by wedge-tailed eagles from the group of 15 adults plus 1 large pouch young left in the original (1974) yard colony between the visit in June 1978 and the next visit in August 1978, after the Dorre Island trip.

These events were instrumental in the subsequent decision to increase the size of the experimental release group by further reducing numbers in the residual group to be held in the original yard colony, despite a previous decision to the contrary.

A total of twenty-one adult and independent juveniles comprised the field release group (10♂♂, 11♀♀) at commencement of the field scale release experiment in late September 1978.

Five days trapping to assess survival and dispersal of animals in this group were undertaken in early June 1979. Thirteen (5♂♂, 8♀♀) of the initial twenty-one individuals were retrapped, along with 3 dependent juveniles (2♂♂, 1♀). Lactation also provided evidence that two other females were supporting dependent juveniles which were not trapped.

Trapping and tracking data showed that these wallabies were then using an area of at least 22.5 ha (750m x 300m), compared with the 4 ha of the experimental enclosure from which dispersal was commenced. The major dispersal has been downwind (predominantly northward), and confined to the taller and denser vegetation (mainly *Acacia ligulata*).

Feral cats still inhabit Dirk Hartog Island and were present in the area being utilized by the wallabies in June 1979. Possible adverse effects of cat predation on recruitment to this experimental population are yet to be assessed. However, more detailed knowledge of the tolerance of the Banded Hare Wallaby to '1080' is being sought in case more intensive baiting for cat control is needed in future.

(vi) Dugong

The north-west coast from Port Hedland to Exmouth including Exmouth Gulf was resurveyed during July 1978. The apparent importance of Exmouth Gulf as dugong habitat previously indicated by the first survey in February 1977 was confirmed by the sighting of 138 dugong in the eastern parts of the Gulf.

A further survey of Shark Bay was flown in Easter 1979 to assess effects of the passage of cyclone 'Hazel' on the resident dugong population. No evidence of mortality due to the cyclone was found. Rather, this survey revealed a higher total number of dugong (363 individuals) than previously recorded on surveys within Shark Bay.

A two month field study of dugong in Shark Bay was commenced by Professor Paul Anderson of the University of Calgary late in May 1979. Weather conditions were much less favourable for this work through June 1979 than those encountered during the reconnaissance survey in June 1978 and were proving a major obstacle to progress.

Gathering of material for media coverage dealing with aspects of dugong biology was also planned to coincide with this field study; the organizations involved being - ABC-TV Wildlife and The National Geographic Society.

(vii) Numbat Project

Sightings of the Numbat or Banded Anteater (*Myrmecobius fasciatus*) are now infrequent; the causes of the decline are not known, but it is correlated with the recent increase in the fox population.

A survey of Numbat habitat is now in progress with the object of assessing the present population status, and also to locate and capture specimens for a captive colony which

is to be maintained at the Western Australian Wildlife Research Centre. Attempts will be made to devise an artificial diet for the numbat which, in the past, has only been maintained on a natural diet of termites.

(viii) Waterbird and Wetland Research

- (a) Installing depth gauges in selected wetlands continued during the 1978-79 year. The total number of lakes now gauged is fifty-six (56). Monitoring of these lakes for depth, salinity and temperature is conducted every two (2) months. Information obtained will provide valuable records on water quality, variations and depth fluctuations which will aid future wetland management schemes. The data will also enable a more accurate assessment of predicted water loss during summer months in respect to determining the duration of duck hunting seasons.
- (b) Annual ground and aerial surveys were conducted in October and November. Findings from these surveys together with statistical data compiled from rainfall records were presented in the 1978-79 Waterfowl and Wetland Review. The report was submitted to the Bird Committee of the Western Australian Wildlife Authority in support of the recommendations for a duck hunting season.
- (c) Wetlands which are under application to lease for mining in the Lake Muir area were monitored for water quality in accordance with the conditions of the agreement between the Department of Mines, Department of Fisheries and Wildlife and Magnet Industries Pty Ltd. Liaison and monitoring of current peat mining operations at Cowerup Swamp were also maintained through the year.
- (d) The programme for the culling of all exotic duck species which was initiated in January 1978 continued this year with a total of 111 ducks being removed from metropolitan lakes. Approximately fifty-two (52) birds still remain on the Swan and Canning rivers.
- (e) Maximum water retention at Lake Chittering was achieved last winter by controlling flows at the check structure installed in 1977. For the first time since approx. 1966 the lake contained water for a whole year.
- (f) Trapping and banding of Australian Pelicans continued. 325 free flying birds were captured by means of a cannon net at a number of centres from Beaufort Inlet to Greenough river. A further 44 birds were wing tagged. Assistance from members of the public continued to be obtained for this project.

Checks on nesting colonies were maintained and banding was carried out at one colony in Shark Bay.

- (g) The banding of transequatorial migratory waders at Pelican Point lapsed due to the same problems encountered in the previous season. Steps have been taken to involve a group of volunteer ornithologists to continue the work at Pelican Point, and perhaps other roosting sites, with Departmental support.
- (h) A bi-monthly survey of several wetland regions in the Parkfield drainage system was undertaken. Bird counts and water levels were recorded on three sites of interest for retention as waterbird refuges.
- (i) Surveys of an area south of a boundary from Torbay north to Bluff Knoll and east to Gordon Inlet were undertaken. The type and size of wetland representation within that area known as Complex 11 is being investigated with a view to acquiring available wetlands which are poorly represented.
- (j) An overseas study was made by Mr J.A.K. Lane of the techniques of waterbird conservation in the United Kingdom and Europe.

The study included participation in migratory wader banding activities and methods of trapping, inspection of numerous waterbird refuges and liaison with waterbird conservation authorities.

- (k) Surveys of Kwobrup swamp near Katanning were undertaken following sightings of Freckled Duck breeding on the swamp. Moves have been initiated to acquire portions of the swamp currently held by local land owners.
- (l) A programme was initiated to encourage farmers to consider waterfowl nesting, particularly ground nesters, when designing new dams and soaks. Advice has been supplied verbally with on-site inspections and with available publications to assist in modifications to existing dams and the construction of nest boxes suitable for the encouragement of nesting ducks.

(ix) Western Swamp (Short-necked) Tortoise

Work on the Western Swamp Tortoise continued. During the 1978 winter 9 animals were captured at Twin Swamps Nature Reserve and 8 at Ellen Brook Nature Reserve. The latest estimates of population size (for 1977) are: Twin Swamps

14 to 25 and Ellen Brook 7 to 10. The situation with respect to the future of the species remains grave and a review of possible options, including breeding in captivity, is being made.

A hatchling taken from Ellen Brook Nature Reserve in August 1978 has been kept at the Wildlife Research Centre and fed entirely on natural food. This animal has grown significantly faster than hatchlings in the Perth Zoo.

(x) Crocodiles

A second survey of Salt-water Crocodile numbers was conducted in July 1978, in conjunction with the University of Sydney. Counts were made in the Glenelg, Prince Regent and Ord Rivers. A report on this work has been published.

The second survey confirmed the results of the first, i.e. there are far too few crocodiles in the wild to allow culling for the hide trade.

The total non-hatchling Salt-water Crocodile population in Western Australia is estimated to be, at the most, about 2 000. The potential for recovery is not good.

(xi) Mangrove Bats

Research into bats utilising mangrove communities is continuing. Several more mangrove communities have been sampled and a variety of megachiroptera and microchiroptera, including a number of species previously considered rare or little known in Western Australia, have been recorded.

3. PLANT ECOLOGY

(i) Fire Ecology

At Two Peoples Bay Nature Reserve a further block of the strategic fire buffer was burnt in September 1978. A small section of another block was also burnt in September 1978 to act as a buffer zone for a proposed autumn burn, subsequently carried out in February 1979. A plot was established in heath to monitor the effects on vegetation regeneration of an autumn burn to compliment a similar study on adjacent heath, burnt in Spring 1976. Harvests of randomly selected quadrats were taken immediately before and after the 1979 autumn burn. A further harvest in the 1976 fire plot was carried out in October 1978. Material from each harvest is currently being processed.

Data collection in the Central Wheatbelt has continued, with emphasis on Tutanning Nature Reserve. A pilot survey was conducted at Tutanning in October 1978 in preparation for an ecological survey to provide comprehensive data on physical and floristic factors at each of 316 permanent grid points. A validated and updated field herbarium has been established.

(ii) Eneabba

Data from a comprehensive ecological survey in an area of ca. 20 km<sup>2</sup> of heathlands are in the final stages of analysis and publication of results is anticipated for the coming year. An examination of the impact on vegetation of brush harvesting (to provide material for rehabilitation of sand mined areas) has been conducted. Another study on floristics of the lateritic uplands between Coomaloo Creek and Arrowsmith River has also been conducted. Results of both studies are currently under analysis.

(iii) Middle Island

Middle Island was again visited in November 1978 and all 36 permanent regeneration sites were monitored, additionally sites established prior to the 1977 wildfire were visited and observations recorded. The publication of results for the Middle Island project was delayed in order to include the 1978 work; the manuscript is nearing completion and publication is imminent.

(iv) Lake King - 90 Mile Tank

A study was carried out in an area burnt approximately forty years ago to examine rates of regeneration and patterns of succession in what is now mallee-heath, compared with the pre-fire vegetation represented by adjacent, unburnt eucalypt woodland. The results of this study, which are currently being prepared for publication, highlight the persistent impact a single fire may have in particular vegetation types.

(v) Dorre Island

Work during a 7 day visit in August 1978 was concentrated on fauna, and combined with attempts to capture additional Banded Hare Wallaby females for transfer to Dirk Hartog Island.

Trapping results suggested that both the Boodie (*Bettongia lesueur*) and Marl (*Perameles bougainville*) were abundant in the White Beach area.



Observations also showed that the Western Hare Wallaby (*Lagorchestes hirsutus*) was relatively abundant on the regenerating area northward of White Beach. In contrast, the Banded Hare Wallaby (*Lagostrophus fasciatus*) appeared to be scarce in this area at this time. The apparent pattern of relative abundance and distribution of these two Hare Wallabies is most likely a reflection of the Banded Hare Wallaby's dependence on mature vegetation for shelter.

Limited duration of this visit combined with inclement weather prevented detailed work elsewhere on the island, although an overnight visit to the Quoin Bluff area was included.

Preparation of work completed in a form suitable for publication has been delayed.

#### 4. FLORA CONSERVATION

(i) Census and Atlas of Commercially Exploited W.A. Plants

Lists of plants exploited in the cut flower, seed and nursery trades were compiled from retail catalogues or from identifications of stock made by staff of the flora conservation unit at various business premises. A total of 1 114 species were found to be exploited, including 144 as cut flowers, 881 for seed and 620 for nursery plants. Maps of the distribution of all these species were compiled, and are currently being prepared for publication.

(ii) Atlas of the W.A. Flora - Pilot Programme

The feasibility of running an atlas mapping project involving data computerization and volunteer amateur field recorders was investigated. A three stage programme for launching the project is now envisaged. The first stage, involving development of appropriate computer programmes and the accession of data on the distribution of kangaroo paws and their relatives (Haemodoraceae, tribe Conostylideae), was initiated.

(iii) Conservation Status and Biology of Rare Species

The detailed study of *Eucalyptus caesia* continued. Data are now available for this species on distribution, population sizes, flowering phenology, pollination ecology, morphometric and genetic (isozymic) variability. *E. caesia* appears to occur in two forms, large flowered or small flowered, that probably warrant subspecific status.

The analysis of isozymic variability carried out in collaboration with Dr G. Moran, C.S.I.R.O. Division of Forest Research, Canberra, established that *E. caesia* is 3-10 times more variable between populations than forest eucalypts, and that each of the 12 known populations is genetically unique. This study highlights the importance of granite rocks as conservation reserves in Western Australia.

The recent rediscovery of *Eucalyptus steedmani*, a species thought to be extinct for 40 years, prompted a survey of the extant populations. Preliminary survey data on other rare eucalypts, including *E. carnabyi*, *E. exilis*, *E. pendens* and *E. johnsoniana*, were also obtained.

Two papers were written on threatened Western Australian plants and vertebrates and presented at a symposium at the 49th ANZAAS Congress in Auckland, New Zealand.

(iv) Biology of Kangaroo Paws and *Conostylis*

Work on these plants continued. Descriptions of 5 of the 10 new species of *Conostylis* now known were drawn up. A study of the pollination of *Anigozanthos* species and their hybrids in mixed populations was completed. Several papers were published or prepared for publication.

(v) Pollination Ecology

A study of bird and mammal pollen vectors in autumn-flowering *Banksia* communities at Cheyne Beach was undertaken and written up. Honeyeaters and Honey Possums were found to feed on several species of Myrtaceae and Proteaceae at this locality. An investigation of the pollination ecology of the rainforest tree *Syzygium tierneyanum* (Myrtaceae) in northern Queensland was also completed.

## 5. MISCELLANEOUS

(i) Bat Taxonomy

The study of the taxonomy and zoogeography of Free-tailed Bats of the Genus *Tadarida*, sub-genus *Mormopterus*, continued. Small series were collected at Exmouth Gulf, east of Norseman, Wanjarri and Erlistoun and additional material was borrowed from the National Museum of Victoria and the South Australian Museum.

Three main morphological forms can be recognised in Western Australia and specimens from elsewhere in Australia fall into four distinct groups, three of which are relatable to the W.A. forms by clinal trends.

The work is continuing.

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## VII ENFORCEMENT

### 1. ACTIVITIES

Increasing serious concern is being expressed at the scale of which illegal nest robbing for young immature fauna is occurring in this State. Excellent photographic evidence and time consuming compilation of reports on this matter are being received from concerned dedicated and active Wildlife Officers. The habit of robbing the nests and destruction of the tree and nesting hollows by the use of chain saws is deplorable and permanent and it is extremely difficult to apprehend offenders because of the sheer size of the Wildlife districts restrictions on staff increases, and the time needed for patrolling the vast areas where this predation is occurring. Retention of the habitat for the continued existence of wildlife is difficult enough without this senseless and unfortunately increasing practice. The only methods that will curtail and help to eliminate the destruction of nesting hollows, the protection of young immature fauna (some of them rare and in need of special protection) is for increased specialised mobile staff so that continued surveillance is maintained.

Co-operation continues with other Government Departments such as Police Department, Department of Agriculture and Customs Department, and their ready and continual assistance is gratefully acknowledged.

Wildlife Park inspections are now constant and less problems are occurring as a result. The standardisation of licensing conditions have materially helped such inspections to be uniformly enforced.

### 2. RESERVES.

Since 1969 the increases in reserves vested in the Western Australian Wildlife Authority have jumped from 127 comprising 818,442 ha, to 429 reserves comprising 7,888,563 ha in 1978. Wildlife Officers find the increased reserves impossible to adequately police. There is increased encroachment occurring and litter being dumped. Some prosecutions have resulted, and other cases are being investigated.

A tightening up on inspection procedures and approvals for the export overseas of family pets has been carried out. Persons with genuine family pets (fauna) transferred overseas are not affected by the new measures. Persons arriving in Australia on scholarships, teacher exchange, Rotary exchange and other short term postings, buy fauna, license it where and if necessary, and then when proceeding back to their country of origin in 6-12 months' time, claim the fauna (parrots/Cockatoos) as

family pets and wish to export them. Customs and Wildlife Officers investigate every such case and act accordingly.

Regulation 28(2) covering the temporary care of sick and derelict fauna by the public still causes considerable concern and emotive problems. Wildlife Officers frequently find themselves involved and decisions to have to release the fauna once it is recovered, or handed to a Wildlife Officer, are in many cases, extremely difficult to make and execute. People caring for the derelict fauna must therefore be told as soon as possible of the laws regarding the keeping of these sick animals. Generally if the latter has been explained, then the release or handing over of the animal is less traumatic. Other States do not permit the public to retain and care for sick protected fauna.

### 3. MANAGEMENT PROGRAMME

#### Grey and Red Kangaroos

Grey Kangaroo populations are generally increasing in many areas, so much so, that a liberalising of the issuing of damage licenses and the issuing of royalty tags to property owners shooting Kangaroos causing damage and for the sale of the animals taken under the authority of these licenses, is being practised. Persons shooting and selling Kangaroos without a license and without paying royalty, have been continually apprehended and prosecuted.

Red Kangaroos and the associated management programme are constantly monitored by the Advisory Committee. Enforcement in this programme continues and illegal operators have been apprehended and prosecuted. Pet meat processors and skin dealers throughout the State are subject to rigid and regular enforcement inspections.

#### Finch trapping season -

The opening of the 1978 trapping season was delayed by 7 days because of unavoidable administrative problems. 10 trappers were licensed this year. Mr. Joe Long, the most experienced Finch trapper in Australia, died prior to the season, and another experienced trapper Mr. B. O'Sullivan also passed away. With the later opening date, widespread rains which scattered the flocks and the death of two experienced trappers, and the non submission of returns by one trapper only 13,500 finches were recorded as being trapped, compared with 26,500 during the 1977 season. The 51% reduction can be readily attributed to the aforementioned reasons.

Duck Shooting season.

The 1 a.m. opening time chosen this year met with a very mixed and controversial reaction. Many favoured it but it is felt that the majority of shooters objected to it. Wildlife Officers had difficulty in apprehending offenders who shot early. However, apprehensions were made for excessive bag limits, no license, and possession of protected fauna.

4. PROSECUTIONS 1.7.1978 - 30.6.1979

Various offences against the Wildlife Conservation Act and Regulations occurred throughout the year. Of these, some 30 were considered to be of a less serious nature and warning letters were sent. In addition, in many instances, verbal warnings given by the Wildlife Officer were considered sufficient.

Details of prosecutions are recorded as follows:-

DISTRICT NO. 1 WYNDHAM  
Prosecutions - Nil

DISTRICT NO. 2 KARRATHA  
Prosecutions - 2

Cases Pending

DISTRICT NO. 3 MT MAGNET  
Prosecutions - Nil

DISTRICT NO. 4 CARNARVON  
Prosecutions - 3

Fines \$10.00 Costs \$29.10  
2 cases pending

DISTRICT NO. 5 GERALDTON  
Prosecutions - Nil

DISTRICT NO. 6 MOORA  
Prosecutions - 15

Fines \$320.00 Costs \$152.80  
7 cases pending

DISTRICT NO. 7 WONGAN HILLS  
Prosecutions - 3

Fines \$100.00 Costs \$67.30

DISTRICT NO. 8 WAROONA  
Prosecutions - 18

Fines \$460.00 Costs \$222.90  
9 cases pending

DISTRICT NO. 9 PINGELLY  
Prosecutions - 4

Fines \$50.00 Costs \$38.20  
2 cases pending

DISTRICT NO. 10 KALGOORLIE  
Prosecutions - Nil

DISTRICT NO. 11 BUSSELTON  
Prosecutions - 10

Fine \$100.00 Costs \$95.60

DISTRICT NO. 12 ALBANY  
Prosecutions - 2

Fine \$20.00 Costs \$19.10  
1 case pending

DISTRICT NO. 13 PERTH  
METROPOLITAN AREA -  
Prosecutions - 52

Fines \$1 580.00 Costs \$515.  
21 cases pending

DISTRICT NO. 14 MANJIMUP  
Prosecutions - 4

Fines \$120.00 Costs \$57.30  
1 case pending

DISTRICT NO. 15 ESPERANCE  
Prosecutions - 2

Cases pending

GRAND TOTALS:  
Prosecutions 114

Fines \$2 760.00 Costs \$1178.  
46 cases pending

BREACH DETAILS OVER ....



| Section of Act<br>or Regulation | No. | Description                                                   | (Total) |              |
|---------------------------------|-----|---------------------------------------------------------------|---------|--------------|
|                                 |     |                                                               | Fines   | Costs        |
|                                 |     |                                                               | \$      | \$           |
| DISTRICT NO. 2 - KARRATHA       |     |                                                               |         |              |
| Sect. 16(1)                     | 1   | Taking of protected fauna (ducks)                             |         | Case pending |
| Sect. 17B(2)(a)                 | 1   | Unlicensed Duck shooting                                      |         | Case pending |
| DISTRICT NO. 4 - CARNARVON      |     |                                                               |         |              |
| Reg. 7(7)                       | 1   | Having received kangaroo carcasses without a duly affixed tag | 10.00   | 29.10        |
| Reg. 50(1)(a)                   | 1   | Possession of kangaroo carcass without a license              |         | Case pending |
| Reg. 50(3)(b)                   | 1   | Affixing tag to an unlawfully taken kangaroo                  |         | Case pending |
| DISTRICT NO. 6 - MOORA          |     |                                                               |         |              |
| Sect. 16(1)                     | 4   | Taking of protected fauna (kangaroos)                         | 130.00  | 76.40        |
| Sect. 16(1)                     | 1   | Taking of protected fauna (kangaroos)                         |         | Case pending |
| Sect. 16(1)                     | 5   | Taking of protected fauna (ducks)                             |         | Case pending |
| Sect. A(1)                      | 3   | Possession of protected fauna (kangaroos)                     | 160.00  | 57.30        |
| Sect. 25(1)(e)                  | 1   | Giving false name and address                                 |         | Case pending |
| Reg. 46(i)                      | 1   | Interfering with wildlife on a nature reserve                 | 30.00   | 19.10        |
| DISTRICT NO. 7 - WONGAN HILLS   |     |                                                               |         |              |
| Sect. 16(a)(1)                  | 2   | Possession of protected fauna (kangaroos)                     | 80.00   | 38.20        |
| Reg. 12(7)(a)                   | 1   | Keeping birds without appropriate class of license            | 20.00   | 29.10        |
| DISTRICT NO. 8 - WAROONA        |     |                                                               |         |              |
| Sect. 16(1)                     | 1   | Taking of protected fauna (kangaroos)                         | 120.00  | 19.10        |
| Sect. 16(1)                     | 1   | Taking of protected fauna (kangaroos)                         |         | Case pending |
| Sect. 16(1)                     | 1   | Taking of protected fauna (ducks)                             |         | Case pending |
| Sect. 16(1)                     | 1   | Taking of protected fauna (Red-tailed Black Cockatoo)         |         | Case pending |
| Sect. 16A(1)                    | 2   | Possession of protected fauna (kangaroos)                     |         | Case pending |
| Sect. 16A(1)                    | 1   | Possession of protected fauna (kangaroos)                     | 50      | 29.10        |
| Sect. 25(1)(e)                  | 1   | Giving false name and address                                 | 100.00  | 54.10        |

| Section of Act<br>or Regulation           | No. | Description                                                       | Fines         | (Total)<br>Costs |
|-------------------------------------------|-----|-------------------------------------------------------------------|---------------|------------------|
|                                           |     |                                                                   | \$            | \$               |
| Sect. 25(1)(a)                            | 1   | Obstruction                                                       | 120.00        | 26.00            |
| Sect. 25(1)(d)                            | 1   | Refusal to give name and address                                  | 20.00         | 26.00            |
| Sect. 25(1)(f)                            | 1   | Use abusive language                                              | 20.00         | 26.00            |
| Reg. 46(b)                                | 4   | Interfering with flora on nature reserve                          | Case pending  |                  |
| Reg. 56(3)(a)                             | 3   | Exceeding bag limit for ducks                                     | 30.00         | 42.60            |
| DISTRICT NO. 9 - PINGELLY                 |     |                                                                   |               |                  |
| Sect. 16(1)                               | 1   | Taking of protected fauna (ducks)                                 | 40.00         | 19.10            |
| Reg. 56(3)(a)                             | 1   | Exceeding bag limit for ducks                                     | 10.00         | 19.10            |
| Reg. 56(3)(a)                             | 1   | Exceeding bag limit for ducks                                     | Case pending  |                  |
| Reg. 12(7)(b)                             | 1   | Avian Fauna held without appropriate license                      | Case pending  |                  |
| DISTRICT NO. 11 - BUSSELTON               |     |                                                                   |               |                  |
| Sect. 16(1)                               | 1   | Taking of protected fauna (kangaroos)                             | Case pending  |                  |
| Sect. 16A                                 | 1   | Possession of protected fauna (parrots)                           | Case pending  |                  |
| Sect. 17(B)(2)(b)                         | 2   | Unlicensed duck shooting                                          | 30.00         | 33.20            |
| Sect. 25(1)(d)                            | 2   | Refusal to give name and address                                  | 20.00         | 33.20            |
| Reg. 44(2)(3)                             | 1   | Camping and leaving rubbish on wildlife sanctuary                 | 50.00         | 29.10            |
| Reg. 56(3)(a)                             | 3   | Exceeding bag limit for ducks                                     | Cases pending |                  |
| DISTRICT NO. 12 - ALBANY                  |     |                                                                   |               |                  |
| Reg. 45(1)                                | 1   | Leaving articles which are non indigenous on a wildlife sanctuary | 20.00         | 19.10            |
| Reg. 12(7)                                | 1   | Avian fauna held without appropriate license                      | Case pending  |                  |
| DISTRICT NO. 13 - PERTH METROPOLITAN AREA |     |                                                                   |               |                  |
| Sect. 16(1)                               | 7   | Taking of protected fauna (kangaroos)                             | 440.00        | 133.70           |
| Sect. 16(1)                               | 1   | Taking of protected fauna (birds)                                 | 100.00        | 19.10            |
| Sect. 16(1)                               | 3   | Taking of protected fauna (geese)                                 | 140.00        | 44.30            |
| Sect. 16(1)                               | 3   | Taking of protected fauna (kangaroos)                             | Case pending  |                  |
| Sect. 16(1)                               | 4   | Taking of protected fauna (birds)                                 | Case pending  |                  |
| Sect. 16(1)                               | 1   | Taking of protected fauna (snakes)                                | Case pending  |                  |
| Sect. 16A(1)                              | 5   | Possession of protected fauna (kangaroos)                         | 220.00        | 91.50            |
| Sect. 16A(1)                              | 1   | Possession of protected fauna (wallabies)                         | 150.00        | 14.10            |
| Sect. 16A(1)                              | 4   | Possession of protected fauna (kangaroos)                         | Case pending  |                  |
| Sect. 16A(1)                              | 5   | Possession of protected fauna (birds)                             | Case pending  |                  |
| Sect. 17(2)(e)                            | 1   | Selling birds without authority                                   | 50.00         | 14.10            |

| Section of Act<br>or Regulation | No. | Description                                                | Fines        | (Total)<br>Costs |
|---------------------------------|-----|------------------------------------------------------------|--------------|------------------|
|                                 |     |                                                            | \$           | \$               |
| Sect. 17(2)(e)                  | 1   | Selling birds without authority                            | Case pending |                  |
| Sect. 25 (1)                    | 1   | Obstruction                                                | Case pending | 29.10            |
| Sect. 25(1)                     | 2   | Obstruction                                                | 80.00        | 19.10            |
| Sect. 25(1)(a)                  | 1   | Obstruction                                                | 30.00        | 19.10            |
| Sect. 25(1)(f)                  | 1   | Abusive language                                           | 50.00        | 19.10            |
| Reg. 6                          | 1   | No tags on kangaroo carcasses                              | 50.00        | 19.10            |
| Reg. 13(3)                      | 1   | Holding birds other than in class of<br>license applicable | 40.00        | 19.00            |
| Reg. 13(4)(a)                   | 2   | Bird Dealer not keeping return book up to<br>date          | 60.00        | 28.50            |
| Reg. 13(4)(b)                   | 2   | Bird dealer not keeping return book up to<br>date          | 70.00        | 17.10            |
| Reg. 13(6)                      | 2   | Obtaining fauna from unlicensed person                     | 60.00        | 28.60            |
| Reg. 46(b)                      | 1   | Interfering with flora on a nature reserve                 | 40.00        | 19.10            |
| Reg. 52                         | 2   | Taking fauna not fully fledged                             | Case pending |                  |
| DISTRICT NO. 14 - MANJIMUP      |     |                                                            |              |                  |
| Sect. 16A                       | 1   | Possession of protected fauna (birds)                      | 50.00        | 19.10            |
| Reg. 12(2)                      | 2   | Keeping avian fauna without an aviculturist's<br>license   | 70.00        | 38.20            |
| Reg. 54(10)                     | 1   | Taking birds by use of poisons                             | Case pending |                  |
| DISTRICT NO. 15 - ESPERANCE     |     |                                                            |              |                  |
| Reg. 44(2)                      | 1   | Camping on Wildlife Sanctuary                              | Case pending |                  |
| Reg. 46(g)                      | 1   | Using vehicle on wildlife sanctuary                        | Case pending |                  |

## VIII LICENSING

The keeping of or dealing in fauna not in its natural environment is controlled under the licensing system. During the twelve months ending June 30, 1979, the following licenses were issued:

### 1. SCIENTIFIC PURPOSES.- REGULATION 17

These licenses were issued mainly to official organisations or their employees. Ninety four persons were licensed to take fauna for general scientific purposes.

### 2. EDUCATIONAL AND PUBLIC PURPOSES - REGULATION 15

There were 40 licenses issued for the following purpose:-

|                        |    |
|------------------------|----|
| Care of derelict fauna | 10 |
| Collection and Study   | 10 |
| Study and Display      | 4  |
| Educational            | 4  |
| Photography            | 6  |
| Miscellaneous purposes | 6  |

### 3. AVICULTURE

#### (i) Licenses to Keep and Breed Fauna in Captivity - Regulation 12

5,390 licenses were issued, mainly to aviculturists.

#### (ii) Licenses to Deal in Avian Fauna - Regulation 13

97 were issued.

#### (iii) Licenses to Trap Avian Fauna - Regulation 11

15 were issued.

#### List of Parrots Trapped

|                             |      |
|-----------------------------|------|
| Twenty-eight                | 1735 |
| Western Rosella             | 603  |
| Western King                | 254  |
| Galahs                      | 56   |
| Sulphur-crested<br>Cockatoo | 1    |

List of Finches Trapped

|            |       |
|------------|-------|
| Longtail   | 4 850 |
| Masked     | 1 787 |
| Star       | 1 524 |
| Gouldian   | 1 888 |
| Blood      | 707   |
| Double Bar | 1 425 |
| Chestnut   | 777   |
| Pictorella | 632   |

4. GAME

Licenses to Take Game

96 quail shooters' licenses were issued.  
4 022 duck shooters' licenses were issued.

5. KANGAROOS

Licenses to Take Red Kangaroos for Sale -  
Regulation 6

Eighty licenses were issued throughout the year.

Licenses to Deal in Kangaroo Carcasses -  
Regulation 8

Eleven licenses were issued.

Licenses to Deal in Kangaroo Skins - Regulation 10

Fourteen licenses were issued.

Licenses to Process Fauna - Regulation 7

Twenty two licenses were issued to process kangaroos.

6. IMPORTS AND EXPORTS OF BIRDS AND MAMMALS

The Wildlife Conservation Regulations provide that no fauna shall be imported or exported from this State without a license.

(i) Export Interstate

Finches:-

|                       |       |
|-----------------------|-------|
| Blood                 | 164   |
| Chestnut              | 400   |
| Double Bar            | 918   |
| Gouldian              | 636   |
| Longtail (Blackheart) | 4 241 |
| Masked                | 1 146 |

|                          |      |
|--------------------------|------|
| Pictorella               | 322  |
| Star                     | 1120 |
| Cordon Bleu              | 6    |
| Cuban                    | 2    |
| Orange Breasted Way Bill | 3    |
| Painted                  | 4    |
| African Fire Finch       | 8    |

Parrots:-

|                             |      |
|-----------------------------|------|
| Twenty-eight (Port Lincoln) | 1324 |
| Rosella - Western           | 666  |
| Budgerygah                  | 720  |
| Indian Ringneck             | 50   |
| Western King                | 172  |
| Lovebirds - Peach-faced     | 326  |
| - Masked                    | 295  |
| Alexandra                   | 2    |
| Eastern Rosella             | 1    |
| Mulga                       | 1    |
| Nyassa                      | 29   |
| Fischers                    | 4    |
| Cockatiel                   | 5    |
| Scarlet-chested             | 2    |
| Red-collared Lorikeet       | 8    |
| Purple-crowned Lorikeet     | 6    |
| Superb                      | 1    |
| Elegant                     | 12   |

Cockatoos:-

|                      |    |
|----------------------|----|
| Red-tailed Black     | 11 |
| White-tailed Black   | 4  |
| Galah                | 19 |
| Short-billed Corella | 4  |
| Long-billed Corella  | 3  |
| Sulphur Crested      | 8  |
| Major Mitchell       | 1  |

Canaries:- 21

Other Species:-

|                        |     |
|------------------------|-----|
| Diamond Dove           | 5   |
| Senegal Turtle Dove    | 20  |
| Coot                   | 6   |
| Water Whistle Duck     | 2   |
| King Quail             | 15  |
| Plumed Tree Duck       | 3   |
| Black Winged Stilt     | 10  |
| Night Herons           | 12  |
| Chestnut Breasted Teal | 12  |
| Java Sparrow           | 210 |
| Brolgas                | 3   |
| Pelicans               | 2   |
| Kestrel                | 6   |
| White Ibis             | 12  |
| Magpie Geese           | 3   |

Export Interstate  
Mammals

|                         |   |
|-------------------------|---|
| Quokkas                 | 2 |
| Southern Bush Rat       | 6 |
| Pigmy Possum            | 1 |
| Fat-tailed Dunnart      | 2 |
| Northern Possums        | 2 |
| Brush Tail Rat Kangaroo | 2 |
| Spinnifex Hopping Mice  | 4 |
| Short Nose Bandicoot    | 3 |

Reptiles and Amphibians

|                                  |    |
|----------------------------------|----|
| Johnson Freshwater Crocodile     | 1  |
| Tree Dtella                      | 28 |
| Oblong Tortoise                  | 6  |
| Common Tiger Snake               | 1  |
| Ridgetailed Monitor              | 4  |
| Blackheaded Monitor              | 4  |
| Longtail Monitor                 | 3  |
| Brown Tree Snake                 | 2  |
| Blackheaded Python               | 2  |
| Water Python                     | 2  |
| Green Tree Snake                 | 1  |
| Frill Neck Lizard                | 2  |
| Mertens Water Monitor            | 1  |
| Javan File Snake                 | 2  |
| Children's Python                | 2  |
| Olive Python                     | 2  |
| Gillens Goanna                   | 2  |
| Spotted Tree Monitor             | 2  |
| Western Spiny Tailed Gecko       | 1  |
| Bynoos Gecko                     | 1  |
| Western Green and Gold Tree Frog | 1  |
| Spotted Thigh Frog               | 1  |
| Skinks                           | 10 |
| Tree Frog (Hybrid)               | 12 |
| Gecko                            | 2  |
| Legless Lizard                   | 6  |

(ii) Import Interstate

Birds

Finches:-

|                         |     |
|-------------------------|-----|
| African Firetail        | 34  |
| Aurora                  | 47  |
| Cordon Bleu             | 78  |
| Cuban                   | 30  |
| Blood Finch             | 4   |
| Blue Cap Way Bill       | 6   |
| Cut Throat              | 10  |
| Canaries                | 647 |
| Melba                   | 68  |
| Orange-breasted Waxbill | 142 |
| Orange-cheeked Waxbill  | 12  |
| Parrot Blue-faced       | 18  |
| Parrot Red-faced        | 34  |
| Plumhead                | 14  |
| Yellow Star             | 30  |

### Parrots:-

|                                 |      |
|---------------------------------|------|
| Alexandra (Princess)            | 38   |
| Barraband                       | 22   |
| Blue Bonnet                     | 14   |
| Budgerygah                      | 1052 |
| Cockatiel (Weero)               | 60   |
| Crimson Wing                    | 46   |
| Eastern King                    | 107  |
| Eclectus                        | 1    |
| Hooded                          | 23   |
| Mallee Ringneck                 | 26   |
| Rainbow Lorikeet                | 1    |
| Scaly-breasted Lorikeet         | 4    |
| Red-rumped                      | 22   |
| Rosella - Adelaide              | 10   |
| - Crimson                       | 13   |
| - Eastern                       | 16   |
| - Pale Headed                   | 8    |
| - Yellow                        | 6    |
| Scarlet-chested                 | 10   |
| Scarlet Chested/Turquoise Cross | 6    |
| Swift Parrot                    | 2    |
| Red Collar Lorikeet             | 1    |
| Alexandrine                     | 2    |
| Peach Face Lovebird             | 18   |
| Mask Lovebird                   | 10   |
| Turquoise                       | 3    |
| Twenty-eight                    | 10   |

### Birds Import General.

|                          |    |
|--------------------------|----|
| Bleeding Heart Pigeon    | 5  |
| White Headed Pigeon      | 1  |
| Cape Barren Geese        | 19 |
| Yellow Billed Spoonbills | 6  |
| Cattle Egret             | 4  |
| Glossy Ibis              | 4  |
| Eastern Whip Birds       | 5  |
| Wedge Tail Eagle         | 1  |
| Brown Quail              | 2  |

### Mammals

|                            |     |
|----------------------------|-----|
| Black stripe Wallaby       | 1   |
| Tammar Wallabies           | 120 |
| Flying Fox                 | 12  |
| Hairy Nose Wombat          | 3   |
| Antelopine Kangaroos       | 3   |
| Sugar Glider               | 1   |
| Eastern Wallaroo           | 2   |
| Crest Tailed Marsupial Rat | 6   |
| Eastern Bettong            | 5   |
| Browning Hopping Mouse     | 20  |
| Southern Bush Rat          | 20  |

### Cockatoos

|                      |     |
|----------------------|-----|
| Short-billed Corella | 170 |
| Galah                | 981 |
| Sulphur-crested      | 4   |
| Major Mitchell       | 9   |



## Reptiles

|                              |    |
|------------------------------|----|
| Johnson Freshwater Crocodile | 1  |
| Perentie                     | 1  |
| Common Tiger Snake           | 1  |
| Bobtail Skink                | 20 |
| Sand Monitor                 | 10 |

### (iii) Export Overseas

#### Birds:-

|                           |    |
|---------------------------|----|
| Galah                     | 19 |
| Budgerygah                | 3  |
| Banded Wren               | 5  |
| Long Bill Corella         | 9  |
| Cockatiel                 | 4  |
| Greater Red Cormorants    | 2  |
| Sulphur-crested Cockatoo  | 1  |
| Short-billed Corella      | 9  |
| Pelicans                  | 2  |
| Straw Necked Ibis         | 10 |
| Red Tailed Black Cockatoo | 5  |
| W.A. King Parrot          | 6  |
| Yellow Winged Honeyeater  | 8  |
| Painted Finch             | 8  |
| Crimson Finch             | 8  |
| Mountain Ducks            | 12 |
| Black Swan                | 2  |

#### Mammals:-

|                       |   |
|-----------------------|---|
| Pretty Faced Wallaby  | 1 |
| Western Grey Kangaroo | 6 |
| Red Kangaroo          | 6 |
| Western Euros         | 6 |
| Red Necked Wallaby    | 1 |
| Agile Wallabies       | 8 |
| Quokka                | 1 |

#### Reptiles and Amphibians:-

|                            |    |
|----------------------------|----|
| Pygmy Spiny Tailed Skink   | 1  |
| Thorny Devil               | 11 |
| Black Headed Monitor       | 4  |
| Western Spiny Tailed Gecko | 13 |
| Skink                      | 3  |
| Oblong Tortoise            | 6  |
| Sand Monitor               | 1  |
| Northern Snake Neck Turtle | 6  |
| Shingle Back               | 6  |
| Spiny Tail Gecko           | 12 |
| Legless Lizards            | 12 |
| Blue Tongue Lizards        | 35 |
| Dtellas                    | 6  |
| Dragon Lizards             | 6  |
| Leaf Tail Gecko            | 3  |
| Eastern Spiny Tail Gecko   | 1  |
| Bynoes Gecko               | 1  |
| Dwarf Bearded Dragon       | 1  |
| Knob Tail Gecko            | 1  |

|                                     |   |
|-------------------------------------|---|
| Broad Banded Sand Swimmer           | 1 |
| Burtons Snake Lizard                | 1 |
| Dugite                              | 1 |
| Slender Tree Frog                   | 6 |
| Western Green and Gold Bull<br>Frog | 2 |
| Guenthens Toadlet                   | 1 |

7. EXPORT LICENSES ISSUED TO OVERSEAS INSTITUTIONS

7 licenses were issued.

- (i) Cornell University, Ithaca, New York, U.S.A.
- (ii) British Museum, London, U.K.
- (iii) University of Paris, Paris, France (Two)
- (iv) Harvard University, Cambridge, Massachusetts, U.S.A.
- (v) University of Oxford, Oxford, England
- (vi) Michigan University, Ann Arbor, Michigan, U.S.A.

8. LICENSES TO KEEP FAUNA - REGULATION 16

30 issued in the year.

9. EMUS

License to Process Fauna - Regulation 7

5 licenses were issued to process Emu eggshells.

## IX LEGISLATION

### 1. WILDLIFE CONSERVATION ACT AMENDMENTS

The Wildlife Conservation Act Amendment Act came into effect from August 1, 1978. The amendments mainly dealt with and were consequential to the amendment of the definition of fauna as described in the Act. No other amendments to the Act were proclaimed this year.

### 2. WILDLIFE CONSERVATION REGULATIONS

During the year amendments to the Regulations were gazetted on July 21, 1978 (*Government Gazette* No. 52) August 11, 1978 (*Government Gazette* No. 56) and March 16, 1979 (*Government Gazette* No. 16). The amendments related to species of avian fauna and the conditions under which they may be kept, the issue of oological licenses, nature reserves and the increasing of fees for import and export of fauna. Fees were also increased for licenses to take Kangaroos for Sale (\$20.00), Licenses to Deal on Kangaroo Carcasses (\$20.00), Licenses to Transport Kangaroo Carcasses and Skins (\$5.00), Licenses to Deal in Skins (\$40.00), Licenses to Farm and Breed Fauna for Sale and Commercial Display (\$100.00) and Licenses to take Game (Quail) (\$5.00).

## X RADIO COMMUNICATIONS

Maintenance was carried out on the majority of Single Side Band radios fitted in mobile units and patrol and research vessels in service with the Department.

During the year a new transmitting tower equipped with Helical whip antennae was erected at the Wanneroo main transmitting base station situated at the Western Australian Wildlife Research Centre.

The Head Office module wiring was converted to printed circuit boards.

Eleven new vehicle installations were completed during the year for Single Side Band mobiles and a number of new VHF and Single Side Band radio transceivers were purchased.

At present, there is an urgent requirement to replace the Single Side Band radio transceivers on the Department's research and patrol vessels.

The majority of maintenance on all units was carried out by the Radio Communications Officer.

## XI STAFF

### 1. ADMINISTRATION

The Wildlife Conservation Act is administered by Mr B.K. Bowen, Director of the Department of Fisheries and Wildlife and Chairman of the Western Australian Wildlife Authority; Mr A.J. Mearns, Secretary and Conservator of Wildlife, and Mr D.W. Arnold, Acting Administrative Officer of the Department of Fisheries and Wildlife and Executive Officer of the Western Australian Wildlife Authority, and clerical staff of the Department of Fisheries and Wildlife.

### 2. ENFORCEMENT

Wildlife Officers - New Positions Created - Nil

Retirements -

Nil

Resignation -

L. Moss, Wildlife Officer (Special Investigations)

Transfers

| <u>NAME</u> | <u>FROM</u>                   | <u>TO</u>                                 |
|-------------|-------------------------------|-------------------------------------------|
| M.O. Osborn | Metropolitan Wildlife Officer | Wildlife Officer (Special Investigation.) |
| G. Hanley   | Wildlife Officer Carnarvon    | Metropolitan Wildlife Officer             |
| K. Marshall | Wildlife Officer Mt. Magnet   | Wildlife Officer Carnarvon                |
| R. Piggott  | Trainee Wildlife Officer      | Wildlife Officer Mt. Magnet               |

|            |                                      |                               |
|------------|--------------------------------------|-------------------------------|
| M. Mahoney | Wildlife Officer<br>Kangaroo/Control | Relieving<br>Wildlife Officer |
|------------|--------------------------------------|-------------------------------|

Dispositions of Wildlife Officers June 30, 1979.

|        |                                         |               |
|--------|-----------------------------------------|---------------|
| Perth: | Chief Wildlife Officer                  | B. Carmichael |
|        | Supervising Wildlife<br>Officer         | A.R. Marshall |
|        | Senior Wildlife Officer                 | J. Wilson     |
|        | Metropolitan Wildlife<br>Officer        | G. Hanley     |
|        | Wildlife Officer<br>(Kangaroo Control)  | Vacant        |
|        | Wildlife Officer<br>(Flora)             | B. Haberley   |
|        | Wildlife Officer<br>(Flora)             | P. Roberts    |
|        | Wildlife Officer<br>Relieving           | M. Mahoney    |
|        | Wildlife Officer<br>Relieving           | J. Quinn      |
|        | Wildlife Officer<br>Trainee             | Vacant        |
|        | Trainee Wildlife<br>Officer (Temporary) | T. Walley     |
|        | Trainee Wildlife<br>Officer (Temporary) | P. Collins    |
|        | Trainee Wildlife<br>Officer (Temporary) | R. Fitzgerald |

Districts

|            |                  |             |
|------------|------------------|-------------|
| Wyndham    | Wildlife Officer | D. Noble    |
| Karratha   | Wildlife Officer | P. Pennings |
| Mt. Magnet | Wildlife Officer | R. Piggott  |
| Carnarvon  | Wildlife Officer | K. Marshall |
| Geraldton  | Wildlife Officer | D. Mell     |

|              |                  |                                                       |
|--------------|------------------|-------------------------------------------------------|
| Moorra       | Wildlife Officer | K. Miller                                             |
| Wongan Hills | Wildlife Officer | * R. Dear                                             |
| Pingelly     | Wildlife Officer | P. Lambert                                            |
| Waroona      | Wildlife Officer | R. Coughran                                           |
| Busselton    | Wildlife Officer | B. Masters                                            |
| Manjimup     | Wildlife Officer | J. Neal                                               |
| Albany       | Wildlife Officer | R. Smith + (Trainee<br>Wildlife Officer L.<br>Coyne.) |
| Esperance    | Wildlife Officer | I. Cooke                                              |
| Kalgoorlie   | Wildlife Officer | L. Silvester                                          |

\*On extended sick leave prior to retirement.

## XII EXTENSION AND PUBLICITY

Liaison with the media during the past year, kept the public informed on important matters relating to wildlife and habitat preservation in Western Australia.

Public involvement in wildlife conservation continues to expand. Written and verbal requests from teachers, students and the general public were met.

Demand by conservation associations, wildlife institutions and libraries in Australia and throughout the world for inclusion on the mailing list for Departmental Reports, Bulletins and Journals continued.

Departmental Reports and Bulletins on wildlife conservation published during the year were:-

Wildlife Research Bulletin No. 8

The Wildlife of some existing and proposed Nature Reserves in the Gibson, Little Sandy and Great Victoria Deserts, Western Australia.

Departmental Report No. 34

The Status of the Salt Water Crocodile in the Glenelg Prince Regent and Ord River Systems Kimberley, Western Australia.

Some Nature Reserves of the Western Australian Wheatbelt - an unpublished series

|         |                   |           |
|---------|-------------------|-----------|
| Part 6  | Merredin Shire    | B.G. Muir |
| Part 7  | Victoria Plains   | B.G. Muir |
| Part 8  | Dalwallinu Shire  | B.G. Muir |
| Part 9  | Moora Shire       | B.G. Muir |
| Part 10 | Coorow Shire      | B.G. Muir |
| Part 11 | Mt Marshall Shire | B.G. Muir |
| Part 12 | Koorda Shire      | B.G. Muir |
| Part 13 | Mukinbudin Shire  | B.G. Muir |
| Part 14 | Westonia Shire    | B.G. Muir |

Special booklets put out for information to the public were:-

"Two Peoples Bay Nature Reserve"

"Two Peoples Bay Nature Reserve, Self Guiding Trail"

"Aquatic Reserves" (under the Fisheries Act)



"Proposed Swan River Aquatic Reserves" (under the Fisheries Act)  
"Abrolhos Aquatic Reserve" (under the Fisheries Act)  
"Treatment of Waterbirds"

Stocks of brochures, leaflets and general student project material were maintained; several of these publications being updated and re-written.

The State Wildlife Advisory News Service Journal was published once during the last year. Various demands made upon the Extension and Publicity Office by organisations and members of the public, continued to increase the activities of the section and curtailed the regular publication of this quarterly Journal.

The 1978 Annual Report of the Department's Wildlife Conservation Branch and Western Australian Wildlife Authority was collated and published.

## XIII FINANCE

### 1. WILDLIFE CONSERVATION ACT

The demands on this Department to continually extend its involvement in areas of wildlife conservation, research and enforcement, and the requirement to maintain existing activities, require increased expenditure each year from the Consolidated Revenue Fund. This trend has continued in 1978/79.

### 2. FAUNA CONSERVATION TRUST FUND

A financial statement as at June 30, 1979 is shown overleaf.

FAUNA CONSERVATION TRUST FUND

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE PERIOD JULY 1, 1978 TO JUNE 30, 1979

| <u>RECEIPTS</u>                                    |                    |                                          | <u>PAYMENTS</u>    |
|----------------------------------------------------|--------------------|------------------------------------------|--------------------|
| Balance brought forward on July 1, 1978            | 47 431.72          | Nonalling (White Water) Lakes            | 600.00             |
| Game License Fees                                  | 20 304.00          |                                          |                    |
| Other (Interest etc.)                              | 1 321.44           |                                          |                    |
| Aboriginal Affairs Grants to Special Works Program | 30.00              | Balance carried forward at June 30, 1979 | 68 487.16          |
|                                                    | <u>\$69 087.16</u> |                                          | <u>\$69 087.16</u> |

NB Investments from this fund total \$22 525.00 and are lodged in R & I Savings Bank Account No. 35/94203

Payments for Lake Chittering and Nonalling (White Water) Lakes incorrectly met from Fisheries Research and Development Trust Fund, adjustment shown for period ending June 30, 1980, \$2 000.50.

July 26, 1979

A.J. HOLLIS  
ACCOUNTANT  
STATE HEALTH SERVICES

B.K. BOWEN  
DIRECTOR  
DEPARTMENT FISHERIES & WILDLIFE

