

DEPARTMENT OF  
FISHERIES AND WILDLIFE,  
108 ADELAIDE TERRACE,  
PERTH

# Western Australian Wildlife Authority

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

1978

## ANNUAL REPORT



NUMBAT OR BANDED ANTEATER  
(*Myrmecobius fasciatus*)

Western Australia




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, 1978, 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

I WESTERN AUSTRALIAN WILDLIFE AUTHORITY AND COMMITTEES

1. MEMBERSHIP

Names and Organisations

*ex officio* Members -

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

Mr H.B. Shugg - Conservator of Wildlife, Department of Fisheries and Wildlife

Mr B.J. Beggs - Conservator of Forests  
Deputy - Mr W.H. Eastman, Assistant Conservator of Forests

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

Appointed Members -

Dr J.W. Green - Botanist - Curator, W.A. Herbarium

Professor A.R. Main - Zoologist, University of W.A.

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

Dr B.R. Wilson - Head of Division of Natural Sciences, W.A. Museum

Mr N.A. Beeck - Farmer

Mr H.G. Hall - Farmer

Mr R. Aitken - Retired School Teacher

Executive Officer

Mr D.W. Arnold - Assistant 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 H.B. Shugg - Deputy Chairman - Conservator of Wildlife, Department of Fisheries and Wildlife  
Mr D.W. Arnold - Executive Officer - Department of Fisheries and Wildlife  
Mr N.A. Beeck - Authority Member  
Mr W.H.B. Eastman - Assistant Conservator of Forests  
Dr D. Kitchener - Curator of Mammals, W.A. Museum  
Dr A.A. Burbidge - Senior Research Officer, W.A. Wildlife Research Centre  
Mr N.L. McKenzie - Research Officer, W.A. Wildlife Research Centre

### Bird Committee -

Chairman - Mr H.B. Shugg - Conservator of Wildlife, Department of Fisheries and Wildlife  
Mr D.W. Arnold - Executive Officer - Department of Fisheries and Wildlife  
Dr G.M. Storr - Curator of Birds and Reptiles, W.A. Museum  
Dr D.L. Serventy - Zoologist  
Dr S.J.J. Davies - Officer in Charge, CSIRO, Division of Wildlife Research, Helena Valley  
Deputy - Mr I. Rowley  
Mr T. Spence - Director, South Perth Zoological Gardens  
Mr N.A. Beeck - Authority Member  
Mr H.G. Hall - Authority Member  
Mr A.R. Tomlinson - Chief Agriculture Protection Officer, Agriculture Protection Board  
Deputies - Mr A.J. Oliver  
Mr J. Long  
Mr J.R. Masters - Farmer (Ornithologist)  
Mr J.A.K. Lane - Research Officer, W.A. Wildlife Research Centre  
Mr B.A. Carmichael - Chief Wildlife Officer, Department of Fisheries and Wildlife - Vice Mr S. Bowler (Retired 25.5.78)

Flora Committee -

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

Mr H.B. Shugg - Conservator of Wildlife, Department of Fisheries and Wildlife

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

Mr R. Aitken - Retired Schoolteacher.

Mr A.J. Hopkins - Research Officer, W.A. Wildlife Research Centre

Mrs M. Blackwell - Botanist

Dr J. Green - Botanist - Curator, W.A. Herbarium

Dr N. Marchant - Botanist - W.A. Herbarium

Dr P.R. Wycherley - Director, Kings Park Board

Professor J.S. Pate - Officer in Charge, Department of Botany, University of W.A.

Mr B.J. Beggs - Conservator of Forests

Mr P. Hewitt - Forests Department

Mr R. Shaw - Main Roads Department

Secretariat

Mr L.W. Marrable, Mr A.J. Goadby and Mr G.E. Allen carried out the secretarial functions for the Authority and its various standing committees.

2. MEETINGS -

The Western Australian Wildlife Authority

The Authority met on five occasions.

Standing Committees

Reserves Committee - met on four occasions during 1977/78

Bird Committee - met on four occasions during 1977/78

Flora Committee - met on three occasions during 1977/78

## II THE FAUNA

### 1. NUMBER OF INDIGENOUS SPECIES OF:

	Numbers of Species				
	Recorded in W.A.	Pro- tected	Not pro- tected	Open Season	Rare or otherwise in need of special protection
Birds	464	450	14	21	35
Marsupials	61	60	1	3	21
Other Mammals	60	57	3	-	7
Reptiles	299	271	28	-	7
Amphibia	50	50	-	-	1
<b>TOTALS</b>	<b>934</b>	<b>888</b>	<b>46</b>	<b>24</b>	<b>71</b>

### 2. LIST OF UNPROTECTED INDIGENOUS SPECIES AS AT 30.6.78

#### 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 30.6.78

#### Birds

		<u>Government 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) 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- Wren	<i>Amytornis textilis</i>	"
Rufous Bristle-bird	<i>Dasyornis broadbenti</i>	"
Brown Bristle-bird	<i>Dasyornis brachypterus</i>	"
Lemon-breasted Flycatcher	<i>Microeca flavigaster</i>	"
White-browed (Buff- 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 Finch	<i>Lonchura flaviprymna</i>	"
Major Mitchell	<i>Cacatua leadbeateri</i>	"

Mammals

Barrow Island Euro	<i>Macropus robustus isabellinus</i>	"
Crescent Nail-tailed Wallaby	<i>Onychogalea lunata</i>	"
Spectacled Hare- Wallaby	<i>Lagorchestes conspicillatus</i>	"
Western Hare-Wallaby	<i>Lagorchestes hirsutus</i>	"
Banded Hare-Wallaby	<i>Lagostrophus fasciatus</i>	"
Brush-tailed Rock 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 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)Government  
Gazette

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 Mouse	<i>Notomys longicaudatus</i>	"
Dusky Hopping Mouse	<i>Notomys fuscus</i>	"
Stick-Nest Rat	<i>Leporillus conditor</i>	"
White-tipped Stick- Nest Rat	<i>Leporillus apicalis</i>	"
Shark Bay Mouse	<i>Pseudomys praeconis</i>	"
Gould's Native Mouse	<i>Pseudomys gouldii</i>	"
Shortridge's Native 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- 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 spilottus</i>	"

Amphibians

Round Frog	<i>Arenophryne rotunda</i>	"
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## 4. OPEN SEASONS

Gazetted

Open Seasons declared in 1977/78.

Finch Trapping Season - September 2 to November 15, 1977. 8.9.77

Management of Agile Wallabies (*Macropus agilis*). 13.8.76

Waterfowl Hunting Season - Kimberley, North-west and  
Eastern Land Divisions. January 1 to December 31,  
1978. 25.11.77

Existing Open Seasons -

Management of populations of Red Kangaroo (*Megaleia rufa*)  
and Euro (*Macropus robustus*) 17.4.70  
1.5.70

Hunting Season - Brown Quail (*Syngis ypsilophorus*) and  
Stubble Quail (*Coturnix pectoralis*).  
January 1 to June 30 each year. 25.6.71

Management of populations of Grey Kangaroo (*Macropus  
fuliginosus*). 23.7.71 &  
30.6.72

4. OPEN SEASONS (Cont'd)

Gazetted

Management of populations of Emus (*Dromaius novae-hollandiae*).

26.1.73

Management of Little Corellas (*Cacatua sanguinea*) -

in Kimberley Land Division -

4.5.73

in Shire of Coorow -

18.5.73

### III THE FLORA

The protection of flora has remained the responsibility of the Conservator of Forests. The Wildlife Conservation Act has been amended to provide the powers for the conservation of native flora to be carried out within the Wildlife Conservation Act. This amendment has yet to be proclaimed.



## 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

Year 30 June	Total Number	Area (ha)	Vested in the 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	977	8 260 014	429	7 888 563

3. SUMMARY OF NATURE RESERVES - JUNE 30, 1978.

As at June 30, 1977	946 reserves	7 520 872.2215 ha
New Reserves 1977/78	37 reserves	+739 167.2890 ha
Amendments 1977/78	41 reserves	-481.4845 ha
Cancelled reserves 1977/78	7 reserves	-329.3382 ha
Unrecorded reserve (Gazetted 20.7.73 - No. 32154)	1 reserve	+1.0051 ha
Corrections to reserve areas	8 reserves	+784.5181 ha
TOTAL	977 reserves	= 8 260 014.2110 ha

4. NATURE RESERVES VESTED IN WESTERN AUSTRALIAN WILDLIFE AUTHORITY - JUNE 30, 1978.

As at June 30, 1977	385 reserves	6 927 390 4729 ha
New reserves 1977/78	24 reserves	+734 971 7699 ha
Amendments 1977/78	27 reserves	+346.8260 ha
Existing reserves vested 1977/78	22 reserves	+225 904.8303 ha
Cancelled vestings	2 reserves	-50.2974 ha
TOTAL	429 reserves	= 7 888 563.6017 ha

5. NEW RESERVES 1977/78

NO.	NAME	AREA (ha)	VESTING	GAZETTED
21830	14 mile Brook	44.8847	W.A.W.A.	1.7.77
A.34720	Neale Junction	723,073 approx	W.A.W.A.	1.7.77
34761	Gingin Stock Route	65.3839	W.A.W.A.	15.7.77
30428	Tank Hill	592.0551	W.A.W.A.	29.7.77
34776	Neendojer Rock	2249.0636	-	29.7.77
34833	Jitarning Railway	12.9068	W.A.W.A.	26.8.77
34811	Benger Swamp	10.1172	W.A.W.A.	26.8.77
B.34944	Dolphin Island	3.2030	W.A.W.A.	14.10.77
30463	Baker's Junction	1324.2061	W.A.W.A.	11.11.77

NO.	NAME	AREA (ha)	VESTING	GAZETTED
35002	Yilgerin Rock	49.4728	W.A.W.A.	11.11.77
14209	Lake Baylemup	40.4686	Min. for W.S.S.D.	25.11.77
18730	-	292.4815	W.A.W.A.	25.11.77
35066	Alfred Cove	7.0000	W.A.W.A.	9.12.77
A.22519	Kondinin Lake	1687.8816	Kondinin Shire & W.A.W.A.	23.12.77
A.2738	Mealup Point	30.3514	W.A.W.A.	20.1.78
35134	-	578.8219	W.A.W.A.	3.2.78
35163	-	6.1614	-	10.3.78
35168	-	1058.6675	W.A.W.A.	10.3.78
12333	-	40.4686	W.A.W.A.	10.3.78
641	Yanganooka	40.4200	Min for W.S.S.D.	10.3.78
A.6549	Galamup Swamp	221.8360	W.A.W.A.	10.3.78
A.10733	Parkeyerring Lake	404.6856	-	17.3.78
35191	-	3.0741	-	23.3.78
18735	-	121.4057	Min. for W.S.S.D.	23.3.78
7504	Karakin Lakes	485.2181	Min. for W.S.S.D.	7.4.78
35217	Kirwan	70.1177	-	21.4.78
20258	Walburra	21.5545	W.A.W.A.	19.5.78
27289	-	673.8927	-	2.6.78
16346	-	44.6393	W.A.W.A.	2.6.78
20834	-	63.3333	W.A.W.A.	2.6.78
26792	-	1038.8609	W.A.W.A.	2.6.78
A.14739	Bokarup Swamp	146.0915	W.A.W.A.	16.6.78
19116	-	129.4994	W.A.W.A.	16.6.78
A.16305	Lake Hinds	1 235.2559	W.A.W.A.	16.6.78
A.9307	Mongelup Pool	39.1634	-	23.6.78
A.16031	-	39.7246	-	23.6.78
A.16568	-	22.1236	-	23.6.78

TOTAL: 37 New Reserves 739 167.2890

Total Area:

24 Reserves  
W.A.W.A. only 734 971.7699

The following correction was necessary to reserve data.

Unrecorded Reserve (No. 32154), Area 1.0051 ha Gazetted 20.7.73

6. OTHER CHANGES

(i) Amendments to Area 1977/78

NO.	NAME	VESTING	OLD AREA	NEW AREA	DIFFERENCE	DATE
14493	-	-	297.8582	297.6463	-0.2119	1.7.77
26668	Highbury	-	81.0241	16.9853	-64.0388	1.7.77
27487	Flat Rock	-	997.6133	1467.7863	+470.1730	1.7.77
A.25555	Tutanning	W.A.W.A.	2 047.5491	2 055.2404	+7.6913	1.7.77
1059	Ascot	Min. for Works	2 023.4280	2 021.4279	-2.0001	1.7.77
1998	-	Albany Shire	39.6162	37.6409	-1.9753	15.7.77 & 29.7.77
24486	Butty Harbour	-	14 565.0409	12 622.7944	-1 942.2465	15.7.77
14001	Kulin Road Reserve	W.A.W.A.	471.4588	488.9867	+17.5279	29.7.77
30305	-	W.A.W.A.	850.6794	1 716.6096	+865.9302	29.7.77
2275	-	-	5.1015	5.0889	-.0126	29.7.77
24072	Wurgabup	-	32.3749	48.5144	+16.1395	29.7.77
20262	Jilbadgie Rocks	W.A.W.A.	1 011.7141	1 020.8721	+9.1580	16.9.77
31781	Lancelin	W.A.W.A.	4574.0000	4561.9161	-12.0839	9.9.77
31675	Wanagarran	W.A.W.A.	9550.0000	9 283.9643	-266.0357	16.9.77
25809	Lake Powell	W.A.W.A.	186.1554	192.0107	+5.8553	14.10.77
A.1931	Warrinup Swamp	W.A.W.A.	258.9988	251.1525	-7.8463	14.10.77
26687	-	-	377.6450	303.2893	-74.3557	11.11.77
27349	Protheroe	W.A.W.A.	52.2044	67.8929	+15.6885	3.2.78
23366	-	-	336.9084	937.2260	+600.3176	3.2.78
31881	Panton	W.A.W.A.	179.5868	322.0868	+142.5000	17.2.78
A.27632	Nuytsland	W.A.W.A.	625 343.3676	625 347.4145	+4.0469	17.2.78
1059	Ascot	Min. for Works	2021.4279	1 861.4279	-160.0000	10.3.78
31636	Parry Lagoons	W.A.W.A.	12 589.0000	12 379.0000	-210.0000	10.3.78
A.27632	Nuytsland	W.A.W.A.	625 347.4145	625 343.6145	-3.8000	17.3.78



NO.	NAME	VESTING	OLD AREA	NEW AREA	DIFFERENCE	DATE
31904	Chatham Island	W.A.W.A.	101.0000	106.1895	+5.1895	7.4.78
30049	Michaelmas Island	W.A.W.A.	90.6496	91.9446	+1.2950	7.4.78
27614	Breaksea Island	W.A.W.A.	105.2183	102.9722	-2.2461	7.4.78
144	Mistaken Island	W.A.W.A.	10.7241	13.7096	+2.9855	7.4.78
32448	Mooradung	W.A.W.A.	630.4850	631.6727	+1.1877	21.4.78
B.32199	Seal Island	W.A.W.A.	8.0000	2.8226	-5.1774	5.5.78
A.24739	-	W.A.W.A.	40.4686	48.1460	+7.6774	19.5.78
29251	Miscl. Islands	W.A.W.A.	34.6006	40.3224	+5.7218	2.6.78
	(See Reserve Sheet)					
A.10733	Parkeyerring Lake	-	404.6856	684.4903	+279.8047	2.6.78
29252	Buller, Whittell, Green Islands	W.A.W.A.	6.0703	8.4175	+2.3472	16.6.78
29253	Cervantes Islands	W.A.W.A.	4.3706	4.0000	-0.3706	16.6.78
B.29255	Sandland Island	W.A.W.A.	1.4569	1.5490	+0.0921	16.6.78
29256	Fisherman Islands	W.A.W.A.	1.8210	5.2419	+3.4209	16.6.78
29257	Essex Rocks	W.A.W.A.	0.6880	7.2580	+6.5700	16.6.78
30463	Baker's Junction	W.A.W.A.	1324.2061	1 073.7069	-250.4992	16.6.78
7765	-	-	47.2248	42.9347	-4.2901	16.6.78
A.8431	-	-	478.7431	533.1288	+54.3857	23.6.78
The following corrections were necessary to reserve data:						
8428	-	-	Not surveyed	68.3919	+68.3919	Corrected
8429	-	-	318.0829	182.5132	-135.5697	Corrected
A.8430	-	-	Not surveyed	318.0829	+318.0829	Corrected
A.8431	-	-	Not surveyed	478.7431	+478.7431	Corrected
8434	-	-	2255.7177	2253.9474	-1.7703	Corrected
16867	-	-	243.2789	283.2789	+40.0000	Corrected
976	-	-	40.4686	58.2747	+17.8061	Corrected
A.22576	-	Kalamunda Shire	4.0115	2.8456	-1.1659	Corrected
			Total -		=	-3007.1902
			Total +		=	+2 525.7057
			Total area amended		=	-481.4845
			Total 27 W.A.W.A. Reserves only amended		=	+346.8260

(ii) Existing Reserves Vested 1977/78

NO.	NAME	VESTING	AREA	DATE
23171	Pardelup	W.A.W.A.	607.0285	1.7.77
21830	14 Mile Brook	W.A.W.A.	44.8847	29.7.77
25919	Copley Dale	W.A.W.A.	5.4127	5.8.77
26302	-	Ravensthorpe Shire	41.2703	12.8.77
17732	North Bungulla	W.A.W.A.	92.9613	30.9.77
26125	-	W.A.W.A.	63.6519	25.11.77
13217	-	W.A.W.A.	24.2811	25.11.77
18739	-	W.A.W.A.	1 497.3369	25.11.77
23141	-	W.A.W.A.	60.7028	25.11.77
30299	-	W.A.W.A.	170.8026	25.11.77
24049	Jilbadji	W.A.W.A.	208 866.3623	9.12.77
29806	-	W.A.W.A.	2 891.8229	23.12.77
19118	-	W.A.W.A.	207.7428	20.1.78
27349	-	W.A.W.A.	67.8929	3.2.78
31424	-	W.A.W.A.	2 936.3738	10.2.78
31881	Panton	W.A.W.A.	322.0868	17.2.78
25984	-	W.A.W.A.	47.4038	10.3.78
29128	-	W.A.W.A.	1 162.2521	23.3.78
30626	Gingilup Swamps	W.A.W.A.	2 807.2314	21.4.78
25681	-	W.A.W.A.	1 601.8900	5.5.78
A.24739	-	W.A.W.A.	48.1460	19.5.78
A.331	-	W.A.W.A.	129.4994	16.6.78
34776	Neendojer Rock	W.A.W.A.	2 249.0636	16.6.78

TOTAL = 23 Reserves Area = 225 946.1006

TOTAL 22 W.A.W.A. Reserves = 225 904.8303

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

NO.	NAME	VESTING	AREA (ha)	GAZETTED
A.34585	Point Spring	W.A.W.A.	302.9906	23.12.77
B.144	Mistaken Island	W.A.W.A.	13.7096	7.4.78
B.27614	Breaksea Island	W.A.W.A.	102.9722	7.4.78
B.30049	Michaelmas Island	W.A.W.A.	91.9446	7.4.78
B.31904	Chatham Island	W.A.W.A.	106.1895	7.4.78
B.32199	Seal Island	W.A.W.A.	2.8226	5.5.78
B.29255	Sandland Island	W.A.W.A.	1.5490	16.6.78
A.32419	Lake Gore	W.A.W.A.	792.4299	16.6.78

TOTAL Made Class "A" = 2 reserves = 1 095.4205

TOTAL Made Class "B" = 6 reserves = 319.1875

TOTAL = 1 414.6080

(iv) Existing Reserves, Change of Purpose 1977/78

NO.	NAME	VESTING	FROM	TO	AREA	GAZETTED
23171	Pardelup	W.A.W.A.	Prot. of Flora & Fauna	Cons. of Flora & Fauna	607.0285	1.7.77
24072	Wurgabup	-	Flora	Cons. of Flora & Fauna	48.5144	29.7.77
25919	Copley Dale	W.A.W.A.	Cons. of Flora & Wildlife	Cons. of Flora & Fauna	5.4127	5.8.77
21830	14 Mile Brook	W.A.W.A.	Cons. of Flora & Wildlife	Cons. of Flora & Fauna	44.8847	29.7.77
13217	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	24.2811	25.11.77
18739	Millbrook	W.A.W.A.	Prot. of Flora	Cons. of Flora & Fauna	1497.3369	25.11.77
23141	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	60.7028	25.11.77
30299	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	170.8026	25.11.77
29806	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	2 891.8229	23.12.77
19118	-	W.A.W.A.	Timber & Cons. of Flora & Fauna	Cons. of Flora & Fauna	207.7428	20.1.78
27349	-	W.A.W.A.	Prot. of Native Veget- ation	Cons. of Flora & Fauna	67.8929	3.2.78
25984	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	47.4038	10.3.78
A.331	-	-	Prot. of Native Flora	Cons. of Flora & Fauna	129.4994	17.3.78
29128	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	1 162.2521	23.3.78

cont'd...



NO.	NAME	VESTING	FROM	TO	AREA	GAZETTED
25681	-	W.A.W.A.	Cons. of Flora & Timber (Sandal- wood)	Cons. of Flora & Fauna	1 601.8900	5.5.78
A.32419	Lake Gore	W.A.W.A.	Cons. of Flora & Fauna	Water & Cons- of Flora & Fauna	792.4299	16.6.78
A.11144	Boyagin Rock	W.A.W.A.	Park- lands & Picnic Grounds	Rec. & Cons. of Flora & Fauna	121.8104	23.6.78

(v) Existing Reserves Cancelled 1977/78

RESERVE NO.	VESTING	AREA (ha)	DATE GAZETTED
26023	-	10.1171	14.10.77
22975	-	76.8903	11.11.77
31670	-	144.3463	23.3.78
28198	-	1.8969	2.6.78

TOTAL = Reserves Cancelled, area = 233.2506

(vi) Existing Reserves Vestings Cancelled 1977/78

RESERVE NO.	VESTING	AREA (ha)	DATE GAZETTED
21830	W.A.W.A.	44.8847	29.7.77
25919	W.A.W.A.	5.4127	5.8.77

(vii) Existing Reserves Purpose Changed to Outside Interests 1977/78

RESERVE NO.	PURPOSE CHANGED TO	AREA	DATE GAZETTED
23286	National Park	87.4121	11.11.77
A.25270	Caravan Park & Camping	5.2761	7.3.78
A.23904	Recreation	3.3994	7.3.78

## V RESERVE MANAGEMENT

### 1. FIRE CONTROL

#### (i) FIRE BREAK CONSTRUCTION AND MAINTENANCE

Fire breaks totalling 561.5 km were constructed on 39 nature reserves. Details are as follows:

Reserve No.	Name	Shire	Distance (km)
23171	Pardelup	Plantagenet	12
22841	-	Plantagenet	5
A.25798	Pt. of Unicup Lake	Cranbrook	6
12398	Pt. of Lake Mears	Brookton	5
26680	Lake Noobijup	Cranbrook	6
26677	Kulunilup Lake	Cranbrook	12
26682	Pinticup Swamp	Cranbrook	11
26681	East Pinticup Swamp	Cranbrook	6
26679	Lake Pindicup	Cranbrook	10
29601	Yarnup Swamp	Cranbrook	2
26678	Kodjinup Swamp	Manjimup	14.5
31357	Maringup	Manjimup	7
33455	Cowerup Road	Cranbrook	6
A.687	Namalcatching Well	Dowerin	13
A.30897	Wanjarri	Leonora	80
19900		Toodyay	4
30591	St. Ronan's Well	York	6
A.15107	Lake Pleasant View	Albany	8
19128	Pt. of Boyagin	Brookton	3
21981	Wambyn	York	14
22096		Toodyay	13
31424		Ravensthorpe	23
31880	Lake Muir	Manjimup	35.0
A.26763	Burngup	Lake Grace	26
29018	Lake Bryde Group)	Lake Grace)	
29019	)	Lake Grace)	
29020	)	Kent )	
29021	)	Kent )	
29022	) -	Kent ) -	155
29023	)	Kent )	
29024	)	Lake Grace)	
29025	)	Lake Grace)	
29026	)	Kent )	
26234	Tinkelup Reserve	Albany	23
27157	Cheyne Road	Albany	9.5
A.18803	Chinocup	Kent	13
2323	Mingenew	Mingenew	11.5
26381	Quartimine	Kent	11
20046	-	Kent	11

Firebreak maintenance was carried out on 43 nature reserves over 968.2 km of breaks. Contractors completed 538.6 km and Departmental staff 429.6 km.

(ii) PRESCRIBED BURNING

Two further compartments were burnt at Two Peoples Bay.

Burning programmed under the Kojonup fire plans was partly successful.

Local bushfires brigades undertook roadside burning alongside Ellen Brook Nature Reserve (A.27620) and general burning in reserves 21056, and 12398 (Lake Mears).

(iii) WILDFIRE SUPPRESSION

The Department was called to attend fires on nature reserves on 11 occasions. Nine of these calls were to Thompson Lake Nature Reserve (A.15556).

Fires spread by strong winds from cyclone 'Alby' resulted in a further 8 calls in one day, although the fires concerned by-passed all except the Avon Valley Nature Reserve (A.30191). Here, three separate fires burnt simultaneously in particularly rugged terrain. Seven days work was required to make these fires safe.

2. OTHER PROJECTS

(i) A new crossing over the Cobline River was constructed at the north end of Cobline Flats Nature Reserve (A.25134).

(ii) A working party of 3 volunteers, plus two departmental officers, travelled to Wanjarri Nature Reserve (A.30897) in May 1978 to commence a cleaning up and fire hazard reduction programme around the homestead.

Several old humpies were demolished and portion of the rubbish was buried in seven large tractor excavated pits, each of approximately 6-8 m<sup>3</sup>.

A substantial volume of rubbish still remains, however, and further work is required to complete the clean up.

### 3. RESOURCE MANAGEMENT

The year's activities have been aimed at resolving land use conflicts associated with some nature reserves of the south-west.

At Busselton in August 1977, a seminar was held on the topic of the Busselton Shire wetlands and Departmental policies were introduced to the public. Those policies are the subject of a Departmental publication compiled by the Waterbird Research group of the Department of Fisheries and Wildlife.

Projects which are a continuing responsibility are: assessment of land use capability of Lake Dumbleyung Reserve; management of tourist use of Woody Island in the Recherche Archipelago Reserve; aerial photographic monitoring of the vegetative condition of the Wongan Hills and the purchase of Bengier Swamp for wetland reserve purposes. At present, almost 80% of the 600 ha Bengier Swamp has been purchased.

The feasibility study to rehabilitate the salt affected northern Arthur River wetlands is continuing. The Northern Arthur River Wetlands Rehabilitation Committee has concentrated most of its attention on Lake Toolibin, the only significant fresh water wetland nursery that remains in the Wheatbelt.

A salt and water budget is to be calculated for Lake Toolibin. Automated recording equipment to collect necessary weather and water quality data has been installed. Lack of rainfall to date has delayed progress of this study.

It has however been determined that the depth to the water table from the floor of Lake Toolibin averages as little as 0.5 metres. Depth to the water table varies away from the lake, but is known to be ca 0.6 metres deeper under bushland than under pasture.

It is also known that the local underground water is almost as salty as sea water.

The committee members agree that the main reason for the high quality of water in Lake Toolibin whenever it fills is because much of the lake's immediate surroundings have remained vegetated. In October, 1977, 175 ha of privately owned land in the lake's catchment were chained. It was a prelude to the land's complete clearing for agricultural purposes. If clearing had been completed, the local water table would have risen and would have intersected Lake Toolibin's floor, as well as other parts of the landscape. The lake would then have been destroyed as a fresh water wetland nursery.

As a matter of urgency, the committee implemented a survey of all local environmental features such as geology, soils, underground water, land-use history of the lake's catchment and flora and fauna. The data thus collected were a basis of a submission to the Parks and Reserves Committee of the Department of Conservation and Environment. The submission resulted in the crucial and successful purchase by the Department of Fisheries and Wildlife of the privately owned chained land, as well as 40 ha of other bushland. Such lands are being set aside to complement the Lake Toolibin nature reserve, and are being revegetated in liaison with the Forests Department. In accordance with that Department's prescription, all fallen timber was removed from the chained land just prior to the commencement of the winter rains in June. Vegetative regeneration is now prolific and the status of Lake Toolibin Reserve has been maintained. The stage is now set for further successful rehabilitation of the northern Arthur River wetlands.

As an adjunct to the above study, the Department of Lands and Surveys has completed aerial photography in black and white, colour and false colour, of approximately 30 km<sup>2</sup> of the northern Arthur River system.

## VI WILDLIFE RESEARCH

### 1. BIOLOGICAL SURVEY

The ongoing biological survey of the desert regions of Western Australia continued. In August 1977 biological collections were made in the Great Sandy Desert at Dragon Tree Soak, in the McLarty Hills and along the Kidson Track. A further record of the Marsupial Mole (*Notoryctes typhlops*) was one of the more interesting findings. A paper on the botany and vertebrates of these sites is in preparation. A Wildlife Research Bulletin on previous desert surveys was submitted for publication, as was a paper on the conservation status of mammals in the Warburton Region.

Biological surveys were commenced in the Eastern Goldfields; three visits (October 1977, February 1978 and May 1978) to an area of vacant Crown land south-east of Norseman have been made. As well as collecting substantial data on the vegetation and vertebrate fauna of the area, a variety of survey techniques were tested relevant to an integrated biological survey of the entire Goldfields region. The planned regional work is to be carried out in conjunction with the W.A. Museum, the National Parks Authority and the W.A. Herbarium.

Work at Wandana (near Yuna) was finalized and a report submitted for publication.

The first of two field trips to an area of vacant Crown land at Nerren-Nerren was undertaken in April 1978. This, as with the work near Norseman and near Yuna, was in response to a recommendation by the Environmental Protection Authority in its report "Conservation Reserves for Western Australia".

Results of biological surveys previously carried out in the Kimberley are in various stages of preparation.

### 2. ANIMAL ECOLOGY

#### (i) KANGAROO MANAGEMENT PROGRAMMES

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

An officer of the Australian National Parks and Wildlife Service was accompanied and assisted during a weeks visit in November 1977 to gain first hand knowledge of the State's kangaroo management programme.

Detailed information was supplied to the Australian National Parks and Wildlife Service to assist in their preparation of a national response to a series of questions posed by the United States Fish and Wildlife Service. It is hoped that this reply might assist in a reassessment of the current ban on the import of kangaroo products into the United States of America.

Assistance was also provided to the Commonwealth Department of Overseas Trade in respect of their local enquiries into prospects for redevelopment of an export market in game meat.

Continuation into 1978 of the prevailing drought, and continuation of kangaroo harvesting in accordance with sound rangeland conservation practice led to reduction in red kangaroo stocks.

Rainfall in pastoral areas since February 1978 resulted in general dispersal of these kangaroos. Stock reduction and the subsequent dispersal of field populations has adversely affected the economics of the kangaroo industry.

Management problems arising in the past year have accentuated the difficulties in achieving an acceptable balance between different sectional demands in this situation of multiple land use in an arid area.

(ii) ROCK WALLABIES

Populations of Rock Wallabies (*Petrogale lateralis*) persist on Nature Reserves in the wheatbelt area south of Kellerberrin. A project was initiated in April 1978 for the purpose of obtaining sufficient information to formulate a management plan.

The study area consists of four large granite outcrops. Each outcrop has been surveyed and mapped for wallaby populations. To date wallabies have been recorded at 10 sites, but many of the sites carry, at most, only 2-3 animals. Moreover, there are numerous sites that seem to be suitable habitats for wallabies, but no sightings have been made nor have fresh scats been found.

Only one juvenile rock wallaby has been observed.

Information on Departmental files indicates that rock wallabies were more numerous in the past and a similar picture emerges when local residents are interviewed. In certain areas where rock wallabies were once frequently observed, repeated surveys have failed to sight an animal.

At this stage, it is too early to explain the causes of the population decline. Foxes and feral cats are abundant on the reserves and both are known to predate rock wallabies (particularly the juveniles at heel; W. Langdon, pers comm). Rock wallaby skeletal remains have been recovered from fox dens and material consisting of *Petrogale* hair and teeth have been found on the firebreak of one reserve. Such evidence is circumstantial and may represent carrion feeding, but the evidence seems sufficiently strong to warrant further investigations on the possible predatory role of foxes and the need for control. With regard to this point, a baiting programme has been implemented by Vermin Control Officers of the Agriculture Protection Board.

Additional studies are underway to determine the dietary preferences of rock wallabies and their nutritional status. Rabbits are moderately abundant and their dietary habits are being examined to determine whether there is competition for food. Radio-telemetry equipment is on order.

(iii) BANDED HARE WALLABY REINTRODUCTION PROGRAMME - DIRK HARTOG ISLAND.

Wallabies on the island were checked four times over the period January - June 1978.

The second stage of the release programme was commenced during June, 1978, with the opening of breaches in the fence surrounding the experimental enclosure (below).

Five (2♂♂, 3♀♀) of the six (3♂♂, 3♀♀) adult wallabies released on May 1, 1977 into the four hectare low security experimental enclosure located near the southern end of the island had then survived nearly 14 months without supplementary food or water being provided. Two of these three females also reared pouch young to independence during 1977 and all three again had large dependent young at the time the second stage release was initiated. A further two females available from the yard colony established



in 1974 were added to the group prior to breaching the fence in an attempt to compensate for the absence of any females among the young produced so far by the original three females within this group.

It is also considered desirable to have more adult females added to this group so as to further increase the population of females. As no suitable individuals are now available from the yard colony, the five or six animals required will be obtained from the White Beach area on Dorre I., the source of all animals involved in this experiment to date. These will be obtained before the end of August, 1978.

An attempt to eliminate feral cats from this island was also made during February, 1978, in view of the circumstantial evidence pointing to their adverse effect on insular wallaby populations.

Baiting was the method selected, due to non-availability of other potentially more specific techniques, and '1080' was selected as the poison in view of the generally higher tolerances of birds and reptiles for this poison, in contrast to the cats, and the knowledge that indigenous mammal species in south-western Australia also appear to have increased tolerances for this compound.

Forty-five thousand specially formulated baits containing compound '1080' were laid by air over the whole island over two days.

Rainfall overnight following the first day's bait laying almost certainly reduced the potential effectiveness of the attempt, while heavy rain (*ca.* 60 mm) within 6 weeks of bait laying would also have rendered any remaining baits still containing '1080' completely ineffective.

Live cats still remain on the island, but considerable uncertainty arises in attempting to assess the results of this exercise.

The situation is currently being reassessed.

(iv) DUGONG

An intensive reconnaissance of the Shark Bay area was undertaken during June 1978 in association with Professor Paul Anderson of the University of Calgary in order to assess feasibility of undertaking intensive field studies in this area.

Prospects for a major study being commenced in June 1979 now appear most encouraging.

Observational data relating to movements of dugong within the Bay, and abundance are being collected by the local Fisheries Inspector in liaison with fishermen.

(v) WATERFOWL RESEARCH AND GAME MANAGEMENT

The following programme of on-going and new projects was pursued during the past year.

- (a) Aerial and ground surveys of major lake systems in the South-West during October and November. Data from these surveys were compiled, analysed and presented in the 1977-78 Waterfowl and Wetland Review. The report, which included the recommendation that "no season be declared for the taking of wild duck", was submitted to the Western Australian Wildlife Authority. The recommendation was unanimously accepted by the Authority.
- (b) Controlling the flow and water level of Lake Chittering by means of the check structure completed in March 1977. The check structure was installed to reinstate the lake to its former regime after deepening of the outlet channel by a property owner had considerably reduced the holding capacity. The success of this project was exemplified during the first year of operation when following a winter of below average rainfall and a summer of extreme temperatures, the lake contained water until March 1978. During this period the lake provided a valuable breeding and refuge habitat for a large and diverse population of waterbirds.
- (c) \* Monitoring of water qualities at Tordit-Gurru Lagoon, Byenup Lagoon and Poorginup Swamp. Baseline data are being compiled on these wetlands which are under application to lease for mining.  
  
\* Monitoring and liaison in relation to current peat mining operations at Cowerup Swamp to ensure compliance with the conditions of the lease.
- (d) Installing of depth gauges in selected wetlands of the South West to provide accurate water level fluctuation data. This project was

commenced in December 1977 with twenty-nine (29) gauges being installed to the 30th June 1978.

- (e) Culling exotic species of duck from metropolitan lakes. Because of the threat these birds pose to the native species, a programme of complete removal has been adopted. A survey conducted in January 1978 revealed that at least two hundred and sixty (260) exotic ducks inhabited the metropolitan lakes. Of these, one hundred and thirty (130) had been disposed of to the 30 June 1978. An unknown number also died over summer from the effects of botulism and algal poisoning.

Other duties included:

Liaising with the Public Works Department (Special Projects Branch) who are preparing a report on a proposal to restore the water retention potential of Lake Nonalling.

A survey of "Qualinup Park", Kent Location 715, in June 1978 to evaluate the property for purchase as a nature reserve.

Preliminary preparation for the buoying of amended ski area boundaries at Lake Dumbleyung. Completion of this project has been deferred until the lake contains a sufficient depth of water to permit the launching of a work boat.

Providing information to members of the public with regard to duck band recoveries and treatment of waterfowl suffering from the effects of botulism and algal poisoning.

(vi) ESTUARINE BIRDLIFE

- (a) Australian Pelican

Checks on nesting activity of all known Pelican breeding colonies south of the Kimberley were continued in 1977 and 1978.

Leg banding was carried out at one colony at Shark Bay in August and live trapping of free-flying birds was continued throughout the south west during 1977-78.

More than 900 runners and 800 free-flying Pelicans have now been banded since 1974. Among the many recoveries have been two birds at Albany and Augusta originally

banded as runners at the Fortescue River in 1976.

Wing tagging of free-flying birds in the south west was continued giving a total of 130 birds tagged since 1976.

Public response has been good, particularly from those individuals possessing Pelican Wing Tag sighting books. Numerous reports have been received of movements throughout the State. The most notable being C4 yellow, originally tagged at Peel Inlet and sighted at Broome several months later.

(b) Transequatorial migratory waders.

The banding programme at Pelican Point (Swan River) was continued. However, due to increased public use of the foreshore, banding was halted in November. Action has been taken to reduce conflict due to the activity of prawners and others within the mist netting area.

(c) Habitat Reserves

During the year Alfred Cove and the adjoining shallows and foreshore of Pt. Waylen were gazetted as a Flora and Fauna Reserve (Reserve 35066). This culminates many years work to preserve the most important area of waterbird habitat on the Swan and Canning Rivers.

(vii) CROCODILES

During July 1977 a survey of Salt-water Crocodiles was conducted in some river systems of the north-west Kimberley. This work was carried out from the University of Sydney's 21m research vessel "*The Harry Messel*". Personnel were from the University and from the W.A. Wildlife Research Centre. A report on this work has been published.

The survey revealed that Salt-water crocodile numbers remain very low following the intensive hunting which took place during the 1950's and 60's. It is clear that there are far too few crocodiles in the rivers surveyed to allow culling in the immediate future.

Further work will take place during 1978/79.

(viii) WESTERN SWAMP (SHORT-NECKED) TORTOISE

Work on the Western Swamp Tortoise continued. During the 1977 winter 9 animals were captured at Twin Swamps Nature Reserve and 3 at Ellen Brook Nature Reserve. The latest estimates of population size for 1976 is  $12 \pm 5$  at Twin Swamps and  $8 \pm 3$  at Ellen Brook. Because of the difficulty in catching animals and hence the low proportion caught in any one year, these figures are probably underestimates of numbers remaining. However, it is clear that the situation is grave.

Research work indicates that the decline in numbers which has occurred at Twin Swamps Nature is due mainly to the recent series of poor winters, resulting in the swamp being filled for only a few weeks instead of the typical 5 to 6 months. Finance is being sought to supplement the water in one swamp from a bore.

Poison baiting has been stepped up in an effort to control dogs, foxes and cats.

(ix) MANGROVE BATS

An inventory survey of bats using mangrove communities was commenced in 1977. To date, mangroves in Exmouth Gulf, at Point Samson, Cape Keraudren, Cape Bossut, Crab Creek, Broome, on the Dampier Peninsula, in the Barlee Impediment, George Water, Saint George Basin, Port Warrender and Cambridge Gulf have been sampled.

A variety of megachiroptera and microchiroptera have been recorded including a number of species previously considered rare or little known in Western Australia. Work is continuing.

3. PLANT ECOLOGY

(i) FIRE ECOLOGY

A further two blocks of the strategic fire buffer at Two Peoples Bay Nature Reserve were burnt in September 1977. Small monitoring plots were established in both of these blocks. A harvest of selected quadrats in the 1976 fire plot was made; this material has been sorted and weighed. Two prominent shrub species, *Dryandra sessilis* and *Lysinema ciliatum* are regenerating from seed only, while other shrub and herb species are regenerating from both rootstocks, etc., and from seed.

It has been found during work on central wheatbelt reserves that fire history records are inadequate for use in the study of long term post fire changes in the vegetation. A technique for aging plant populations in study areas has been devised and tested. The technique involves the comparison of population structural parameters with standards established from extensive field sampling in areas with known fire histories.

(ii) ENEABBA RESERVES

A detailed ecological survey of a 20 km<sup>2</sup> area south of Eneabba was undertaken in conjunction with an officer of the W.A. Herbarium. The survey area encompassed mineral leases presently being operated by two heavy mineral sand mining companies, portions of the South Eneabba nature reserves, and adjacent vacant Crown land.

Survey data have been prepared for detailed analysis.

(iii) DORRE ISLAND

A four-man party spent two weeks working on the island during August 1977 (12th - 26th). The party worked from a field camp at White Beach from 12th - 20th, and then moved to Quoin Bluff for the remainder of the visit.

Work was concentrated on more detailed and quantitative sampling and photography of vegetation along established transect lines, checking and rephotographing of established plots and exclosures, and establishment of some further large experimental exclosures and matched control plots to augment the coverage already provided by the small plots and exclosures established late 1973.

Several days were spent in checking vegetation stands at various points on the island in order to obtain data relevant to eventual preparation of a vegetation map for the island.

Extensive plant collections were also made. Part of this material is to be used as the basis of a field herbarium. One hundred and twenty-eight species of flowering plants have now been collected from Dorre Island.

The island was rephotographed in colour at 1:20 000 scale in November 1977 to update available photographic coverage. Experimental areas were also photographed at 1:5 000 scale at this time to provide more detailed information for preparation of large scale transect maps, in addition to the general vegetation mapping of the whole island at a smaller scale.

Work on faunal responses to the changes in vegetation has been restricted to date, but observational data indicate a progressive increase in Banded Hare Wallaby (*Lagostrophus fasciatus*) numbers in the Quoin Bluff area where some extensive unburnt areas remained post-fire.

In contrast, populations of the Ashy-grey Mouse (*Pseudomys albocinereus*), which was noted as extremely abundant in October 1975, appeared to have fallen to very low density at the time of the latest visit.

Further data relating to the abundance of the mammal fauna in particular are required in future to ascertain the stages in the post-fire succession which favour the different species.

The apparent irruption of the Ashy-grey Mouse seems to have subsided already, but the interaction between the Western Hare Wallaby (*Lagorchestes hirsutus*) and Banded Hare Wallaby populations can be anticipated to be sensitive to post-fire changes in vegetative cover as the former species constructs a burrow for shelter, whereas the Banded Hare Wallaby is dependent on the cover provided by mature vegetation.

Some additional work on the fauna is planned early in 1978/79.

Work completed is being prepared for publication.

(iv) MIDDLE ISLAND

A report detailing results of all research undertaken on Middle Island is in the final stages of preparation. Continuation of studies on the island is planned on the basis of biennial visits with the first such visit in November 1978.

(v) EAST WALLABI ISLAND

Major soil erosion problems have arisen following the construction and use of an airstrip on East Wallabi

Island. Construction involved clearing the vegetation from an area of otherwise unconsolidated sand overlying pavement limestone.

An extensive system of drift fences was constructed in areas of unvegetated sand during June 1978 with a view to enhancing the rate of regeneration of native plants which should eventually stabilise the sand.

#### 4. FLORA CONSERVATION

Research on flora conservation was initiated in October 1977 with the appointment of S.D. Hopper as Research Officer (Flora).

##### (i) Biogeographic Data Base

Businesses involved in the Western Australian wildflower industry were examined to obtain a list of species exploited in the cut flower, seed and nursery trades. Approximately 1 000 species were found to be exploited. The compilation of a biogeographic data base for these species was commenced using locality details written on specimen sheets at the Western Australian Herbarium.

##### (ii) Rare and Endangered Flora

A trial survey of rare and endangered species was begun using *Eucalyptus caesia* as a case study. Localities of known occurrence were extracted from herbarium specimens, published literature and local botanists. Each of these localities was then visited to determine population size, reproductive capacities, pollinators and habitat status. A report on this study will be written in 1978/79.

##### (iii) Kangaroo paws

Several publications dealing with aspects of the hybridization, pollination, taxonomy and biogeography of kangaroo paws were prepared from data acquired during the past five years.

#### 5. MISCELLANEOUS

##### (i) BAT TAXONOMY

A study of the taxonomy and zoogeography of Free-tailed Bats of the sub-genus *Mormopterus* was



commenced in 1977. A species referable to *Tadarida planiceps* occurs in the South-West and Goldfields; a second species, referable to *Tadarida loriae*, occurs in mangrove communities in the Pilbara and South Kimberley; a third is referable to *Tadarida beccarii* and has been recorded in the deserts and eastern and southern Kimberley. Only the first of the three species was previously recognised in Western Australia. Specimens examined from arid and semi-arid locations in Northern Territory and Queensland are also referable to *T. beccarii*.

Further specimens are being measured and incorporated into the study as they become available.

## 6. PUBLICATIONS

Burbidge, A.A. (1977). "History of the Drysdale River National Park". In : Kabay, E.D. and Burbidge, A.A. (Eds.). "A biological survey of the Drysdale River National Park, north Kimberley, Western Australia, in August 1975". Wildl. Res. Bull. West. Aust. No. 6. (Dept. Fish. Wildl. : Perth).

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- Hopper, S.D., Coates, D.J. and Burbidge, A.H. (1978). Natural hybridization and morphometric relationships between three mallee eucalypts in the Fitzgerald River National Park, W.A. *Aust. J. Bot.* 26 : 319-333.
- Hopper, S.D. and Maslin, B.R. (1978). Phytogeography of *Acacia* in Western Australia. *Aust. J. Bot.* 26 : 63-78.
- Kabay, E.D. and Burbidge, A.A. (Eds.) (1977). "A biological survey of the Drysdale River National Park, north Kimberley, Western Australia in August, 1975". Wildl. Res. Bull. West. Aust. No. 6 (Dept. Fish. Wildl. : Perth).
- Kinncar, J.E. and Main, A.R. Aspects of Arid Zone Physiology. *J. Roy. Soc. West. Aust.* (in press).

- Lane, J.A.K. (1975). "The birdlife of the Blackwood River Estuary". In : Hodgkin, Ernest P. "An environmental study of the Blackwood River Estuary, Western Australia 1974-75." Dept. Conservation and Environment. West. Aust. Rept. No. 1.
- Lane, J.A.K. (1978). Seabird Islands No. 61 Saint Alouarn Island, Western Australia. *Corella* 2 : 36-37.
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- Youngson, W.K. and McKenzie, N.L. (1977). "The Wildlife of the proposed Karroun Hill Nature Reserve, Western Australia". Dept. Fish. Wildl. West. Aust. Rept. No. 30.
- Western Australia. Fisheries and Wildlife, Dept. of Wetlands of the South-West of Western Australia, with special reference to the Busselton area. Perth, Dept. of Fisheries and Wildlife, 1978.
- Two theses previously submitted for higher degrees by officers of the research branch were also passed during the year. These were:-
- McKenzie, N.L. (1976). "Behaviour Units and Functional Communication in *Isoodon obesulus* (Marsupialia; Peramelidae)". M.Sc. Thesis, Monash University.
- Prince, R.I.T. (1976). "Comparative Studies of Aspects of Nutritional and Related Physiology in Macropod Marsupials". Ph.D. Thesis, University of Western Australia.

## VII ENFORCEMENT

### 1. ACTIVITIES

Emphasis was placed on increased intelligent enforcement in many areas this year. Illegal activities in nest-robbing and the taking of immature fauna was curtailed by good enforcement methods and intelligent patrolling by Wildlife Officers. Numerous apprehensions were made and over 100 immature birds were seized in six separate cases.

Keeping of derelict fauna by private persons and Wildlife Park proprietors throughout the State came under regular scrutiny by Wildlife Officers. The policy of releasing such fauna when recovered was rigidly enforced. All persons associated with the practice of caring for sick and derelict fauna were encouraged to follow the rules in relation to the eventual release of the animal.

Very good liaison was maintained with the Customs Department, Police Department and the Department of Agriculture. Many joint inspections and exchanges of information took place to the mutual benefit of each Department.

Many cases of unlawful possession of illegally obtained birds in aviaries were checked out and confiscations made.

Wildlife Park inspections in the metropolitan area were made the responsibility of the Senior Wildlife Officer. All licenses issued in respect to these parks and also country Wildlife Parks now have standardised licensing conditions which should materially assist the implementation of the policies and restrictions which apply to all such parks. This in turn, will facilitate more consistent inspections.

A general tightening up on the requirements of the Act and Regulations was practised and achieved and will be continued.

### 2. MANAGEMENT PROGRAMME

Finch trapping season -

Eleven trappers operated in the 1977 season. Some operated on a combined basis. A total of 26 525 mixed finches were taken, compared with 19 575 the previous year. The increase of 7 000 birds can be attributed to

a good breeding season, good climatic conditions and more efficient trapping and caring of the birds after capture. Caging, transporting, holding facilities and general welfare of the birds after capture was supervised by the District Wildlife Officer at Wyndham.

#### Grey and Red Kangaroos -

Regular patrols are made by all metropolitan and District Wildlife Officers for illegal taking of Grey Kangaroos. Many apprehensions have been made in various districts. Grey Kangaroo populations appear stable and in many areas on the increase. Liaison is maintained with local authorities on these matters.

#### Damage Inspections -

Constant damage permit applications and subsequent follow-up inspections require regular and time consuming supervision from Wildlife Officers. The Grey Kangaroos are over plentiful in many shires, however, with the overall co-operation of farmers, Shires and shooters, the Management Programme is operating satisfactorily.

The Red Kangaroo Programme has generally operated on an acceptable basis. Private and domestic problem areas which have arisen are constantly monitored by the Department. Regular meetings by the Red Kangaroo Advisory Committee should ensure the continued efficient operation of this programme. Chiller and factory inspections by Wildlife Officers minimise illegal activity.

### 3. PROSECUTIONS 1.7.1977 - 30.6.1978

Various offences against the Wildlife Conservation Act and Regulations occurred throughout the year. Of these, some 28 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                      Fines \$10.00                      Costs \$17.20

DISTRICT NO. 3 MT MAGNET  
Prosecutions - Nil

DISTRICT NO. 4 CARNARVON  
Prosecutions - Nil

DISTRICT NO. 5 GERALDTON Prosecutions - 12	Fines \$415.00 1 case pending	Costs \$234.09
DISTRICT NO. 6 MOORA Prosecutions - 3	3 cases pending	
DISTRICT NO. 7 WONGAN HILLS Prosecutions - Nil		
DISTRICT NO. 8 WAROONA Prosecutions - 19	Fines \$150.00 16 cases pending	Costs 44.30
DISTRICT NO. 9 PINGELLY Prosecutions - 1	1 case pending	
DISTRICT NO. 10 KALGOORLIE Prosecutions - 1	Fine \$20.00	Costs \$19.10
DISTRICT NO. 11 BUSSELTON Prosecutions - 1	Fine \$20.00	Costs \$17.10
DISTRICT NO. 12 ALBANY Prosecutions - Nil		
DISTRICT NO. 13 PERTH METROPOLITAN AREA Prosecutions - 34	Fines \$660.00 24 cases pending	Costs \$162.10
DISTRICT NO. 14 MANJIMUP Prosecutions - 2	Fines \$15.00 1 case pending	Costs \$19.10
DISTRICT NO. 15 ESPERANCE Prosecutions - Nil		
 GRAND TOTALS:		
Prosecutions 76	Fines \$1 290.00 47 cases pending	Costs \$512.99

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Full details of prosecutions are overleaf.

Section of Act or Regulation	No.	Description	(Total) Fines Costs
			\$ \$
DISTRICT NO. 2 - KARRATHA			
Reg. 50 (1) (b)	2	Kangaroo tags not duly affixed to carcasses	\$10.00 \$17.20
DISTRICT NO. 5 - GERALDTON			
Sect. 16 (1)	6	Taking of protected birds	195.00 163.50
Reg. 52	6	Taking fauna not fully fledged	1 case pending 270.00 70.59
DISTRICT NO. 6 - MOORA			
Sect. 16 (1)	2	Taking of protected fauna (kangaroo)	Cases pending
Reg. 52	1	Taking of young fauna not fully fledged	Case pending
DISTRICT NO. 8 - WAROONA			
Sect. 16 (1)	2	Taking of protected fauna (kangaroo)	110.00 30.20
Sect. 16 (1)	1	Taking of protected fauna (kangaroo)	Case pending
Sect. 16 (1)	1	Taking of protected fauna (Red-tailed Black Cockatoo)	Case pending
Sect. 16 A	2	Possession of protected fauna (kangaroo)	Cases pending
Sect. 25 (1) (a)	6	Obstruction	Cases pending
Sect. 25 (1) (d)	3	Refused to give name and address	Cases pending
Sect. 25 (1) (f)	3	Used abusive language	Cases pending
Reg. 12 (7) (a)	1	Keeping birds without appropriate class of license	40.00 14.10
DISTRICT NO. 9 - PINGELLY			
Sect. 16(1)	1	Taking of protected fauna (Grey Kangaroo)	Case pending
DISTRICT NO. 10 - KALGOORLIE			
Sect. 17B (2) (b)	1	Unlicensed Duck shooting	20.00 19.10

Section of Act or Regulation	No.	Description	Fines	(Total) Costs
DISTRICT NO. 11 - BUSSELTON				
Reg. 54 (7)	1	Snaring of Grey Kangaroo	20.00	17.10
DISTRICT NO. 13 - PERTH METROPOLITAN AREA				
Sect. 16 (1)	1	Taking of protected fauna (kangaroo)	80.00	17.10
Sect. 16 (1)	3	Taking of protected fauna (kangaroo)	Cases pending	
Sect. 16 (1)	1	Taking of protected fauna (Long-necked Tortoise)	50.00	8.05
Sect. 16 A (1)	2	Possession of protected fauna (kangaroo)	200.00	43.40
Sect. 16 A (1)	8	Possession of protected fauna (kangaroo)	Cases pending	
Sect. 25 (1)	1	Obstruction	Case pending	
Reg. 5 (4)	1	Not affixing tag issued under Damage License to kangaroo carcass	Case pending	
Reg. 7 (7)	1	Having received kangaroo carcasses without a duly affixed tag	Case pending	
Reg. 7 (8)	1	Consigning of untagged kangaroo skins	Case pending	
Reg. 7 (9) (a)	1	Tags removed from carcass	Case pending	
Reg. 10 (5)	1	Possession of untagged kangaroo skin by licensed skin dealer	Case pending	
Reg. 13 (3)	1	Holding birds other than in class of license applicable	Case pending	
Reg. 28	2	Keeping of protected avian fauna without a license	80.00	37.20
Reg. 30 (3) (a)	1	Cages not having unspillable containers of water	Case pending	
Reg. 34 A (2)	1	Inflicting unnecessary pain on fauna (Long-necked Tortoise)	50.00	8.05
Reg. 46	1	Grazing cattle on nature reserve	Case pending	
Reg. 46	1	Stripping bark from Paperbark Tree on a nature reserve	Case pending	
Reg. 50 (1)	1	Possession of kangaroo carcass without a license	Case pending	
Reg. 51 (5)	1	Transport untagged kangaroo skins	Case pending	
Reg. 52	3	Taking fauna not fully fledged	200.00	48.30
Reg. 52	1	Taking fauna not fully fledged	Case pending	



Section of Act or Regulation	No.	Description	Fines	(Total) Costs
DISTRICT NO. 14 - MANJIMUP				
Reg. 12 (2)	1	Keeping avian fauna without an Aviculturist's License		
Reg. 50 (1)	1	Possession of kangaroo carcass without a license	15.00	19.10
				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, 1978, the following licenses were issued:

### 1. SCIENTIFIC PURPOSES - REGULATION 17

These licenses were issued mainly to official organizations or their employees. Eighty two persons were licensed to take fauna for general scientific purposes.

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

There were 38 licenses issued for the following purposes:-

Care of derelict fauna	10
Collection and Study	7
Study and Display	4
Educational	8
Photography	6
Miscellaneous purposes	3

### 3. AVICULTURE

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

4 780 licenses were issued, mainly to aviculturists.

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

81 were issued.

(iii) Licenses to Trap Avian Fauna - Regulation 11

19 were issued.

List of Parrots Trapped

Twenty-eight	921
Western Rosella	957
Western King	96
Galahs	401
Sulphur-crested	
Cockatoo	16

List of Finches Trapped

Longtail	9 267
Masked	2 866
Star	3 581
Gouldian	4 573
Blood	382
Double Bar	1 709
Chestnut	3 164
Pictorella	951
Painted	32

4. GAME

Licenses to Take Game

36 quail shooters' licenses were issued.  
487 duck shooters' licenses were issued.

5. KANGAROOS

Licenses to Take Red Kangaroos for Sale -  
Regulation 6

Sixty licenses were issued throughout the year.

Licenses to Deal in Kangaroo Carcasses -  
Regulation 8

Six licenses were issued.

Licenses to Deal in Kangaroo Skins - Regulation 10

Thirteen licenses were issued.

Licenses to Process Fauna - Regulation 7

Twenty one 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

Birds

Finches:-

Blood	177
Chestnut	1 679
Double Bar	1 166
Gouldian	2 701
Longtail (Blackheart)	6 672
Masked	1 672

Pictorella	532
Star	2 553
Yellow-rumped	12
Cuban	4
Zebra	2

Painted	2
Melba	4

Parrots:-

Twenty-eight. (Port Lincoln)	1 440
Rosella - Western	689
Budgerygah.	522
Indian Ringneck	2
Western King	112
Lovebirds - Peach-faced	472
- Masked	212
Cockatiel	10
Scarlet-chested	4
Red-collared Lorikeet	4
Purple-crowned Lorikeet	8
Superb	1
Smoker	2
Bourke	2
Elegant	9

Cockatoos:-

Red-tailed Black	3
White-tailed Black	13
Galah	12
Short-billed Corella	2
Long-billed Corella	3
Sulphur Crested	1

Canaries:- 130

Other Species:-

Tasmanian Swamp Quail	1
Banded Land Rail	2
Peafowl	4
Bustard	1
White (Mute) Swan	1
Magpie	1
Mountain Duck	2
Mannikins	6
King Quail	4
Pied Heron	9
Black Winged Stilt	2
Singing Honeyeater	12
Stone Curlew	2
Java Sparrow	60
Wedgetailed Eagle	2
Kestrel	2
White Ibis	6
Magpie Goose	1

### Mammals

Agile Wallaby	1
Numbat	2
Brush-tailed Possum	4
Western Grey Kangaroo	1
Western Swamprat	12
Woolie	3
Honey Possum	3
Bush Rat	12
Rufous Rat Kangaroo	4
Euro	1

### Reptiles and Amphibians

Tree Dtella	29
Western Green Frog	18
Orange-crowned Toadlet	6
Slender Tree Frog	6
Burrowing Frog	11
Northern Dtella	8
Pilbara Dtella	2
Green Tree Frog	1
Fat-tailed Diplodactylus	3
Geocrinia lutea	11
Ornate Dragon	4
Hosmer's Skink	1
Napoleon Skink	2
Shingle Back Skink	4
Ridgetailed Monitor	1
Western Spiny-tailed Gecko	3
Thorny Devil	2
Bynoe's Gecko	7
Wood Gecko	3
Jewelled Gecko	6
Beaked Gecko	2
Military Dragon	1
Legless Lizard	1
Burton's Snake Lizard	1
Steindachner's Tortoise	2
Oblong Tortoise	4

(ii) Export Interstate - Scientific Collections

(a) In conjunction with the C.S.I.R.O. Fauna

and Flora habitat Survey at "Lake Way" in the Wiluna District, the following fauna was exported to the CSIRO Division of Wildlife Research, Canberra:-

Reptiles and Amphibians	128
Birds	247
Mammals	9

(b) Australian Museum Sydney

Reptiles and Amphibians	186
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(iii) Import Interstate

Birds

Finches:-

African Firetail	48
Aurora	56
Cordon Bleu	119
Cuban	80
Hecks Grass Finch	10
Jacarini	86
Canaries	377
Masked	15
Melba	110
Orange-breasted Waxbill	110
Blue-breasted Waxbill	14
Orange-cheeked Waxbill	3
Parrot Blue-faced	68
Parrot Red-faced	167
Plumhead	27
Yellow Star	24
Red-brow (Sydney Waxbill)	6
Zebra	4
Star	12

Parrots:-

Alexandra (Princess)	56
Barraband	43
Blue Bonnet	28
Blue-winged	12
Budgerygah	966
Cockatiel (Weero)	39
Crimson Wing	34
Eastern King	35
Eclectus	4
Hooded	5
Mallee Ringneck	5
Rainbow Lorikeet	18
Musk Lorikeet	23

Scaly-breasted Lorikeet	30
Red-rumped	19
Rosella - Adelaide	8
- Crimson	31
- Eastern	22
- Pale Headed	28
- Yellow	8
Scarlet-chested	32
Smoker (Regent)	2
Turquoise	16
Little Lorikeet	8
Mulga	1
Twenty-eight	2

Doves and Pigeons:-

Diamond Dove	2
Torres Strait Pigeon	2

Quail:-

Red Backed	6
Black Stubble	12

Cockatoos:-

Long-billed Corella	2
Short-billed Corella	243
Galah	348
Sulphur-crested	2
Gang Gang	9
Major Mitchell	6
Red-tailed Black	1
White-tailed Black	3

General:-

Spur Winged Plover	2
Cape Barren Goose	12
Little Pied Cormorant	3
Darter	1

Mammals

Brown Antechinus	11
Dusky Antechinus	2
Tuan	2
Tasmanian Devil	3
Wombat	4
Brown Rat	2
Kowari	4
Sugar Glider	12
Western Grey Kangaroo	4
Bushrat	10
Southern Bushrat	30
Brush-tailed Possum	12
Common Ringtail	16
Swamp Wallaby	2
Pretty Faced Wallaby (Whiptail)	5

Great Grey Kangaroo	1
Fox	3
Axis Deer	1
Pygmy Antechinus	2
Flying Foxes	12
Marsupial Mouse	2
Tree Rat	2

Reptiles

Gould's Goanna	6
Shingle Back Skink	30

(iv) Export Overseas

Birds

Galah	48
Budgerygah	30
Port Lincoln	15
Cockatiel	1
Major Mitchell	1
Sulphur-crested Cockatoo	2
Short-billed Corella	3
Kookaburra	4
Crested Pigeon	10
Wedge Tailed Eagle	1
Boobook Owl	1
Canaries	62
Sacred Kingfisher	4
Willie Wagtail	2
Yellow Winged Honeyeater	4
Western Spinebill	2
Red-collared Lorikeet	2
Little Pied Heron	4
White Ibis	6
Night Heron	6
Black-tailed Native Hen	10
Banded Plover	6
Magpie Goose	6
Stone Curlew	2
Great Bower Bird	2
Banded Land Rail	4
Black Swan	4

Mammals

Brush-tailed Possum	1
Western Grey Kangaroo	4
Agile Wallaby	6
Euro	5
Tammar	6

Reptiles and Amphibians

Clawless Gecko	1
Tree Dtella	5
Gecko	4
Ornate Dragon	4
Dragon Lizard	2



Western Netted Dragon	2
Ring-tailed Dragon	2
Dwarf Bearded Dragon	1
Thorny Devil	4
Skink	7
Gould's Goanna	3
Ridge-tailed Monitor	1
Black Whip Snake	3
Western Tree Frog	3
Guenther's Toadlet	2
Moaning Frog	1
Western Banjo Frog	2
Humming Frog	1
<u>Other</u>	
Emu Eggs	1
Emu Skeleton	1

7. EXPORT LICENSES ISSUED TO OVERSEAS INSTITUTIONS

3 licenses were issued.

- (i) Field Museum of Natural History, Chicago, U.S.A.
- (ii) Cornell University, Ithaca, New York, U.S.A.
- (iii) American Museum of Natural History, Central Park West, New York, U.S.A.

8. LICENSES TO KEEP FAUNA - REGULATION 16

17 issued in the year.

9. EMUS

License to Process Fauna - Regulation 7

4 licenses were issued to process Emu eggshells.

## IX LEGISLATION

### 1. WILDLIFE CONSERVATION ACT AMENDMENTS

Amendment No. 34 of 1977 was given Royal Assent and proclaimed in the *Government Gazette* to take effect from August 1, 1978. The amendments mainly dealt with and were consequential on the amendment to the definition fauna as described in the Act.

### 2. WILDLIFE CONSERVATION REGULATIONS

During the year amendments to the Regulations were gazetted on August 12, 1978 (*Government Gazette* No. 47) and on June 2, 1978 (to be effective from July 1, 1978) (*Government Gazette* No. 37). The amendments related to the licensing of avian fauna and to an increase in the fees for the License to take Game (Ducks) to \$5.00.

## X RADIO COMMUNICATIONS

### NEW EQUIPMENT PURCHASED 1977/78

- 3 only 50W SSB Codan transceivers
- 3 only 25W VHF mobile transceivers
- 7 only VHF handheld telephone transceivers
- 1 only 50W VHF base transceivers
- 1 only three frequency Helical whip base aerials
- 24 only Handic H21 handheld transceivers
- 15 only multi whip aerials.

### EQUIPMENT CONSTRUCTED BY RADIO COMMUNICATIONS OFFICER 1977/78

Remote base console for Perth Head Office - the console allows SSB and VHF remote control of the base transceivers plus control by the office remotes.

Remote control unit for Geraldton Wildlife Office - this unit was installed to allow remote control of the Geraldton base transceiver.

Intercom and VHF communication system for aircraft use - this unit allows communication between personnel in an aircraft and communication to a ground mobile, base or handheld VHF transceiver.

### NEW INSTALLATIONS BY RADIO COMMUNICATIONS OFFICER 1977/78

- 14 only vehicle installations for SSB mobiles
- 3 only vehicle installations for VHF mobiles
- 1 only vessel installation for SSB and 27 MHz mobiles
- 1 only base station installation at Perth Head Office for metropolitan communications
- 1 only base aerial installation at Geraldton office
- 2 only remote office control units in Chief Wildlife Office at Perth Head Office and Wildlife Office at Geraldton
- 3 only patrol vessel aerial installations

### RADIO REPAIRS

The majority of repairs were carried out by the Radio Communications Officer where possible.

## 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 H.B. Shugg, Secretary and Conservator of Wildlife, and Mr D.W. Arnold, Assistant 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

B.A. Carmichael - appointed as Chief Wildlife Officer  
P.J. Roberts - appointed as Wildlife Officer (Flora)  
B.C. Haberley - appointed as Wildlife Officer (Flora)

#### Retirement -

S.W. Bowler (Supervising Wildlife Officer)

#### Resignation -

R. Grayson (Wildlife Officer, Albany)

#### Wildlife Officers - Transfers

<u>NAME</u>	<u>FROM</u>	<u>TO</u>
A.R. Marshall	Senior Wildlife Officer Perth	Acting Supervising Wildlife Officer Perth
L. Moss	Wildlife Officer Perth	Acting Senior Wildlife Officer Perth
K. Marshall	Metropolitan Wildlife Officer	Wildlife Officer Mt Magnet (Kangaroo Control)
M. Osborn	Waroona	Metropolitan Wildlife Officer
R. Coughran	Wildlife Officer Grade 2 Perth	Wildlife Officer Grade 1 Waroona
R. Smith	Wildlife Officer Karratha	Wildlife Officer Grade 1 Albany

P. Pennings	Wildlife Officer Mt Magnet (Kangaroo Control)	Wildlife Officer Grade 1 Karratha
D. Noble	Wildlife Officer Esperance	Wildlife Officer Grade 1 Wyndham
I. Cooke	Wildlife Officer Wyndham	Wildlife Officer Grade 1 Esperance

Dispositions of Wildlife Officers June 30, 1978

Perth:	Chief Wildlife Officer	B.A. Carmichael
	Acting Supervising Wildlife Officer	A.R. Marshall
	Acting Senior Wildlife Officer	L. Moss
	Metropolitan Wildlife Officer	M. Osborn
	Wildlife Officer (Kangaroo Control)	M. Mahoney
	Wildlife Officer (Flora)	P.J. Roberts
	Wildlife Officer (Flora)	B.C. Haberley
	Relieving Wildlife Officer	J. Wilson
	Relieving Wildlife Officer	J. Quinn
	Trainee Wildlife Officer	R. Piggott
	Trainee Wildlife Officer	T. Walley

Districts

Wyndham	Wildlife Officer	D. Noble
Karratha	Wildlife Officer	P. Pennings
Mt Magnet	Wildlife Officer	K. Marshall
Carnarvon	Wildlife Officer	G. Hanley
Geraldton	Wildlife Officer	D. Mell
Moorabool	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
Esperance	Wildlife Officer	I. Cooke
Kalgoorlie	Wildlife Officer	L. Silvester

### 3. RESEARCH AND RESERVE MANAGEMENT

Three new professional officers joined the branch during the year.

Mr .D. Hopper was appointed to the position of Research Officer (Flora) and commenced duties on September 26, 1977.

Dr J.E. Kinnear was appointed to a new position to undertake management orientated research on fauna, and commenced duties on February 8, 1978.

The above two officers are based at the W.A. Wildlife Research Centre.

Mr K.J. Wallace was appointed to the first of the planned professional nature reserve management positions, and commenced duties on July 12, 1978.

A technical officer is shortly to be appointed to assist Mr Wallace. This team will be based at Pingelly following a short familiarization programme at the W.A. Wildlife Research Centre.

The new position of Management Officer, Karratha was also approved, and will be filled in the near future.

Approval was also obtained for the appointment of a Chief Research Officer to head the Wildlife Research Branch. The position has been advertised.

The need for additional research and management personnel remains urgent however, and it is hoped that necessary staff can be added with a minimum of delay.

There is a monumental task involved in documenting the status of the State's flora of some 6 000 described species and an estimated 1-3 000 undescribed species.

Appointment of the first field-based reserve management team is also only the first step along the long road to adequate management of the State's Nature Reserves, while the need for adequate research knowledge on which to base management planning and operations also remains only partly fulfilled.

## XII EXTENSION AND PUBLICITY

During the year liaison with the media 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.

There was an increasing demand by conservation associations, wildlife institutions and libraries in Australia and throughout the world for inclusion on the mailing lists for Departmental Reports, Bulletins and Journals.

Because of the increase in Departmental material for publishing, an additional temporary staff member was obtained for the section. This was done under the "Special Youth Employment and Training Programme".

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

Wildlife Research Bulletin No. 6  
Drysdale River National Park

Wildlife Research Bulletin No. 7  
The Islands of the North-West Kimberley  
Western Australia

Departmental Report No. 30  
The Wildlife of the Proposed Karroun Hill Nature  
Reserve, Western Australia

Departmental Report No. 32  
The Wildlife of the Proposed Wandana Nature Reserve,  
near Yuna, Western Australia

Wetlands of the South-West of Western Australia,  
with Special Reference to the Busselton area

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

Part 1 Tammin Shire  
Part 2 Kellerberrin Shire  
Part 3 Wongan-Ballidu Shire  
Part 4 Narembeen Shire  
Part 5 Bruce Rock Shire

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

"The Wongan Hills"

"Licensing Requirements for Keeping Aviary Birds"

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

The State Wildlife Authority News Service Journal was published once during the last year. The increasing demands made upon the Extension and Publicity Office by various organisations and members of the public, and the additional workload from Departmental activities has unfortunately curtailed the regular publication of this quarterly Journal.

The 1977 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 increasing demands on this Department to extend its involvement in areas of wildlife conservation, research and enforcement, and the requirement to maintain existing activities, requires increased expenditure each year from the Consolidated Revenue Fund. This trend was continued in 1977/78.

### 2. FAUNA CONSERVATION TRUST FUND

A financial statement as at June 30, 1978 is shown overleaf.

