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ANNUAL REPORT (WESTERN  
AUSTRALIAN WILDLIFE AUTHORITY)

(1983) 1983

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Western  
Australian  
Wildlife  
Authority



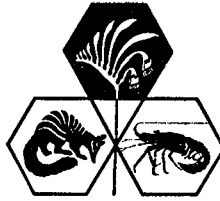
**ANNUAL  
REPORT  
1983**



WILSON & WILSON

COVER PHOTO: As part of the nature reserve management planning process, a signs standard has been prepared for Western Australia's nature reserves. This newly erected information sign on Moondyne Nature Reserve is typical of the signs proposed in the standard.

(Photo I.G. Crook)



COMB RESOURCE CENTRE  
DEPARTMENT OF CONSERVATION  
& LAND MANAGEMENT  
WESTERN AUSTRALIA

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

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## Western Australian Wildlife Authority

# ANNUAL REPORT

## 1983

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

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DEPARTMENT OF FISHERIES AND WILDLIFE

108 ADELAIDE TERRACE

PERTH

The Honourable H.D. Evans M.L.A.  
Minister for Fisheries and Wildlife

Sir,

In accordance with the requirements of Sub-section (5) of Section 7 of the Wildlife Conservation Act 1950, 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, 1983, together with comments relating to the administration of this Act.

*B.K. Bowen*

B.K. Bowen  
CHAIRMAN

Western Australian Wildlife Authority

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# 1 WESTERN AUSTRALIAN WILDLIFE AUTHORITY AND COMMITTEES

## 1. MEMBERSHIP

### Names and Organisation

#### Ex officio Members -

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

Mr P.J. McNamara - acting as Conservator of Forests  
Deputy - Mr F.J. Campbell, Deputy Conservator

Mr A.W. Hogstrom - Chief Agriculture Protection Officer, Agriculture Protection Board

Mr A.G. Errington - Conservator of Wildlife, Department of Fisheries and Wildlife

#### Appointed Members -

Mr R.A. Aitken - Nurseryman

Mr N.A. Beeck - Farmer

Dr P.F. Berry - Head of Division of Natural Sciences - Western Australian Museum

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

Dr A.J. McComb - Botanist - Head of the Department of Botany - University of Western Australia

Mr H.G. Hall - Farmer

Mr W.H.B. Lacy - Pastoralist

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

#### Executive Officer -

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

#### Names of Committees

Bird Committee

Flora Committee

#### Membership -

##### BIRD COMMITTEE -

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

Mr N.A. Beeck - Authority Member

Mr B.A. Carmichael - Chief Wildlife Officer, Department of Fisheries and Wildlife

BIRD COMMITTEE (Contd.) -

Dr S.J.J. Davies - Senior Research Officer, CSIRO,  
Division of Wildlife Research, Helena Valley

Deputy - Mr I. Rowley

Mr H.G. Hall - Authority Member

Mr A.W. Hogstrom - Chief Agriculture Protection  
Officer, Agriculture Protection Board

Deputies - Mr A.J. Oliver

Mr J. Long

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

Executive Secretary - Mr N.S. Press - Department of  
Fisheries and Wildlife

(Vice - Mr M.W. O'Donoghue)

FLORA COMMITTEE -

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

Mr R.A. Aitken - Nurseryman

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

Mr P.J. McNamara - Conservator of Forests

Mrs M. Blackwell - Botanist

Mr P.N. Hewett - Forests Department

Deputy - Mr F. Batini

Mr A.J. Hopkins - Research Officer, Western  
Australian Wildlife Research Centre

Dr N. Marchant - Botanist - Western Australian  
Herbarium

Mr A.G. Errington - Conservator of Wildlife,  
Department of Fisheries and Wildlife

Dr S.D. Hopper - Research Officer, Western  
Australian Wildlife Research Centre

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

Executive Secretary - Mr M.W. O'Donoghue -

Department of Fisheries and Wildlife

(Vice - Mr N.S. Press)

Secretariat

Messrs M.C. Grasby and N.S. Press carried out the  
secretarial functions for the Authority and its  
various committees.



2. MEETINGS

The Western Australian Wildlife Authority

The Authority met on five occasions during 1982/83.

Committees

Bird Committee - met on three occasions during 1982/83.

Flora Committee - met on one occasion during 1982/83.

## II THE FAUNA

### 1. NUMBER OF INDIGENOUS SPECIES OF:

Birds	475
Marsupials	68
Other Mammals	66
Reptiles	359
Amphibia	67
	<hr/>
	1 035
	<hr/>

### 2. LIST OF UNPROTECTED INDIGENOUS SPECIES AS AT 30.6.83

#### Mammals

Wild Dog (Dingo)                      *Canis familiaris dingo*

#### Reptiles

Common Death Adder	<i>Acanthophis antarcticus</i>
Desert Death Adder	<i>Acanthophis pyrrhus</i>
Northern Death Adder	<i>Acanthophis praelongus</i>
Black Whip Snake	<i>Demansia atra</i>
Spotted-headed Snake	<i>Demansia olivacea</i>
Papuan Whip Snake	<i>Demansia papuensis</i>
Green Whip Snake	<i>Demansia reticulata</i>
Northern Whip Snake	<i>Demansia simplex</i>
Bardick	<i>Brachyaspis curta</i>
Tiger Snake	<i>Notechis scutatus</i>
Taipan	<i>Oxyuranus scutellatus</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>
Eastern Brown Snake	<i>Pseudonaja textilis</i>

All Sea Snakes of the family Hydrophiidae.

All invertebrate fauna other than Jewel Beetles of the family *Buprestidae* and Ants of the genus *Nothomyrmecia*.

3. LIST OF SPECIES RARE OR OTHERWISE IN NEED OF SPECIAL PROTECTION AS AT 30.6.83

Mammals

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Macropus robustus isabellinus</i>	Barrow Island Euro	8.4.83
<i>Macropus eugenii</i>	Tammar	"
<i>Onychogalea lunata</i>	Crescent Nail-tailed Wallaby	"
<i>Lagorchestes conspicillatus</i>	Spectacled Hare-wallaby	"
<i>Lagorchestes hirsutus</i>	Western Hare-Wallaby	"
<i>Lagostrophus fasciatus</i>	Banded Hare-Wallaby	"
<i>Petrogale penicillata</i>	Brush-tailed Rock-Wallaby	"
<i>Petrogale burbidgei</i>	Warabi	"
<i>Bettongia penicillata</i>	Woolie	"
<i>Bettongia lesueur</i>	Boodie	"
<i>Potorous platyops</i>	Broad-faced Potoroo	"
<i>Potorous tridactylus gilberti</i>	Gilbert's Potoroo	"
<i>Pseudocheirus dahli</i>	Rock-hunting Ringtail	"
<i>Wyulda squamicaudata</i>	Scaly-tailed Possum	"
<i>Pseudocheirus peregrinus occidentalis</i>	Western Ringtail	"
<i>Perameles bougainville</i>	Barred Bandicoot	"
<i>Perameles eremiana</i>	Orange or Desert Bandicoot	"
<i>Chaeropus ecaudatus</i>	Pig-footed Bandicoot	"
<i>Isoodon auratus</i>	Golden Bandicoot	"
<i>Macrotis lagotis</i>	Dalgyte	"
<i>Myrmecobius fasciatus</i>	Numbat	"
<i>Dasyurus geoffroii</i>	Western Native-Cat	"
<i>Phascogale calura</i>	Red-tailed Wambenger	"
<i>Dasyercus cristicauda</i>	Mulgara	"
<i>Antechinus apicalis</i>	Dibbler	"
<i>Sminthopsis longicaudata</i>	Long-tailed Dunnart	"
<i>Sminthopsis butleri</i>	Carpentarian Dunnart	"
<i>Notomys macrotis</i>	Big-eared Hopping-Mouse	"
<i>Notomys longicaudatus</i>	Long-tailed Hopping Mouse	"
<i>Notomys fuscus</i>	Dusky Hopping-mouse	"
<i>Leporillus conditor</i>	Stick-nest Rat	"
<i>Leporillus apicalis</i>	White-tipped Stick-nest Rat	"
<i>Mesembriomys gouldii</i>	Black-footed Tree Rat	"
<i>Pseudomys chapmani</i>	Pebble-mound Mouse	"
<i>Pseudomys occidentalis</i>	Western Mouse	"
<i>Pseudomys praeconis</i>	Shark Bay Mouse	"
<i>Pseudomys gouldii</i>	Gould's Native Mouse	"
<i>Pseudomys shortridgei</i>	Shortridge's Native Mouse	"

Mammals (cont'd)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Dugong dugon</i>	Dugong	8.4.83
<i>Arctocephalus forsteri</i>	New Zealand Fur Seal	"
<i>Balaenoptera musculus</i>	Blue Whale	"
<i>Megaptera novaeangliae</i>	Humpback Whale	"
<i>Eubalaena gracilis</i>	Southern Right Whale	"

Birds

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Phaethon rubicauda</i>	Red-tailed Tropic-bird	8.4.83
<i>Stictonetta naevosa</i>	Freckled Duck	"
<i>Cereopsis novaehollandiae</i>	Cape Barren Goose	"
<i>grisea</i>		
<i>Tadorna radjah</i>	Burdekin Duck	"
<i>Aviceda subcristata</i>	Crested Hawk	"
<i>Accipiter radiatus</i>	Red Goshawk	"
<i>Falco peregrinus</i>	Peregrine Falcon	"
<i>Falco hypoleucos</i>	Grey Falcon	"
<i>Megapodius reinwardt</i>	Scrub Fowl	"
<i>Rallus pectoralis clelandi</i>	Lewin's Water Rail	"
<i>Jacana gallinacea</i>	Comb-crested Jacana	"
<i>Anous tenuirostris</i>	Lesser Noddy	"
<i>Ptilinopus regina</i>	Red-crowned Pigeon	"
<i>Chalcophaps indica</i>	Green-winged Pigeon	"
<i>Geophaps smithii</i>	Partridge Pigeon	"
<i>Polytelis alexandrae</i>	Alexandra (Princess) Parrot	"
<i>Platycercus haematogaster</i>	Naretha Bluebonnet	"
<i>narethae</i>		
<i>Pezoporus wallicus</i>	Ground Parrot	"
<i>Geopsittacus occidentalis</i>	Night Parrot	"
<i>Cacatua leadbeateri</i>	Major Mitchell's Cockatoo	"
<i>Tyto capensis</i>	Grass Owl	"
<i>Ninox rufa</i>	Rufous Owl	"
<i>Halcyon chloris</i>	Mangrove Kingfisher	"
<i>Pitta iris</i>	Rainbow Pitta	"
<i>Atrichornis clamosus</i>	Noisy Scrub-bird	"
<i>Coracina tenuirostris</i>	Cicadabird	"
<i>Microeca flavigaster</i>	Lemon-breasted Flycatcher	"
<i>Microeca tormenti</i>	Brown-tailed Flycatcher	"
<i>Poecilodryas superciliosa</i>	White-browed Robin	"
<i>Falcunculus frontatus</i>	Crested Shrike-tit	"
<i>Psophodes nigrogularis</i>	Western Whip-bird	"
<i>Rhipidura rufifrons</i>	Rufous Fantail	"

Birds (cont'd)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Dasyornis brachypterus</i>	Brown Bristle-bird	8.4.83
<i>Dasyornis broadbenti</i>	Rufous Bristle-bird	"
<i>Amytornis textilis</i>	Thick-billed Grass-wren	"
<i>Malurus coronatus</i>	Purple-crowned Fairy-wren	"
<i>Malurus leucopterus leucopterus</i>	Black and White Fairy-wren (Dirk Hartog I)	"
<i>Malurus leucopterus edouardi</i>	Black and White Fairy-wren (Barrow I.)	"
<i>Emblema oculatum</i>	Red-eared Firetail	"
<i>Lonchura flaviprymna</i>	Yellow-rumped Mannikin	"

Birds required to be given special protective measures under Article III of the Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and Their Environment.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Pterodroma leucoptera leucoptera</i>	Goulds Petrel	8.4.83
<i>Pterodroma solandri</i>	Providence Petrel	"
<i>Sula abbotti</i>	Abbott's Booby	"
<i>Fregata andrewsi</i>	Christmas Island Frigatebird	"
<i>Pedionomus torquatus</i>	Plains Wanderer	"
<i>Tricholimnas sylvestris</i>	Lord Howe Island Woodhen	"
<i>Cyanoramphus novaezelandiae cookii</i>	Norfolk Island Parrot	"
<i>Cyclopsitta diopthalma coxeni</i>	Coxens Fig Parrot	"
<i>Neophema crysogaster</i>	Orange-bellied Parrot	"
<i>Psephotus chrysopterygius</i>	Golden-shouldered Parrot	"
<i>Psephotus dissimilis</i>	Hooded Parrot	"
<i>Psephotus pulcherrimus</i>	Paradise Parrot	"
<i>Ninox novaeseelandiae rayana</i>	Norfolk Island Boobook Owl	"
<i>Ninox squamipila natalis</i>	Christmas Island Owl	"
<i>Podargus ocellatus plumiferus</i>	Plumed Frogmouth	"
<i>Amytornis dorotheae</i>	Dorothy's Grass-wren	"
<i>Strepera graculina crissalis</i>	Lord Howe Island Currawong	"
<i>Pardalotus quadragintus</i>	Forty-spotted Pardalote	"
<i>Zosterops albogularis</i>	Norfolk Island Silvereye	"
<i>Lichenostomus melanops cassidix</i>	Helmeted Honeyeater	"
<i>Manorina flavigula melanotis</i>	Black-eared Miner	"

### Birds (cont'd)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Drymodes superciliaris colcloughi</i>	Northern Scrub Robin	8.4.83

### Reptiles

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Crocodylus porosus</i>	Salt-water Crocodile	8.4.83
<i>Crocodylus johnstoni</i>	Fresh-water Crocodile	"
<i>Pseudemydura umbrina</i>	Western Swamp (Short-necked) Tortoise	"
<i>Dermochelys coriacea</i>	Leathery Turtle	"
<i>Ctenophorus yinnietharra</i>		
<i>Ctenotus delli</i>		
<i>Ctenous lanceolini</i>	Lancelin Island Skink	"
<i>Ctenotus youngsoni</i>		
<i>Egernia stokesii stokesii</i>	Spiny-tailed Skink (Houtman Abrolhos)	"
<i>Egernia stokesii aethiops</i>	Spiny-tailed Skink (Baudin I)	"
<i>Lerista christinae</i>		
<i>Lerista humphriesi</i>		
<i>Lerista lineata</i>	Lined Skink	"
<i>Menetia amaura</i>		
<i>Aspidites ramsayi</i>	Woma	"
<i>Liasis olivaceus barroni</i>	Pilbara Olive Python	"
<i>Python carinatus</i>		
<i>Python spilotus</i>	Carpet Snake	"
<i>Denisonia atriceps</i>		
<i>Vermicella calonotos</i>		

### Amphibians

<u>Scientific Name</u>	<u>Common Name</u>	<u>Government Gazette</u>
<i>Arenophryne rotunda</i>	Round Frog	8.4.83

#### 4. OPEN SEASONS

Open seasons declared in 1982/83

Finch Trapping Season 1 September to 15 November 1983 17.6.83

Waterfowl Hunting Season (Kimberley, North-West and Eastern Land Divisions) 1 January 1983 to 31 December 1983. 24.12.82

4. OPEN SEASONS (cont'd)	<u>Government Gazette</u>
Waterfowl Hunting Season (South-West and Eucla Land Divisions) 9 January 1983 to 20 February 1982)	17.12.82
Waterfowl Population Management (South-West and Eucla Land Divisions) (Mountain Duck) 1 January 1983 to 8 January 1983 and 21 February 1983 to 31 December 1983	24.12.82
Hunting Season - Brown Quail ( <i>Synoicus ypsilophorus</i> ) and Stubble Quail ( <i>Coturnix pectoralis</i> ) 1 January to 30 June each year	10.6.83

EXISTING OPEN SEASONS

	<u>Government Gazette</u>
Management of certain species of birds of prey, parrots, cockatoos, crow species and Silvereyes in various Shires.	16.6.78
Management of Populations of Red Kangaroo ( <i>Megaleia rufa</i> ) and Euro ( <i>Macropus robustus</i> )	21.11.80
Management of Populations of Emu ( <i>Dromaius novaehollandiae</i> )	21.11.80
Management of Sulphur-crested Cockatoos (Eastern sub-species) ( <i>Cacatua galerita queenslandica</i> , <i>Cacatua galerita rosinae</i> , <i>Cacatua galerita melvillensis</i> , <i>Cacatua galerita interjecta</i> )	22.5.81
Management of Agile Wallabies ( <i>Marcopus agilis</i> )	21.11.80
Management of Populations of Grey Kangaroo ( <i>Macropus fuliginosus</i> )	21.11.80
Management of Populations of White Tailed Black Cockatoos spp. - <i>Calyptorhynchus baudinii</i> and <i>Calyptorhynchus latirostris</i> )	17.7.81
Management of Populations of Black Cormorant ( <i>Phalacrocorax carbo</i> ) and Pied Cormorant - ( <i>Phalacrocorax varius</i> )	20.11.81

5. IMPORTATION AND KEEPING OF MONKEYS AND OTHER PRIMATES

By notice in the "Government Gazette" on 5 January, 1979, the Hon Minister for Fisheries and Wildlife prohibited the import into Western Australia and the keeping of any animal of the order "Primates", unless specific authorisation is obtained.

6. SPECIES DECLARED TO BE FAUNA UNDER SECTION 6(2) OF THE  
WILDLIFE CONSERATION ACT

(Notice in "Government Gazette" on 23 November 1979)

White Swan (*Cygnus olor*)  
Peafowl and Pheasants of the genera *Pavo* and *Phasianus*  
respectively on Rottnest Island.



### III THE FLORA

The following classes of flora are declared to be protected flora (Government Gazette 18 April 1980):

<i>Pteridophyta</i>	(ferns and fern allies)
<i>Gymnosperms</i>	(conifers and cycads)
<i>Angiosperms</i>	(flowering plants)

Protected flora of the taxa listed below, growing in a natural state and not in a domesticated or cultivated state, are declared to be rare throughout Western Australia. (Government Gazette 12 March 1982)

<i>Acacia anomala</i>	Chittering Grass Wattle
<i>Acacia aphylla</i>	Leafless Rock Wattle
<i>Acacia argutifolia</i>	East Barrens Wattle
<i>Acacia depressa</i>	Echidna Wattle
<i>Acacia guinetii</i>	Guinet's Wattle
<i>Acacia simulans</i>	Barrens Kindred Wattle
<i>Adenanthos cunninghamii</i>	Albany Woollybush
<i>Adenanthos detmoldii</i>	Yellow Jugflower
<i>Adenanthos dobagii</i>	Fitzgerald Woollybush
<i>Adenanthos ellipticus</i>	Oval-leaf Adenanthos
<i>Adenanthos eyrei</i>	Toolinna Adenanthos
<i>Adenanthos ileticos</i>	Club-leaf Adenanthos
<i>Adenanthos pungens</i>	Spiky Adenanthos
<i>Adenanthos velutinus</i>	Velvet Woollybush
<i>Aponogeton hexatepalus</i>	Stalked Water-Ribbons
<i>Asplenium obtusatum</i>	Shore Spleenwort
<i>Baeckea arbuscula</i>	Albany Baeckea
<i>Banksia brownii</i>	Feather-leaf Banksia
<i>Banksia chamaephyton</i>	Fishbone Banksia
<i>Banksia cuneata</i>	Quairading Banksia
<i>Banksia goodii</i>	Good's Banksia
<i>Banksia meisneri</i>	Meisner's Scott River
var. <i>ascendens</i>	Banksia
<i>Banksia sphaerocarpa</i>	Ironcap Banksia
var. <i>dolichostyla</i>	
<i>Banksia tricuspis</i>	Pine Banksia
<i>Boronia tenuis</i>	Blue Boronia
<i>Caladenia bryceana</i>	Dwarf Spider Orchid
<i>Caladenia gemmata</i>	
forma <i>lutea</i>	Yellow China Orchid
<i>Caladenia lavandulacea</i>	Lavender Spider Orchid
<i>Caladenia triangularis</i>	Shy Spider Orchid
<i>Casuarina fibrosa</i>	Woolly Sheoak
<i>Conostylis misera</i>	Grass Conostylis
<i>Conostylis pauciflora</i>	Dawesville Conostylis
<i>Cooperookia georgei</i>	Mauve Cooperookia

declared rare flora (continued)

<i>Cooperhooikia georgei</i>	Mauve Cooperhooikia
<i>Darwinia acerosa</i>	Fine-leaved Darwinia
<i>Darwinia carnea</i>	Mogumber Bell
<i>Darwinia collina</i>	Yellow Mountain Bell
<i>Darwinia macrostegia</i>	Mondurup Bell
<i>Darwinia masonii</i>	Mason's Darwinia
<i>Darwinia meeboldii</i>	Cranbrook Bell
<i>Darwinia oxylepis</i>	Gillham's Bell
<i>Darwinia squarrosa</i>	Fringed Mountain Bell
<i>Darwinia wittwerorum</i>	Wittwer's Mountain Bell
<i>Daviesia euphorbioides</i>	Wongan Cactus
<i>Diuris purdiei</i>	Purdie's Donkey Orchid
<i>Dodonaea hackettiana</i>	Perth Hop Bush
<i>Drosera occidentalis</i>	Minute Pygmy Sundew
<i>Drummondita ericoides</i>	Moresby Range Drummondita
<i>Drummondita hassellii</i>	Peak Charles Drummondita
var. <i>longifolia</i>	
<i>Eremophila denticulata</i>	Fitzgerald Eremophila
<i>Eremophila inflata</i>	Swollen-flowered Eremophila
<i>Eremophila merrallii</i>	Bruce Rock Eremophila
<i>Eremophila microtheca</i>	Heath-like Eremophila
<i>Eremophila resinosa</i>	Resinous Eremophila
<i>Eremophila serpens</i>	Snake Eremophila
<i>Eremophila virens</i>	Campion Eremophila
<i>Eremophila viscida</i>	Varnish Bush
<i>Eucalyptus aquilina</i>	Mt Le Grand Mallee
<i>Eucalyptus bennettiae</i>	Bennett's Mallee
<i>Eucalyptus brachyphylla</i>	Binyarinrinna Mallee
<i>Eucalyptus burdettiana</i>	Burdett Gum
<i>Eucalyptus caesia</i>	Caesia
<i>Eucalyptus calcicola</i>	Hamelin Bay Mallee
<i>Eucalyptus carnabyi</i>	Carnaby's Mallee
<i>Eucalyptus coronata</i>	Crowned Mallee
<i>Eucalyptus desmondensis</i>	Desmond Mallee
<i>Eucalyptus exilis</i>	Boyagin Mallee
<i>Eucalyptus insularis</i>	Twin Peak Island Mallee
<i>Eucalyptus johnsoniana</i>	Johnson's Mallee
<i>Eucalyptus kruseana</i>	Bookleaf Mallee
<i>Eucalyptus pendens</i>	Badgingarra Mallee
<i>Eucalyptus rhodantha</i>	Rose Mallee
<i>Eucalyptus steedmanii</i>	Steedman's Gum
<i>Franklandia triaristata</i>	Plumed Lanoline Bush
<i>Gastrolobium appressum</i>	Scale Leaf Poison
<i>Gastrolobium glaucum</i>	Wongan Poison
<i>Grevillea baxteri</i>	Cape Arid Grevillea
<i>Grevillea cirsiifolia</i>	Varied-leaf Grevillea
<i>Grevillea drummondii</i>	Drummond's Grevillea
<i>Grevillea dryandroides</i>	Phalanx Grevillea
<i>Grevillea inconspicua</i>	Cue Grevillea
<i>Grevillea infundibularis</i>	Fan-leaf Grevillea

declared rare flora (continued)

<i>Grevillea involucrata</i>	Lake Varley Grevillea
<i>Grevillea prostrata</i>	Pallarup Grevillea
<i>Grevillea ripicola</i>	Collie Grevillea
<i>Grevillea saccata</i>	Pouched Grevillea
<i>Hakea aculeata</i>	Column Hakea
<i>Hakea megalosperma</i>	Lesueur Grevillea
<i>Halosarcia bulbosa</i>	Large-articled Samphire
<i>Halosarcia entrichoma</i>	Eyelash Samphire
<i>Hibbertia bracteosa</i>	Porongurups Hibbertia
<i>Hibbertia miniata</i>	Orange Hibbertia
<i>Hydrocotyle lemnoides</i>	Aquatic Pennywort
<i>Kennedia beckxiana</i>	Cape Arid Kennedia
<i>Kennedia glabrata</i>	Northcliffe Kennedia
<i>Kennedia macrophylla</i>	Augusta Kennedia
<i>Lambertia echinata</i>	Prickly Honeysuckle
<i>Lambertia orbifolia</i>	Round-leaf Honeysuckle
<i>Lambertia rariflora</i>	Green Honeysuckle
<i>Lasiopetalum bracteatum</i>	Helena Velvet Bush
<i>Lechenaultia pulvinaris</i>	Cushion Lechenaultia
<i>Lechenaultia superba</i>	Barrens Lechenaultia
<i>Leucopogon obtectus</i>	Hidden Beard-heath
<i>Myoporum salsoloides</i>	Jerramungup Myoporum
<i>Pityrodia augustensis</i>	Mt Augustus Foxglove
<i>Pomaderris bilocularis</i>	Tutanning Pomaderris
<i>Pomaderris grandis</i>	Large Pomaderris
<i>Prasophyllum lanceolatum</i>	Brown Leek Orchid
<i>Prasophyllum triangulare</i>	Dark Leek Orchid
<i>Ptychosema pusillum</i>	Dwarf Pea
<i>Pultenaea skinneri</i>	Skinner's Pea
<i>Rhizanthella gardneri</i>	Underground Orchid
<i>Ricinocarpus trichophorus</i>	Barrens Wedding Bush
<i>Roycea pycnophylloides</i>	Saltmat
<i>Sowerbaea multicaulis</i>	Many-stemmed Lily
<i>Spirogardnera rubescens</i>	Spiral Bush
<i>Stachystemon axillaris</i>	Leafy Stachystemon
<i>Stawellia dimorphantha</i>	Arrowsmith Stilt-lily
<i>Stylidium coroniforme</i>	Wongan Triggerplant
<i>Stylidium expeditionis</i>	Tutanning Triggerplant
<i>Stylidium galioides</i>	Yellow Mountain Triggerplant

declared rare flora (continued)

<i>Synaphea pinnata</i>	Helena Synaphea
<i>Tegicornia uniflora</i>	Mat Samphire
<i>Thelymitra fuscolutea</i>	Star Orchid
var. <i>stellata</i>	
<i>Thelymitra macmillanii</i>	Salmon Sun Orchid
<i>Thelymitra psammophila</i>	Sandplain Sun Orchid
<i>Urocarpus niveus</i>	Bindoon Starbush
<i>Urocarpus phebalioides</i>	Gairdner Range Starbush
<i>Verticordia helichrysantha</i>	Barrens Feather Flower
<i>Verticordia staminosa</i>	Wongan Feather Flower
<i>Villarsia calthifolia</i>	Mountain Villarsia
<i>Wurmbea humilis</i>	Wongan Dwarf Nancy
<i>Wurmbea tubulosa</i>	Long-flowered Nancy

## IV NATURE RESERVES

### 1. INTRODUCTION

The Wildlife Conservation Act defines a Nature Reserve as "land reserved to Her Majesty, or disposed of, under the Land Act 1933 or any other Act, for the conservation of flora and fauna".

Prior to 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	995	8 398 648	412	8 086 314
1979	1016	8 536 654	493	8 205 197
1980	1036	9 065 634	555	8 805 310
1981	1062	9 883 231	620	9 663 637
1982	1069	9 889 474	645	9 683 211
1983	1075	9 890 797	674	9 717 038

3. SUMMARY OF NATURE RESERVES - JUNE 30, 1983.

As at June 30, 1982	1069 reserves	9 889 474.1840 ha
New Reserves 1982/83	9 reserves	1 507.8701 ha
Amendments 1982/83	8 reserves	- 177.6286 ha
Cancelled Reserves 1982/83	3 reserves	- 7.4592 ha
TOTAL	1075 reserves =	9 890 796.9663 ha

4. NATURE RESERVES VESTED IN WESTERN AUSTRALIAN WILDLIFE AUTHORITY - JUNE 30, 1983.

As at June 30, 1982	645 reserves	9 683 210.9335 ha
New reserves 1982/83	8 reserves	1 472.0327 ha
Amendments 1982/83	6 reserves	- 188.3333 ha
Existing reserves vested 1982/83	21 reserves	32 543.3986 ha
TOTAL	674 reserves =	9 717 038.0315 ha

5. NEW RESERVES 1982/83

NO.	NAME	AREA	VESTING	GAZETTED
Al4063	Smith's Brook	95.8017	W.A.W.A.	02.07.82
28010		62.9438	W.A.W.A.	27.05.83
38296		143.9107	W.A.W.A.	27.05.83
11139		2.0234	W.A.W.A.	-
8291		1100	W.A.W.A.	-
28303	Pootenup	41.2736	W.A.W.A.	27.05.83
4723	Toolibin	22.0326	W.A.W.A.	10.06.83
18950		4.0469	W.A.W.A.	10.06.83
12645		35.8374	Min. Water Res.	10.06.83

TOTAL : 9 New Reserves 1 507.8701 ha

TOTAL of New Reserves Vested in W.A.W.A. = 8

TOTAL Area of New Reserves Vested in W.A.W.A. = 1 472.0327

6. OTHER CHANGES

(i) Amendments to Area 1982/83

NO.	NAME	VESTING	OLD AREA	NEW AREA	DIFFERENCE	DATE
26150	Noombling	W.A.W.A.	46.6906	63.6368	+16.9462	13.08.82
2707	Carrabunyp	-	98.3386	104.8238	+6.4852	13.08.82
A28220	-	W.A.W.A.	523.3749	483.4737	-39.9012	Reserves (2)
A32907	-	W.A.W.A.	50.9752	27.0533	-23.9219	Act No. 117
24496	-	-	69.859.1672	69.863.3867	+4.2195	"
36445	Dunn Rock	W.A.W.A.	22.797.0000	22.797.2322	+2.322	03.12.82
11043	Kokerbin	W.A.W.A.	91.2683	89.2449	-2.0234	25.02.83
2070	-	W.A.W.A.	202.3428	62.6776	-139.6652	25.02.83
			Total - =	-205.5117 ha		
			Total + =	+27.8831 ha		
			Total area amended =	-177.6286 ha		
			Total 6 W.A.W.A. Reserves amended =	-188.3333 ha		

(ii) Existing Reserves Vested 1981/82

NO.	NAME	VESTING	AREA (ha)	DATE
A28220	-	W.A.W.A.	523.3749	02.07.82
26150	Noombling	W.A.W.A.	63.6368	13.08.82
A24505	Shackleton	W.A.W.A.	447.1725	24.09.82
A14063	Smith's Brook	W.A.W.A.	95.8017	02.07.82
20218	Kathleen	W.A.W.A.	1 190.5042	29.04.83
26403	-	W.A.W.A.	113.3651	13.05.83
28674	Mending	W.A.W.A.	211.4963	29.04.83
33501	-	W.A.W.A.	203.4065	13.05.83
33714	-	W.A.W.A.	116.7771	29.04.83
32993	-	W.A.W.A.	43.5838	13.05.83
23704	Karlgarin	W.A.W.A.	239.3589	13.05.83
32864	-	W.A.W.A.	1 436.9125	13.05.83
32865	-	W.A.W.A.	579.1684	13.05.83
27146	-	W.A.W.A.	115.9956	13.05.83
18199	-	W.A.W.A.	173.7012	13.05.83
31799	Beaumont (Group)	W.A.W.A.	3 617.5380	27.05.83
12900	Paper Bark	W.A.W.A.	60.7028	27.5.83
16405	-	Min. Water Supply	629.2718	27.05.83
33713	Tapper Road	W.A.W.A.	116.7771	29.04.83
36445	Dunn Rock	W.A.W.A.	22 797.2322	25.02.83
2707	Carraburyup	W.A.W.A.	104.8238	27.05.83
23316	Nambam	W.A.W.A.	292.0692	27.05.83

TOTAL = 22 Reserves = 33 172.6704 ha

TOTAL = 21 W.A.W.A. Reserves = 32 543.3986 ha



## (iii) Existing Reserves, Change of Purpose 1982/83

NO.	NAME	VESTING	FROM	TO	AREA	GAZETTED
A28220	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	523.3749	02.07.82
26150	Noombling	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	63.6368	13.08.82
25013	-	-	Cons. of Flora	Park	6531m <sup>2</sup>	24.09.82
A24505	Shackleton	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	447.1725	24.09.82
A14063	Smith's Brook	W.A.W.A.	Parklands	Cons. of Flora & Fauna	95.8017	02.07.82
30142	-	-	Pres. of Natural Flora	Parklands	3.7320	05.11.82
35191	-	-	Prot. of Flora	Buffer Strip	3.0741	21.01.83
22576	-	Kalamunda	Public Park & Pres. of Natural Flora	Park	2.8456	15.04.83
11139	-	W.A.W.A.	School Site	Cons. of Flora & Fauna	2.0234	27.05.83
8291	-	W.A.W.A.	Watering Place for travellers & Stock	Cons. of Flora & Flora	1100	27.05.83
28287	-	-	Prot. of Flora	Parkland	4.0444	27.05.83
19036	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	9.0296	10.06.83
15702	-	Min. Water	Water	Water & Cons. Flora & Fauna	301.4908	10.06.83
24534	-	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	307.3009	10.06.83
23156	Manmanning	W.A.W.A.	Cons. of Flora	Cons. of Flora & Fauna	343.1734	10.06.83
10716	Karlgarin	W.A.W.A.	Water & Cons. Flora & Fauna	Cons. of Flora & Fauna	232.0000	27.05.83

(iv) Existing Reserves Cancelled 1982/83

RESERVE NO.	ORIGINAL PURPOSE	NEW PURPOSE	AREA	GAZETTED
25013	Cons. of Flora	"Park"	6531 m <sup>2</sup>	24.09.82
30142	Pres. of Natural Timber	Parklands	3.7320	05.11.82
35191	Prot. of Flora	Buffer Strip	3.0741	21.01.83
TOTAL Reserves cancelled = 3				
AREA = 7.4592				

7. CLASSIFICATION

The Wildlife Conservation Act allows Nature Reserves to be classified into various access categories (Section 12A). As at 30.6.83 the following reserves were subject to classifications:

(a) Prohibited areas

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>	<u>Comment</u>
A. 23187	Nangeen Hill	Bruce Rock	
A. 24869	Bernier & Dorre Is.	Carnarvon	Dorre I. only
A. 25113	Lake Magenta	Kent, Lake Grace	excludes protected road
A. 26808	Barlee Range	West Pilbara	
27164	Prince Regent	West Pilbara	
A. 27956	Two Peoples Bay	Albany Shire	part only

(b) Limited Access Areas

A. 15556	Thomsons Lake	Cockburn	excludes boundary strip
23586	Yorkrakine Rock	Tammin	
A. 24556	Toolibin Lake	Wickepin	
A. 24869	Bernier & Dorre Is.	Carnarvon	Bernier I. only
25886	Modong	Serpentine-Jarrahdale	excludes boundary strip
A. 27620	Ellen Brook	Swan	
A. 27621	Twin Swamps	Swan	
A. 27956	Two Peoples Bay	Albany Shire	part only
A. 30191	Moodyne	Toodyay	

(c) Shooting or Hunting Areas

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>	<u>Comment</u>
A.15107	Lake Pleasantview	Albany	
36550	-	Albany	
12398	Lake Mears	Brookton	
28088	Channel Lakes	Brookton, Beverley, Quairading	
31837	Beverley Lakes	Beverley	
7634	-	Boulder	
36324	-	Broomehill	
25210	Pinjarrega Lake	Coorow	
24428	Nonalling and Whitewater Lakes	Corrigin	
18468	Lake Balicup	Cranbrook	
A.25798	Lake Unicup	Cranbrook	
A.26160	Lake Jebarjup	Cranbrook	
A.26161	Camel Lake	Cranbrook/ Gnowangerup	
26687	Lake Kulunilup	Cranbrook	
26679	Lake Pindicup	Cranbrook	
26680	Lake Noojubup	Cranbrook	
26682	Pinticup Swamp	Cranbrook	
26681	East Pinticup Swamp	Cranbrook	
26901	Yarnup Swamp	Cranbrook	
30018	Lake Mordalup	Cranbrook	
27393	Eneminga Brook	Dandaragan	
27394	Eneminga Brook	Dandaragan	
5999	Lake Dumbleyung	Dumbleyung	
26664	Lake Dumbleyung	Dumbleyung, Wagin	
A.25133	Cobline Flats	Dumbleyung	
A.25134	Cobline Flats	Dumbleyung	
10472	Coomelberrup Lk	Dumbleyung	
32339	Lake Shaster	Esperance, Ravensthorpe	
A.15231	Woody Lake	Esperance	
A.23825	Mullet Lake	Esperance	
4182	-	Esperance	
A.32419	Lake Gore	Esperance	
9676	Bootine Swamp	Gingin	
A.9838	Wannamal Lake	Gingin	
A.17186	Walyormouring Lake	Goomalling	
34811	Benger Swamp	Harvey	
A.7535	Carrolup Rd Swamp	Katanning	
A.25136	Cobline Flats	Katanning	
A.28552	Lake Coyrecup	Katanning	
26020	Lake Coyrecup East	Katanning	
9508	Arthur River Flats	Narrogin	
26788	Arthur River Flats	Narrogin	
26789	Arthur River Flats	Narrogin	

part only

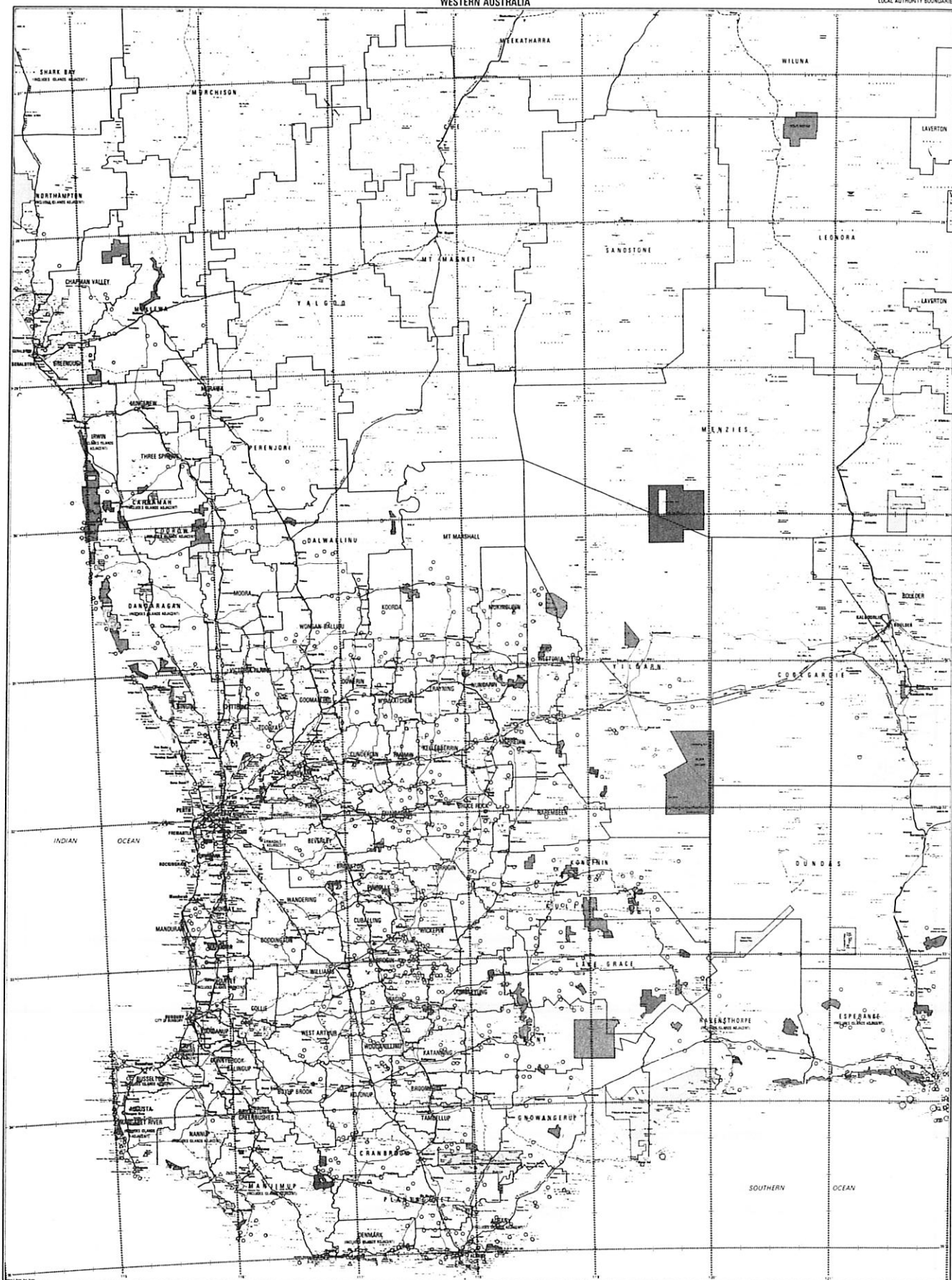
<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>	<u>Comment</u>
26790	Arthur River Flats	Narrogin	
9550	Lake Taarblin	Narrogin	
10631	Lake Taarblin	Narrogin	
20692	Lake Taarblin	Narrogin	
9552	Lake Lukin	Narrogin	
9628	Billy Lake	Narrogin	
9629	Ibis Lake	Narrogin	
10016	South of White Lake	Narrogin	
9551	Lake Bokan	Narrogin	
17339	between Bokan & Nomans Lake	Narrogin	
26785	Nomans Lake	Narrogin	
21284	White Lake	Narrogin	
26786	west of White Lake	Narrogin	
24789	Brown & Campion Lakes	Nungarin	
28286	Jerdacuttup River	Ravensthorpe	
26162	Three Swamps	Tambellup	
10313	Lake Nooriying	Tammin	
24373	Gundaring Lake	Wagin	
2085	east of Wagin Lake	Wagin	
2086	east of Wagin Lake	Wagin	
2087	east of Wagin Lake	Wagin	
2088	east of Wagin Lake	Wagin	
9098	-	Wagin	
A.10733	Parkeyerring Lake	Wagin	
1740	Wild Horse Swamp	West Arthur	
A.5456	Dead Man's Swamp	West Arthur	
A.9617	Lake Dulbinning	Wickepin	
A.14396	Lake Walbyring	Wickepin	
A.27286	Wild Dog Swamp	Wickepin	
A.27026	Lake Ninan	Wongan-Ballidu	
17055	Lake Martinup	Woodanilling	
27609	Flagstaff Lake	Woodanilling	
17257	Murapin Lake	Woodanilling	

#### 8. LAND PURCHASES

During the 1982/83 financial year a sum of \$53 400 was transferred to the Crown Law Department for the purchase of land for nature reserves near York and Mogumber, in the Morseby Range, and at Ski Lake, Narembeen.

SOUTH WESTERN SECTION  
WESTERN AUSTRALIA

LOCAL AUTHORITY BOUNDARIES



DEPT. OF FISHERIES AND WILDLIFE  
NATURE RESERVES  
NATIONAL PARKS

LOCAL AUTHORITY BOUNDARIES  
SHIRES  
TOWNS

SOUTH WESTERN SECTION  
WESTERN AUSTRALIA

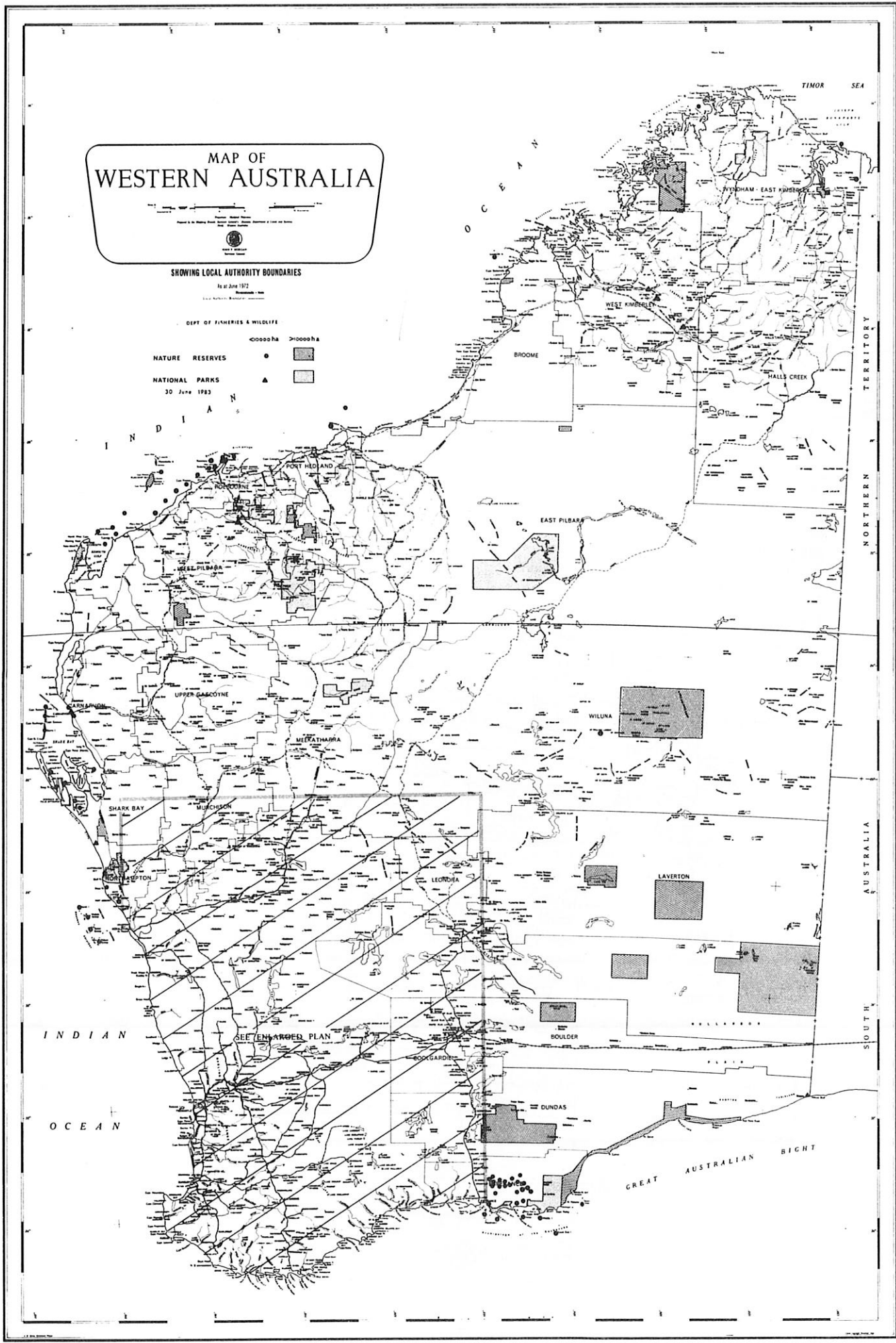
# MAP OF WESTERN AUSTRALIA

SHOWING LOCAL AUTHORITY BOUNDARIES

As at June 1972

DEPT OF FISHERIES & WILDLIFE

- NATURE RESERVES
- NATIONAL PARKS
- 30 June 1983



## V RESERVE MANAGEMENT

### 1. INTRODUCTION

The Reserve Management Section has further consolidated its function within the Wildlife Research Branch with the appointment of a Reserve Management Officer and Reserves Officer at Katanning. This is part of the continuing strategy, authorised by Cabinet and the Public Service Board in 1977, to improve reserve management operations through-out the south-west by basing staff in country areas. The Katanning team is the second rural-based management team to be established; the first being the Pingelly team in 1977-78. The appointment of the Katanning team should solve the previous difficulties which have existed for the Department in providing adequate fire protection arrangements for the region.

A proposal for a third country-based management team at Wongan Hills has not yet been approved. Similar problems to those being experienced in the Katanning area can be expected to develop in the Wongan Hills area if delays continue. In addition to the immediate need for fire protection for many of the district's nature reserves, the appointment of the Wongan Hills team is vital to the successful implementation of the recently completed management plan for the nature reserves in the southern half of the Shire of Dandaragan. The rapid and successful implementation of such plans is important, both in terms of indicating the Department's active interest in its reserves, and in encouraging community appreciation of their local nature reserve system.

### 2. MANAGEMENT PLANNING

#### (i) Management Plans

Three management plans have passed through various stages of the management planning process. These are:

- |    |   |                                       |
|----|---|---------------------------------------|
| 1. | Nature Reserves of the Shire of Dandaragan, Volume 1: | Audit of Public Submissions in press. |
| 2. | Nature Reserves of the Shire of Toodyay               | Draft Plan in press.                  |
| 3. | Lake Magenta Nature Reserve                           | Published in final form.              |

Work continued on the development of a management plan for the 15 nature reserves in the Perth Metropolitan Region. The combination of close proximity to a large centre of population and the

diversity of landscape, flora and fauna, makes the Perth Metropolitan nature reserve system highly suitable for interpretive public use. The planning for this use is a major component of the proposed document.

(ii) Management Standards and Guidelines

In many instances, management measures can be applied in a standard way to a group of, if not all, nature reserves. The application of these standards is directed by guidelines, and this process has been formalised over the past year in the "Management Plan Supplement" series. This process has several stages similar to the Management Plan Series. First, the Management Plan Supplement is published in a draft form and interested Government Departments, organisations and individuals directly involved in the pertinent management area are encouraged to comment. Second, the Draft is revised and published in its final form following W.A.W.A. and Ministerial approval.

Two supplements have been published in Draft form. These are:

- |    |   |   |
|----|---|---|
| 1. | Beekeeping on the Nature Reserves of W.A.                             | Draft Published.                            |
| 2. | A Signs Standard for Use in the Management of Nature Reserves in W.A. | Draft Published, Final plan in preparation. |

The management plan supplement series is a further development in the management planning process, and as such, complements the existing management plan series.

3. MANAGEMENT OPERATIONS: PINGELLY MANAGEMENT DISTRICT

The management team based at Pingelly, which is responsible for the management of 256 Nature Reserves, comprised of two members throughout the year with the addition of one wages staff during the fire season. It has become apparent that at least four management staff are required at Pingelly if the minimum requirements of fire standby duties are to be satisfied.

Within the coming year, the Reserve Management Officer based at Pingelly will be transferred to Katanning, where a new management team is to be based. A replacement has been recommended for the Pingelly position.

(i) Biological Survey

Twelve areas of bushland have been examined by the Pingelly Reserve Management Team (PRMT) in the past year. From these, nine areas were recommended as



Nature Reserves. One unvested Nature Reserve was also inspected, and this was recommended for vesting in the Western Australian Wildlife Authority.

Survey work at the Boyagin Nature Reserve continued during 1982/83; and some 350 plant, 88 bird, 13 native mammal and 29 reptile and amphibian species have now been recorded from the reserve. Boyagin Nature Reserve lies across the boundary between the Avon and Darling Botanical Districts. Vegetation work carried out by the PRMT has established that the flora at Boyagin reflects this transition, a fact which serves to re-emphasize the high status of the Reserve.

Live trapping being carried out on the Tutanning Nature Reserve, which includes work on a block programmed for burning in 1984, has provided new reptile records for this important Reserve, and has also served to provide information on the breeding cycle of the Common Dunnart (Sminthopsis murina).

(ii) Management Planning

The first draft of a management plan for the Mooradung Nature Reserve has now been prepared, and will hopefully reach final management plan form during 1983/84.

(iii) Firebreak Construction

Within the 1982/83 period firebreaks on the Tutanning (part only) and Dunn Rock Nature Reserves were widened. This involved 15 and 84 kilometres of firebreaks respectively. During the forthcoming year, the major focus of the construction programme will be the provision of new firebreaks on a reserve in the Westdale area.

(iv) Firebreak Maintenance

Some of the firebreaks within the Pingelly District have been installed for some time. Consequently, erosion and regrowth have become a problem in some areas. This, coupled with a number of other factors, has meant that an increasing amount of effort and expenditure has been directed towards firebreak maintenance in the past year, and this emphasis will continue for the coming year. The total length of firebreaks managed from Pingelly now exceeds 1 000 km.

(v) Wildfires and Fire Control

During 1982/83 the PRMT attended one wildfire within the Pingelly District. This fire escaped from a clearing burn on adjoining private property. A unit from Pingelly also assisted with the suppression of a wildfire on the Lake Muir Nature Reserve.

Ten clearing, stubble and clover burns on private land adjoining Nature Reserves were attended by the PRMT during February and March, 1983. As this work is an essential element of effective management, increased effort in this activity will be made during 1983/84.

(vi) Prescribed Burns

A prescribed burn was carried out on a buffer strip in the Boyagin Nature Reserve by the PRMT in May 1983, and a unit from the PRMT also assisted with a prescribed burn in the Two Peoples Bay Nature Reserve in April.

(vi) Other Activities

A wide range of general management activities have been undertaken by the PRMT during 1982/83. These have included:

1. examination of proposals to mine on Nature Reserves;
2. inspection of Nature Reserves;
3. production of fire suppression maps for Nature Reserves;
4. inspection of proposed land purchases;
5. public relations work with community organisations;
6. liaison with local authorities and government bodies on a variety of matters; and
7. general maintenance activities.

4. MANAGEMENT OPERATIONS - WANNEROO AND OTHER DISTRICTS

(i) Firebreaks

By far the most intensive work done by Nature Reserve Management-Operations, is associated with firebreak maintenance. This year saw consideration having to be given to the maintenance schedule in order to keep costs for contract work within affordable limits.

The main form of maintenance is the ploughing of firebreaks. Due to an increasing awareness of the problems that this technique may involve, different methods such as grading, slashing, herbicide spraying and rotary hoeing are being used. At this stage, it would appear that a combination of methods may be the most efficient for effective firebreak maintenance.

Total length of firebreaks managed from Wanneroo is now 2 058 km.

A total of 1 309 km of firebreaks were maintained for 1982/83; 12 km by Departmental staff and 1 297 km under contract.

New firebreaks construction was as follows:

<u>Reserve No.</u>	<u>Name</u>	<u>Length (km)</u>	<u>Local Authority</u>
2218	Orchid	3	Cranbrook
'A' 14063	-	5	Manjimup
'A' 27310	-	3	Manjimup

(ii) Fire Control

This year saw a marked increase in fire control activities both with respect to wildfires and prescribed burns. The reasons for this are broadly associated with areas becoming dry earlier in the year than usual, and people requesting assistance as they become more aware of the Department's fire control capabilities.

The following information is a summary of the wildfires attended by fire crews from Wanneroo.

(a) Wildfires on Nature Reserves - Total No.: 13

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>
'A' 15677	-	Denmark
33842	Quarram	Denmark
26234	Tinkelelup	Albany
31880	Lake Muir (2 fires)	Manjimup
31241	-	Gingin
15018	Mt Lesueur (2 fires)	Dandaragan
37306	-	Beverley
30626	Gingilup Swamps	Nannup
'A' 23756	Harvey Estuary	Murray
'A' 24739	-	Murray
32142	-	Manjimup

(b) Wildfires adjoining Nature Reserves - Total No.: 7

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>
'A' 27621	Twin Swamps	Swan
'A' 27620	Ellen Brook (2 fires)	Swan
33842	Quarram	Denmark
'A' 15556	Thomsons Lake (2 fires)	Cockburn
'A' 24781	Forrestdale Lake	Armadale/Kelmscott

(c) Prescribed Burns on Nature Reserves - Total No.: 7

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>
'A' 27620	Ellen Brook	Swan
'A' 27956	Two Peoples Bay	Albany
'A' 1931	Warrinup	Cranbrook
'A' 20610	Boyagin	Pingelly/Brookton
24472	-	Harvey
32400	Clackline	Northam

21429

Toodyay

Prescribed burning was planned for a further five Nature Reserves but not completed.

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>
22096	Flat Rock Gully	Toodyay
'A' 25798	Unicup	Cranbrook
'A' 29601	Yarnup	Cranbrook
'A' 26681	East Pinticup	Cranbrook
'A' 26680	Noobijup	Cranbrook

(d) Prescribed Burns Adjoining Nature Reserves - Total No.: 10

<u>Reserve No.</u>	<u>Name</u>	<u>Local Authority</u>
30809	Woodvale	Wanneroo
'A' 30191	Moondyne (4 prescribed burns)	Toodyay
'A' 25113	Lake Magenta (2 prescribed burns)	Lake Grace/Kent
31241	- (2 prescribed burns)	Gingin
28558	Namming	Dandaragan

(iii) Other Projects

Thomsons Lake Nature Reserve

The radial system of firebreaks was upgraded. These firebreaks are made up of a central clear earth track on either side of which is a slashed area.

Techniques are being tested for the control of the large numbers of introduced plants found on the reserve. One such technique is selective spraying using a non-residual herbicide. This appears to be working most markedly on the control of Pampas Grass. This project must be considered a long term one.

Different solutions to reserve management problems are being tested on Thomsons Lake Nature Reserve, and because of the reserve's close proximity to the Metropolitan Area, monitoring of the solutions be easily undertaken.

A system of culverts for erosion control was placed around the firebreaks on Nature Reserve 21429, Shire of Toodyay (to be named 'Rugged Hills Nature Reserve').

5. KARRATHA

Dampier Archipelago

A Reserve Management Officer, based at Karratha was appointed last year to prepare a Management Plan for the

islands in the Archipelago. The Plan will include descriptions of the biophysical environment of the islands and management prescriptions covering fire protection, public use and pest control.

Biological data for the Plan is being collected by biological surveys, island biogeography research, rodent ecology studies, turtle breeding monitoring, rock wallaby research and detailed plant collections.

Management of public use is currently being undertaken. However, detailed planning for public use remains complicated by the continuing absence of a clear definition of areas set aside for recreation on the one hand and, conservation of natural values on the other.

## 6. TWO PEOPLES BAY

### (i) Public Usage

11 300 vehicles were recorded entering the reserve during 1982/83. Many of these carried international visitors. Public usage appears to be stabilising at about 35 000 persons per annum.

### (ii) Education

Lectures and natural history activities continue to be conducted with local schools and organised groups. This type of activity is continually being encouraged.

### (iii) Research and Management

Noisy Scrub Bird population continues to be monitored, however, figures for 1983 are not yet available. In June 1983 a project was commenced to attempt the establishment of a second colony of Noisy Scrub Bird at Mount Many Peaks with the guidance of Mr Donald Merton of the New Zealand Wildlife Service.

Fire - study plots on heathland regeneration continue to be monitored. Preliminary results are at present being written up. The final block in the strategic buffer strip was burnt in April 1983. Part of this area has been electrically fenced to test the feasibility of minimising kangaroo grazing in the immediate post fire regeneration period.

Dieback - following discoveries of "Jarrah dieback" (Phytophthora cinnamomi) in recent years, a major survey of the reserve was conducted by a consultant specialist during the year.

### (iv) Other Projects

- (a) The use of volunteer labour is becoming an increasingly important aspect of management activities. The control of erosion on beach front areas and a study of the Western (Brown) Bristle Bird (Dasyuris brachypterus) are two examples of major volunteer labour input.
- (b) The reserve continues to be used by personnel from other research and tertiary institutions highlighting the reserve's importance as a scientific resource.

(v) Research Station

This was occupied 30 times through the year by various research and management staff.

7. OFFSHORE ISLANDS

Shoalwater Bay Islands

Increasing public use of the Shoalwater Bay Islands has led to degradation of the islands' environment. Seal Island in particular, with its easily accessible beach and seabird breeding colonies, is highly susceptible to increasing public use pressure.

Over the following year it is proposed to signpost all the Bay's islands using the Department's Sign Standard to indicate their nature reserve status. Seal Island, as a result of the heavy use it receives, requires a more intensive management input. In addition to the placement of signs, a fence will be erected around the seabird breeding area along with the construction of a walking trail.

Adele Island

In July 1982, Brunswick Oil N.L. began exploratory drilling for oil on Adele Island, an important seabird breeding area off the Kimberley coast. The Department acted as environmental supervisor for the Commonwealth Government which is the owner of the island. The drilling operation was guided by environmental conditions developed by Departmental staff in consultation with Brunswick. Drilling finished in late August and all equipment was removed from the island by 9 September. Brunswick abided by the environmental conditions. The area will be visited during 1983/84 to determine the success of regeneration of vegetation on the drilling site.

8. GENERAL

(i) Land Information System

Over the past year the Department has become heavily involved in the Rural Information System Joint Project. The primary aim of this Project is to store

and manipulate all data pertinent to the management of land in the rural sector. Government Departments and organisations involved include Forests, Mines, Public Works, Main Roads, Fisheries and Wildlife, Lands and Surveys, Agricultural Protection Board and the Australian Bureau of Statistics. Obviously, a complementary aim of this project is to foster close liaison with other Government Departments. In this way, duplication of information is prevented and all available information held by other Departments is readily accessible.

The Lake Magenta area, which contains six nature reserves, the largest of these being Lake Magenta Nature Reserve, has been chosen as one of the main study areas for the Joint Project. Much of the data input, data manipulation and data display therefore focuses on Lake Magenta Nature Reserve.

## VI WILDLIFE RESEARCH

### 1. BIOLOGICAL SURVEY

Work this year has concentrated on preparing previous field work for publication with particular emphasis on publishing the results of surveys in the Kimberley and Eastern Goldfields.

Data from surveys on the Dampier Peninsula, West Kimberley, were published during the year. Data from surveys in the Great Sandy Desert were also collated and submitted for publication. Both reports make significant recommendations for improving the conservation reserves system in Western Australia. These results and recommendations have been forwarded to the Environmental Protection Authority and the Department of Lands and Surveys.

Work continued on writing up the Biological Survey of the Eastern Goldfields with Part I 'Introduction and Methods' now completed.

In October 1982, a visit was made to Cambridge Gulf to examine the Ord River Nature Reserve and adjacent areas of mangroves and mudflats. This work was carried out in conjunction with W.A. Museum staff. The survey revealed that mangroves in the Nature Reserve were not fully representative of the varieties which occur in the area and a recommendation was forwarded to enlarge the reserve. The work resulted in the first records of the Black Butcher-Bird in Western Australia and located good populations of Lemon-breasted Flycatcher - a species which has been declared to be rare under the Wildlife Conservation Act.

In association with the Working Group on Land Releases, a biological survey was carried out in vacant Crown land north-east of Jibberding. Survey work was carried out during two visits, one in September 1982 and the other in December 1982. Brief visits were also made to areas of land under consideration for release for agriculture in the Shires of Ravensthorpe, Esperance, Yilgarn and Dandaragan.

### 2. ANIMAL ECOLOGY

#### (i) Kangaroo Management Programmes

Monitoring of the commercial red kangaroo harvest was continued. Poor winter rainfall in 1982 and a further increase in the number of shooters resulted in a harvest of 138 000, a marginal increase on the 1981 total of 133 000. It is probable that the relatively high harvests during the past two years will not have allowed any recovery in the commercially exploited sector of the red kangaroo population.



During the latter half of 1982 further information was supplied via the Council of Nature Conservation Ministers and the Australian National Parks and Wildlife Service to United States of America Government authorities involved in a review of United States policy on the import of kangaroo products.

The Western Grey Kangaroo Management Programme continued unchanged. The total harvest for 1982 was approximately 39 000 animals.

(ii) Wheatbelt Rock Wallaby Project (Petrogale lateralis)

Activities have focused on Fox and feral cat control on Nangeen and Mt Caroline Reserves.

Research on bait preferences has continued. So far, it has been shown that meat baits are the most effective as foxes will also take a variety of 'flavoured' APB factory baits, but these factory baits can not be relied upon to eradicate foxes from a reserve.

Preliminary bait tests using eggs and chicken heads were carried out just before winter rains set in with mixed results. Foxes did not find chicken heads particularly attractive, but eggs were readily taken.

Additional trials are planned. If eggs are found to be effective, this would represent a break-through as baited eggs would remain potent under wet conditions.

Initial surveys of Tutakin Rock Nature Reserve failed to locate any rock wallabies and it was concluded that the population had become extinct. This year a small population was re-discovered and 7 animals were subsequently caught by trapping.

A check of earlier (1969) records has revealed that rock wallabies were more widely dispersed on Tutakin Reserve. They are now restricted to one small area, and the site is comparable to sites on other rocks where rock wallabies persist.

The population of rock wallabies persisting on private property S.E. of Shackleton (Querekin Rock) was recently trapped. Three years ago, 7 wallabies were caught, but only 5 were trapped this year.

In March-April 1984, the effects of the predator control program will be assessed; field work will then cease.

(iii) Dampier Archipelago Project

The rock wallaby species P. rothschildi is found in abundance on Enderby and Rosemary Islands. Both of

these islands possess extensive areas of lime sands; those on Enderby Island are subject to mining leases. These areas are also in demand for recreational purposes.

The importance of the sandplain habitat has been assessed. It has been established that the sandplain vegetation is the principal source of food for the Rock Wallaby population.

The conclusion is that loss of the sandplain habitat would severely affect the carrying capacity of Rosemary and Enderby Islands with respect to Rock Wallabies.

(iv) Numbat Research

(a) Study of numbat biology and ecology at Dryandra

Intensive study of the numbat population at Dryandra has continued during the last year using radio-tracking and direct observation of individuals to gather information concerning habitat utilization, social organization, and production and care of young. Since January 1982, nineteen numbats have been fitted with radio transmitters and followed for varying periods of time.

The territories of adult numbats are centred on the lower valley slopes, which are dominated by wandoo (Eucalyptus wandoo). In areas burnt in the previous twelve to eighteen months, the upper slopes, where powder-bark (E. accedens) is dominant, are also extensively used.

Female numbats carry their young from January until July-August, then deposit them in a burrow. The young begin emerging for short periods early in September, and by October they are spending all day away from the home burrow, or a log to which they have been moved. By late December the young numbats are approaching adult size and have left their parental territories. The only young of 1982 so far recaptured was a female, which was already carrying young in May 1983.

All twenty-seven numbats so far captured, with the exception of one adult female, have appeared healthy and in good condition. No mortality of young has been recorded before weaning. No individuals monitored have lost significant amounts of weight between captures. However, the frequent sudden disappearance of adult and young individuals being radio-tracked indicates that rates of predation are high. The only observed predation so far has been that of a young numbat in the early stages of independent foraging which was taken by a hawk (Accipiter sp.)

To investigate the influence of introduced predators on a numbat population, a selective baiting programme has been initiated in part of the study area. Methods of predator control developed as part of the Wheatbelt Rock Wallaby Project using 1080 baits have been adapted for use in this area, and baits are distributed regularly with a 130 hectare section of the forest. Regular surveys are carried out to monitor relative changes in numbat abundance within and outside this section. It is anticipated that this experiment will be carried out over 2-3 years.

(b) Numbat distribution survey

Numbat feeding diggings are easily recognizable, and very numerous in areas supporting populations. During summer 1982-83, two volunteers helped make up a survey team which searched a number of areas for signs of numbat populations. Searches were also carried out at other times.

Successful searches were made in areas of Dryandra Forest outside the main study area, and in jarrah (E. marginata) forest at four locations along the Albany Highway between Armadale and North Bannister.

Unsuccessful searches were made in the following areas:

Tutanning Nature Reserve  
Dragon Rocks Nature Reserve  
Lupton Block: State Forest (near Westdale)  
Saddleback Block: State Forest (Worseley Alumina minesite.  
Two Peoples Bay Nature Reserve  
Nature Reserves 19740 and 36742 (Brookton Highway)

During an expedition into central Australia in July-August 1982, interviews with Aborigines yielded much information about the biology of the numbat in the arid zone, but provided no evidence and little hope that the species still exists there. These results were published in an article in SWANS 12(3) and incorporated in a paper presented at ANZAAS 1983.

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

No work was undertaken on this project during 1982-1983, but it is planned to reactivate the programme during 1983-1984.

(vi) Dugong

Information contained in reports of coastal surveillance observers relating to the occurrence of dugong on the Kimberley coasts has been extracted

during the past year, and is being continued as an aid to increasing our knowledge of dugong populations in these northern waters.

Noted conservationist Sir Peter Scott visited Shark Bay in March 1983 to see dugong. Professor Paul Anderson continued his research work here during a short visit in May 1983.

(vii) Waterbird and Wetland Research

- (a) Routine monitoring of water level and water quality of selected Wetland Nature Reserves (WNRs) in the South West and Eucla Land Division continued during 1982-83. The total number of wetlands now gauged and monitored is 119. Depth, salinity and pH levels were monitored by research staff at two-monthly intervals during the year from July 1982. The same level of monitoring is proposed for 1983-84.

The West Australian Field and Game Association provided valuable assistance in the collection of data.

All data from the programme are on computer and available in tabular or graphic form.

The programme of wetland monitoring of wetland nature reserves provides a sound basis for wetland and waterbird management in:

- i) annual evaluation of conditions for waterfowl breeding,
- ii) prediction of summer conditions for waterfowl,
- iii) determination of seasonal, annual and long term variations in water depth and quality - important aspects of the condition of WNRs.,
- iv) management of particular WNRs, e.g., Lakes Chittering, Nonalling, Bejenup, Tordit-Garrup, Poorginup and Chandala,
- v) assisting in the studies of distribution and occurrence of aquatic macrophytes (including important bird-food plants such as Ruppia and Chora) in relation to salinity and permanence of habitats, and
- vi) providing information of value to the Royal Australasian Ornithologists' Union's "Waterbird Usage" project.

- (b) In conjunction with rainfall statistics, wetland

monitoring data were compiled and presented in the 1982 Rainfall and Wetland Review. The report was submitted to the Bird Committee of the Western Australian Wildlife Authority in support of a recommendation for a restricted duck shooting season in the South West and Eucla Land Divisions for 1982-83.

- (c) Data from the Wetland Monitoring Programme was utilised to provide further information on WNRs which are under application for lease as peat mines in the Lake Muir area (Manjimup Shire). This ongoing programme is conducted under the revised conditions of an agreement between the Department of Mines, the Department of Fisheries and Wildlife and Magnet Industries Pty. Ltd.
- (d) The programme for culling of exotic feral duck species was again deferred this year. Initially, this was due to lack of manpower and later was continued to enable a scientific study to assess the genetic risk which the feral "mallard" population poses to the native Black Duck (Anas superciliosa). It has been taken up as an Honours project by Mrs M. Silberstein and is due for completion by November 1983. Research staff and members of the W.A. Field and Game Association are assisting in the collection of specimens.
- (e) Continued operation of the check structure at Lake Chitttering provided waterbird habitat throughout the summer of 1982-83.
- (f) A consultant was employed to provide expert advice on management problems of Benger Swamp. This advice includes an assessment of present agricultural use of the Swamp and of existing wildlife values. These, and other related studies, will continue for three years and will form a basis for the preparation of a management plan for the area.
- (g) During 1982-83 research staff continued to assist amateur ornithologists of the Western Australian and Australian Wader Study Groups with wader counting, catching and banding activities.

A course on wader identification, ageing and trapping was again held at Eyre Bird Observatory.

- (h) The Royal Australasian Ornithologists' Union's four-year assessment of waterbird usage of WAWA vested WNRs in the South-west and Eucla Land Divisions is currently in its third year. So far, 73 active participants have submitted 878 completed survey sheets, 75 reserves have been

allocated for regular survey and data has been received for 82 reserves.

The RAOU will produce annual summaries of the information obtained along with a final report discussing the methods, the results and their implications for the management of Wetland Nature Reserve.

- (i) A programme to monitor vegetation changes at Jandabup Lake has been initiated with the assistance of students from the Wanneroo Senior High School.
- (j) A review of the history of duck trapping in the south-west was carried out. Research staff interviewed relatives and surviving members of families who participated in duck trapping during the early thirties.

(viii) Western Swamp (Short-necked) Tortoise

The situation has changed little since last year. During the 1982 winter, 9 animals were captured at Ellen Brook Nature Reserve and one animal was obtained from private land adjacent to Twin Swamp Nature Reserve.

No eggs were obtained from captive females during 1982. The reasons for this are not known and different environmental treatment of the captives will be undertaken during 1983 in an attempt to trigger egg production.

The species remains close to extinction.

(ix) Pesticides and the thinning of birds' eggs

There has been no further progress.

(x) Dibbler (Antechinus apicalis)

No work was carried out during the past year.

(xi) Dalgyte (or Bilby) Macrotis lagotis

A grant from the World Wildlife Fund Australia was made jointly to the Conservation Commission, Northern Territory and the W.A. Department of Fisheries and Wildlife to enable a study of the conservation status of this species to be commenced. The grant is administered by the C.C.N.T.

During June 1983, preliminary investigations were carried out in the Gibson Desert Nature Reserve and plans for a more detailed survey were discussed with Aboriginal Communities in the north-west of South Australia, central Western Australia and the

south-west of the Northern Territory. Plans were developed for work in northern W.A. at a later date.

### 3. PLANT ECOLOGY

#### (i) Fire Ecology

The development of the strategic fuel reduced zone (buffer) at Two Peoples Bay Nature Reserve was completed with a final burn in April 1983. Studies of the regeneration of coastal shrublands have been underway since the inception of the scheme (1976); data are presently being compiled for publication. Aspects of the dynamics of plant populations and communities, particularly in relation to fire, are also being studied at Eneabba, Tutanning and Middle Island (Recherche Archipelago). Several papers on these projects are currently in preparation.

Development of the computerized land management information system (incorporating fire behaviour predictions) is continuing. A paper on this work has been accepted for publication in Environmental Management.

#### (ii) Eneabba - Mt Lesueur

The large array of land management issues in this region require continuing botanical input. Further survey work was undertaken by consultants to mining companies under Departmental guidance. Analyses of floristic survey data is proceeding steadily; the paper detailing results of a survey of the whole region has been published in Vegetatio.

#### (iii) Other

The research officer travelled to the UK on leave where he spent 3 months working at Cambridge University. Regeneration processes in mediterranean vegetation types were reviewed. Discussions with ecologists throughout the UK and in Holland and France together with visits to many field study sites will provide the basis for planning future research programmes in Western Australia.

### 4. FLORA CONSERVATION

#### (i) Atlas of the W.A. Flora - Pilot Project

Activity this past year has included:

- a) continued development of computer programs that allow mapping of species' distribution data on the minicomputer screen; the current system now allows for a linear scale (in km) and major town

names to be automatically plotted.

- b) continued soliciting of sight records on the distribution of orchids from members of the W.A. Native Orchid Study and Conservation Group;
- c) the preparation of an interim series of distribution maps showing orchid sight records that were on computer file as at August 1982;
- d) the development of a kangaroo paw mapping system as part of the pilot project run by LISAC using Intergraph and Vax equipment;
- e) the preparation of the manuscript of a colour book on orchids of Perth that will serve as a guide to identification in future Atlas work.

(ii) Licensing and Management of the Wildflower Industry

Activity on this project was restricted to examining and storing incoming pickers' returns and meeting with members of the W.A. Wildflower Exporter's Association to discuss proposed changes to licensing and the return system. Two papers were presented to a workshop at the University of W.A. on wildflower farming

(iii) Conservation Status and Biology of Rare Species

Information on rare species was obtained through literature searches, consultation with local botanists, active field programmes, and through the letting of consultancies for surveys of particular species. Attempts to acquire reserves for rare plants were continued. A major effort to prepare material for publication was undertaken.

(a) Systematics

A large proportion of research time was allocated to systematic studies on rare flora these past 12 months. Field work, herbarium studies and preparation of manuscripts were undertaken to clarify the status of rare flora in the genera Eucalyptus, Conostylis, Anigozanthos, Blancoa, Drakaea and Caladenia. Projects nearing completion include revisions of Drakaea, Conostylis, Blancoa and Anigozanthos, papers describing new rare taxa among eucalypts of the Mt Lesueur and Stirling Range regions, and among Caladenia species in the Perth Flora region.

(b) Survey

Largely through the labours of consultants, survey information on rare plants was obtained from herbarium records and through field work.



The projects undertaken varied from general collations of existing data on rare and geographically restricted plants through to detailed searches for individual species.

Consultants G.J. Barrett, K.A.G. Millar and K. Gillen collated published literature, photographs, herbarium records and drew maps for geographically restricted plants of the Swan Coastal Plain, Darling Scarp, Wheatbelt, jarrah and karri forests, and the Albany district.

A grant of \$20 000 awarded by the Australian Heritage Commission enabled surveys of rare wheatbelt plants to be undertaken by consultants K.A.G. Millar, M.A. Burgman and S.J. Patrick. Usually two or three plants occurring in the same area were selected for detailed work, and a watchful eye was maintained for a number of others that may turn up in the same area.

Important additions to knowledge of the distribution of rare plants were also made by departmental staff including wildlife officers and research personnel.

The Australian Biological Resources Study awarded a grant of \$25 000 to be expended in 1983 for a flora survey of the mallee belt on the inland margin of current farms between Ravensthorpe and Cape Arid National Park. This region has a flora that is poorly known but apparently rich in species of woody shrubs and mallees. Many of these (at least an estimated 20%) have not yet been named by botanists.

The mallee flora is under imminent threat of broadscale destruction, as extensive areas are being cleared for agriculture or are under consideration for release for this purpose. While a small percentage of land routinely is set aside for flora and fauna conservation in any agricultural land release, government officers responsible for defining boundaries of such reserves have been hampered in the past by a dearth of data on the presence and distribution of flora in specific areas.

Consequently, this newly funded project aims to engage a consultant botanist for two years to survey the mallee flora and to deposit extensive collections in the Western Australian Herbarium as a permanent record on which future studies of the naming, geography and conservation of the flora may be undertaken. Emphasis will be placed on poorly known and presumably rare plants.

(iv) Biology of Kangaroo Paws and Conostylis

Opportunistic field observations on several species of kangaroo paws and Conostylis were made in the course of routine field work on other projects. Descriptions of several new taxa were drafted. A visit to the national herbaria in Melbourne and Sydney in November enabled several types to be examined and photographed. Drawings of all Conostylis species were completed by Mrs S.J. Patrick.

- (v) Further original observations of honeyeaters and honey possums feeding on flowers were made. These, together with published observations and numerous personally communicated records from interested colleagues have been collated in draft form for a proposed departmental report. A paper co-authored with A.A. Burbidge on feeding behaviour of birds and mammals on flowers of Banksia grandis and Eucalyptus angulosa was published.

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## VII ENFORCEMENT

### 1. ACTIVITIES

Policing of Flora legislation and surveys for Rare Flora species, was again a major activity for many District Wildlife Officers, but more especially the Metropolitan based Flora Wildlife Officers. New populations of some existing rare species were found and documented thus increasing the knowledge of the distributions of those species. Inspections of some vacant Crown land for possible leasing for commercial growing of native flora species, was carried out by Flora Wildlife Officers on behalf of the Lands Department. Regular patrols of Crown land, to ensure license conditions and other regulations were being adhered to were maintained. Groups of Ethnic people taking flora (principally Vietnamese) caused some problems. Licenses issued to such people now carry the applicable conditions in English and Vietnamese. Field licensing and supervision of Boronia picking activities in the South West were again carried out by Flora Officers.

The requirements of the Agriculture and Related Resources Protection Act in relation to hobby collections of exotic birds is now regularly enforced by the Department of Fisheries and Wildlife. Twenty-four hours a day seven days a week inspections are maintained at Perth airport by Wildlife Officers. All permits and licenses for the declared birds are issued by this Department. Many seizures of prohibited illegally held exotic species have been made. Seized birds have been destroyed.

Island Nature Reserves off the coast adjacent to the Metropolitan area, have necessarily received increased enforcement surveillance over the summer months. Regular complaints are received of people camping, lighting fires, disturbing, spearing and harrassing Seals and Sea Lion populations, exercising dogs with the resultant disturbance and interference of the habitat and bird populations and associated litter deposits. New signs are needed and will be erected on these islands so that the public can more precisely and readily be informed of the conservation rules applicable to such Island Nature Reserves.

Regular patrols by Wildlife Officers for the illegal trapping of birds, and nest robbing of young parrots, is being maintained throughout the State. Illegal taking of crocodiles in the Kimberleys and illegal bird trapping in that region causes concern to the resident District Wildlife Officer. It is anticipated that joint and co-ordinated patrols by Wildlife Officers in various

areas of the State will minimise these activities. The vastness of some wildlife districts reduces the required patrol efficiency to adequately check many areas.

## 2. RESERVES

Nature Reserves continue to increase throughout the State (see Table under IV NATURE RESERVES). Wildlife Officers are heavily involved in the initial surveys of these Reserves and subsequent continual enforcement of regulations associated with the preservation of the Reserves. A major achievement this year was the complete removal of 68 illegal dwellings from a coastal Nature Reserve. A concerted effort, with input by administration, enforcement staff and the local Shire resulted in this difficult exercise being successfully completed without the need for legal action. Several other Nature Reserves including some offshore Islands containing squatters huts are receiving similar attention at this time. Removal of timber, gravel and illegal grazing, erection of fences and dumping of rubbish continue to be areas of concern. With limited staff available, regular policing on many of the reserves is not possible. Many serious fires occurred on Nature Reserves throughout the State. Wildlife Officers were heavily involved in fire fighting duties throughout the summer months.

## 3. MANAGEMENT PROGRAMME

### Finch Trapping

Seven Finch trappers operated under license during the trapping season which was approved for the period 1 September 1982 to 15 November 1982. Yellow tailed Finches, Zebra Finches and Gouldian Finches were excluded from the open season. The latter species for the first time. 23 000 Finches were taken during the open season. This figure was consistent with the previous year's total figure. One trapper was apprehended and convicted of trapping finches before the opening of the season.

### Grey and Red Kangaroos

Enforcement involvement within the Red and Grey Kangaroo Management Programmes was maintained throughout the State. Professional shooters and their field chillers were regularly checked, as were all processing factories and skin dealers in the city and country areas. Consistent patrols for illegal shooting of kangaroos are regularly carried out by all Wildlife Officers throughout the State.

### Duck Shooting Season

The open season for Duck Shooting, of species declared as Game Species was approved for the period 1 January 1983 to 31 December 1983, in those parts of the State which lie within the boundaries of the Kimberley, North West and Eastern Divisions as defined in Section 28 of the Land Act 1933.

An open season for the taking of Mountain Duck was gazetted from 1 January 1983 to 8 January 1983 and from 21 February 1983 to 31 December 1983, (the intermediate period being for the declaration of an open season period for normal game species). The open season for the Mountain Duck was to allow farmers to control that species causing damage to primary production and water storage. In built control measures were incorporated in the open season notice.

An open season for other game species of wild duck was gazetted for the period 9 January 1983 to 20 February 1983, in the South West and Eucla Land Divisions as defined in the Land Act 1933. A bag limit of 5 game species (not including Mountain Duck) was imposed. Wildlife Officers policed the opening day shoots and monitored shooting operations throughout the duration of the 6 week season.



PROSECUTIONS - JULY 1, 1982 TO JUNE 30, 1983

Various offences against the Wildlife Conservation Act and Regulations occurred throughout the year. Of these, some 39 were considered to be of a less serious nature and warning letters were sent. In addition, 68 shack dwellings on the Nilgen Nature Reserve were removed and their owners were given verbal warnings.

Details of prosecutions are as follows:

DISTRICT NO. 1 - WYNDHAM Prosecutions - 1	Fines - \$40.00 Costs \$52.20
DISTRICT NO. 2 - KARRATHA Prosecutions - Nil	
DISTRICT NO. 3 - MT MAGNET Prosecutions - Nil	
DISTRICT NO. 4 - CARNARVON Prosecutions - 1	Fines - \$250.00 Costs \$62.20
DISTRICT NO. 5 - GERALDTON Prosecutions - 2	Fines - \$350.00 Costs \$74.40
DISTRICT NO. 6 - MOORA Prosecutions - 11	Fines - \$1 400.00 Costs \$372.80 3 Cases Pending
DISTRICT NO. 7 - WONGAN HILLS Prosecutions - 1	Fines - \$200.00 Costs \$37.20
DISTRICT NO. 8 - WAROONA Prosecutions - 8	Fines - \$125.00 Costs - \$172.60 5 Cases Pending
DISTRICT NO. 9 - PINGELLY Prosecutions - 1	Fines \$25.00 Costs \$12.20
DISTRICT NO. 10 - KALGOORLIE Prosecutions - Nil	
DISTRICT NO. 11 - BUSSELTON Prosecutions - 3	Fines - \$60.00 Costs \$62.20 2 Cases Pending
DISTRICT NO. 12 - ALBANY Prosecutions - 5	5 Cases Pending
DISTRICT NO. 13 - PERTH Prosecutions - 8	Fines \$450.00 Costs \$208.20 2 Cases Pending
DISTRICT NO. 14 - MANJIMUP Prosecutions - 8	Fines \$550.00 Costs \$186.00 3 Cases Pending
DISTRICT NO. 15 - ESPERANCE Prosecutions - Nil	
GRAND TOTALS	FINES \$3 450.00 COSTS \$1 240.00 20 Cases Pending
PROSECUTIONS - 49	

SECTION OF ACT OR REGULATION	NO.	DESCRIPTION	(TOTAL)	
			FINES	COSTS
			\$	\$
DISTRICT NO. 1 - WYNDHAM Section 16(1)	1	Taking of Protected Fauna (254 Star Finch and 12 Blood Finch)	40.00	52.20
DISTRICT NO. 4 - CARNARVON Section 16(1)	1	Taking of Protected Fauna (2 Pink and Grey Galahs)	250.00	62.20
DISTRICT NO. 5 - GERALDTON Section 16(1)	1	Taking of Protected Fauna (2 Grey Teal Ducks)	150.00	37.20
Section 16A(1)	1	Possession of Fauna (2 Pink Eared Ducks)	200.00	37.20
DISTRICT NO. 6 - MOORA Section 16(1), Reg. 46(b) and 46(9)	2	Removing immature fauna from nest; cutting down trees on a Nature Reserve and driving a vehicle on a Nature Reserve	800.00	84.60
Section 16A(2)	1	Kangaroo carcasses not tagged with Royalty Tags	200.00	57.20
Section 23B(1)	1	Breaching conditions on license when taking flora on Crown land	200.00	57.20
Regulation 46(b)	2	Picking of flora on a Nature Reserve	40.00	74.40
Regulation 46(b)	3	Picking of flora on a Nature Reserve	Cases Pending	
Section 23(b)(1)	1	Breaching conditions on license when taking flora on Crown land	60.00	57.20
Section 16(1)	1	Taking of protected fauna (1 Little Pied Cormorant)	100.00	42.20
DISTRICT NO. 7 - WONGAN HILLS Regulation 46(k)	1	Grazing Sheep on a Nature Reserve	200.00	37.20
DISTRICT NO. 8 - WAROONA Section 16(1); 16A(1)	3	Taking and possession of protected fauna (8 Grey Kangaroo)	Cases Pending	

SECTION OF ACT OR REGULATION	NO.	DESCRIPTION	(TOTAL)	
			FINES	COSTS
			\$	\$
DISTRICT NO. 8 - WAROONA (Cont'd)				
Section 16(1)	2	Taking of protected fauna (2 Grey Kangaroo)	Cases Pending	135.40
Section 16(1)	2	Taking of protected fauna (2 Grey Kangaroo)	50.00	
Regulation 46(b)	1	Picking flora on a Nature Reserve	75.00	37.20
DISTRICT NO. 9 - PINGELLY				
Regulation 46(b)	1	Picking flora on a Nature Reserve	25.00	12.20
DISTRICT NO. 11 - BUSSELLTON				
Section 23B(1)	1	Breaching conditions on license when taking flora on Crown Land	60.00	62.20
Section 16(1); 25(1)(e)	2	Taking protected fauna (2 Grey Kangaroo); Gave false names and addresses; used dogs to take protected fauna	Cases Pending	
DISTRICT NO. 12 - ALBANY				
Regulation 46(1), 46(m)	3	Left litter and lit a fire on a Nature Reserve	Cases Pending	
Regulation 46(b)	2	Picking flora on a Nature Reserve	Cases Pending	
DISTRICT NO. 13 - PERTH				
Regulation 28(1)	1	Possession of 17 parrots under no authority or license	40.00	37.20
Section 23B(1)	3	Breaching conditions on a license when taking flora on Crown land	300.00	96.60
Section 16(1)	1	Taking of protected fauna (1 Pink Eared Duck)	Case Pending	
Section 25(1)(d)	1	Refusal to state name and address; selling fauna without an authority	Case Pending	
Section 16A(1)	1	Possession of protected fauna (4 Grey Kangaroo)	50.00	37.20

SECTION OF ACT OR REGULATION	NO.	DESCRIPTION	(TOTAL)	
			FINES	COSTS
\$				
DISTRICT NO. 13 - PERTH (Cont'd)				
Section 17(3)(a)	1	Used an illegal device to take fauna	60.00	37.20
\$				
DISTRICT NO. 14 - MANJIMUP				
Regulation 46(g); 46(m); 2		Camping, lighting a fire and driving a vehicle on a Nature Reserve	Cases Pending	
44(2)(a)				
Section 16(1)	1	Taking of protected fauna (1 Brown Bittern)	Case Pending	
Regulation 46(a)	2	Removed gravel from a Nature Reserve	400.00	74.40
Regulation 46(j)	3	Carried a firearm on to a Nature Reserve	150.00	111.60

## VIII LICENSING

The keeping of or dealing with fauna not in its natural environment is controlled under the licensing system. During the twelve months ending 30 June 1983, the following licenses were issued.

### 1. SCIENTIFIC PURPOSES - REGULATION 17

These licenses were issued mainly to official scientific organisations or their employees. 109 licenses were issued to take fauna for general scientific purposes.

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

There were 23 licenses issued for the following purpose:

Care of derelict fauna	5
Collection and Study	5
Study and Display	3
Educational	3
Photography	3
Miscellaneous	4

### 3. AVICULTURE

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

4 147 licenses were issued, mainly to aviculturists

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

91 were issued.

(iii) Licenses to Trap Avian Fauna - Regulation 11

11 were issued.

List of Parrots Trapped

Ringneck Parrots	1 498
Western Rosella	682
Red-capped (WA King)	986
Galahs	30
White-tailed Black Cockatoo	27
Short-billed Corella	4
Sulphur-crested Cockatoo	6

List of Finches Trapped

Long-tailed (Black heart)	4 916
Masked	2 812
Star	4 082
Crimson (Blood)	2 250
Double-barred Mannikin	3 158
Chestnut-breasted Mannikin	4 243
Pictorella Mannikin	1 721
Yellow-rump (for research)	20
Painted	12

4. GAME

Licenses to Take Game - Regulations 21 and 22

57 quail shooters' licenses were issued.  
4 489 duck shooters' licenses were issued.

5. KANGAROOS

Licenses to Take Red Kangaroos for Sale - Regulation 6

156 licenses were issued.

Licenses to Deal in Kangaroo Carcasses - Regulation 8

20 licenses were issued.

Licenses to Deal in Kangaroo Skins - Regulation 10

25 licenses were issued.

Licenses to Process Fauna - Regulation 7

21 licenses were issued to process kangaroos.

6. IMPORTS AND EXPORTS OF FAUNA

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

(i) Export Interstate

Finches:

Crimson (Blood)	623
Chestnut-breasted Mannikin	572
Double-barred Mannikin	1 062
Gouldian	4
Long-tailed (Black-heart)	1 986
Masked	669
Pictorella Mannikin	741
Star	1 881
Painted	3

Parrots:

Ringneck Parrots	1 335
Western Rosella	556
Red-capped (W.A. King)	945
Red-collared Lorikeet	22
Purple-crowned Lorikeet	87
Elegant	131
Mulga	27
Green Rosella	1
Northern Rosella	10
Scarlet-chested Parrot	12
Turquoise Parrot	3

Export Interstate (Contd.)

Parrots (Contd.)

Regent	207
Alexandra's (Princess)	7
Superb	2
Cockatiel (Weero)	17
Varied Lorikeet	4
Red-tailed Black Cockatoo	7
White-tailed Black Cockatoo	32
Galah	9
Little Corella	6
Long-billed Corella	6
Sulphur-crested Cockatoo	4
Rock Parrot	2
Adelaide Rosella	16
Yellow Rosella	2
Masked Parrot	4

Other Species:

Banded Land Rail	10
Singing Honeyeater	4
Emu	3
Sand Plover	3
Curlew Sandpiper	2
Red Necked Stint	5
Red Capped Plover	1
Terek Sandpiper	2
Grey-tailed Tattler	1
Great Knot	2
Mongolian Plover	1
Banded Stilt	2
Stone Curlew	6
Pied Heron	2
Laughing Kookaburra	2
Red Wattlebird	4
Little Black Cormorant	4
Cormorant	1
Collared Sparrowhawk	2
Blue-winged Kookaburra	2
Stubble Quail	7
Magpie	1
Diamond Dove	4
Diamond Firetail	4

Exotics:

Indian Ringneck	5
African Fire Finch	37
Love Birds - Peach Face	55
Masked	96
Nyassa	9
Bleeding Heart Pigeon	3
Orange Breasted Waxbill	8
Aberdeen Finch	2

Export Interstate (Contd.)

Mammals

<i>Antechinomys laniger</i>	7
<i>Macropus eugenii</i>	46
<i>Macropus irma</i>	1
<i>Pseudomys praeconis</i>	2
<i>Pseudomys albocinereus</i>	4
<i>Petaurus breviceps</i>	1
<i>Bettongia lesueur</i>	2
<i>Isodon auratus</i>	1

Reptiles

<i>Gehyra nana</i>	2
<i>Gehyra xenopus</i>	2
<i>Gehyra purpurascens</i>	23
<i>Gehyra variegata</i>	71
<i>Oedura marmorata</i>	4
<i>Oedura</i> sp.	1
<i>Acanthophis pyrrhus</i>	1
<i>Denisonia gouldii</i>	3
<i>Heteronotia binoei</i>	128
<i>Heteronotia spelea</i>	6
<i>Diplodactylus granariensis</i>	3
<i>Diplodactylus spinigerus</i>	4
<i>Delma fraseri</i>	3
<i>Delma australis</i>	4
<i>Delma tincta</i>	2
<i>Nephrurus levis</i>	3
<i>Ctenophorus cristatus</i>	1
<i>Ctenophorus minor minor</i>	4
<i>Ctenophorus ornatus</i>	13
<i>Ctenophorus inermis</i>	5
<i>Ctenophorus scutulatus</i>	1
<i>Ctenophorus rubens</i>	1
<i>Ctenophorus reticulatus</i>	5
<i>Ctenophorus femoralis</i>	5
<i>Ctenophorus pictus</i>	1
<i>Ctenophorus isolepis</i>	2
<i>Moloch horridus</i>	2
<i>Tympanocryptis cephalus</i>	1
<i>Tiliqua occipitalis</i>	1
<i>Egernia depressa</i>	5
<i>Egernia kingii</i>	2
<i>Ctenotus fallens</i>	3
<i>Ctenotus labillardieri</i>	1
<i>Ctenotus impar</i>	1
<i>Ctenotus hanloni</i>	2
<i>Ctenotus pantherinus</i>	5
<i>Varanus caudolineatus</i>	2
<i>Varanus giganteus</i>	1
<i>Crocodylus johnstoni</i>	2
<i>Denisonia</i> sp.	1
<i>Furina diadema</i>	1



Export Interstate (Contd.)

Reptiles

<i>Moretha taeniopleura</i>	1
<i>Moretha lineocellata</i>	2
<i>Pseudonaja nuchalis</i>	1
<i>Vermicella bertholdi</i>	1
<i>Vermicella fasciolata</i>	1
<i>Lerista nichollsi</i>	1
<i>Lerista macropisthopus</i>	3
<i>Lerista gerrardii</i>	1
<i>Lerista lineopunctulata</i>	4
<i>Lerista connivens</i>	5
<i>Lerista distinguenda</i>	1
<i>Aprasia repens</i>	1
<i>Lialis burtonis</i>	4
<i>Omolepida branchialis</i>	4
<i>Leiolopisma trilineatum</i>	2
<i>Elseya dentata</i>	20
<i>Chelodina rugosa</i>	20
<i>Emydura victoriae</i>	20

Amphibians

<i>Limnodynastes spenceri</i>	5
<i>Notaden nichollsi</i>	2
<i>Neobatrachus</i> sp.	50
<i>Uperoleia russeli</i>	5
<i>Uperoleia mjobergi</i>	2
<i>Uperoleia talpa</i>	4
<i>Heleioporus eyrei</i>	4
<i>Heleioporus inornatus</i>	2
<i>Geocrinia leai</i>	4
<i>Geocrinia rosea</i>	2
<i>Metacrinia nichollsi</i>	3
<i>Ranidella psuedinsignifera</i>	4
<i>Heleioporus</i> sp.	4

Insects

<i>Buprestidae</i> (jewel beetles)	265
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(ii) Import Interstate

Finches:

Plum-headed	39
Gouldian	433
Blue-faced	100
Black-throated	36
Star	70
Painted	293
Red Browed	6
Parsons	8
Yellow Tail	3

(ii) Import Interstate (Contd.)

Parrots:

Alexandra's (Princess)	37
Blue-Bonnet	13
Cockatiel (Weero)	262
Red-winged	4
Eastern King	71
Hooded	3
Ringneck	9
Red-rumped	42
Adelaide Rosella	8
Crimson Rosella	123
Eastern Rosella	52
Pale-headed Rosella	23
Turquoise	35
Yellow Rosella	12
Red-tailed Black Cockatoo	1
Gang Gang	6
Eclectus	11
Scaly-breasted Lorikeet	13
Red-capped	2
Western Rosella	1
Scarlet-chested	104
Bourke's	19
Rainbow Lorikeet	10
Green Rosella	3
Little Corella	570
Galah	1281
Sulphur-crested Cockatoo	6
Major Mitchell	4
Yellow-tailed Black Cockatoo	2

Other Species:

King Quail	92
Diamond Dove	41
Brown Quail	32
Bar-shouldered Dove	2
Red-backed Quail	2
Button Quail	3
Whistling Duck	4
Flock Pigeon	2
Green winged Pigeon	2
Plumed Pigeon	2
Red-plumed Pigeon	4
Brown Pigeon	2
Forest Bronzewing Pigeon	2
Top knot Pigeon	3
Black-breasted Quail	2
White-headed Pigeon	5
Peaceful Dove	25
Stubble Quail	7
Wonga Pigeon	5
Painted Quail	21
Squatter Pigeon	4

Import Interstate (Contd.)

Exotics:

Melba Finch	155
Cordon-bleu Finch	224
Aurora Finch	123
Orange-breasted Waxbill	173
Cuban Finch	52
Cut-throat Finch	56
African Firetail	43
Bleeding Heart Pigeon	3
Jacarine	73
Red-faced Parrot Finch	36
Ostrich	2
Blue-breasted Waxbill	9
Hooded Siskins	8
Masked Dove	25
Mandarin Duck	4
Blue-faced Finch	6
Ring neck Pheasant	8

Mammals:

<i>Dasyuroides byrnei</i>	2
<i>Trichosurus vulpecula</i>	8
<i>Sarcophilus harrisi</i>	2
<i>Melomys burtoni</i>	15

Reptiles

<i>Crocodylus johnstoni</i>	2
<i>Tiliqua rugosa</i>	16

Amphibians:

<i>Litoria auria</i>	4
<i>Litoria raniformis</i>	4
<i>Litoria flavipunctata</i>	4
<i>Bufo marinus</i> (preserved)	200

Insects etc..

Land snail genus Partula	200
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(iii) Export Overseas

Birds

Galah	66
Budgerygah	5
Sulphur crested Cockatoo	8
Little Corella	11
Long-billed Corella	8
White-tailed Black Cockatoo	2
Cape Barren Goose	8
Laughing Kookaburra	4
Crested Pigeon	6
Silver Gull	30
Gouldian Finch	80
Bourke Parrot	6
Stone Curlew	2
Red Wattle Bird	3
Singing Honeyeater	6

Mammals

<i>Aepyprymnus rufescens</i>	8
<i>Macropus robustus</i>	12
<i>Macropus giganteus</i>	4
<i>Macropus fuliginosus</i>	13
<i>Notomys alexis</i>	8
<i>Trichosurus vulpecula</i>	3
<i>Wallabia bicolor</i>	3
<i>Tachyglossus aculeatus</i>	1
<i>Setonix brachyurus</i>	6

Reptiles

<i>Python spilotus</i>	12
<i>Ctenophorus ornatus</i>	20
<i>Aspidites melanocephalus</i>	2
<i>Tiliqua rugosa</i>	6

7. LICENSES TO KEEP FAUNA - REGULATION 16

37 issued in the year.

8. EMUS

Licenses to Process Fauna - Regulation 7

3 licenses were issued to process Emu eggshells.

9. FLORA

During the twelve months ending 30 June 1983,  
the following licenses were issued.

9. FLORA (Contd.)

Commercial Purposes License

441 licenses were issued authorising the taking of protected flora for sale from Crown land only.

Commercial Producer's License

89 licenses were issued authorising the taking of protected flora for sale from Private land only.

Scientific or Prescribed Purposes License

458 licenses were issued authorising the taking of protected flora from Crown land for the following purposes: Scientific, educational, hobby, propagation, personal enjoyment. Holders of this license are not permitted to sell flora taken.

## IX LEGISLATION

### 1. WILDLIFE CONSERVATION ACT

No amendment was made to the Wildlife Conservation Act during the period of this Report.

### 2. WILDLIFE CONSERVATION REGULATIONS

No amendment was made to the Wildlife Conservation Regulations during the period of this Report.

## X 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.G. Errington, Assistant Director Administration and Conservator of Wildlife; Mr. D.W. Arnold, 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

Disposition of Wildlife Officers as at 30 June 1983

#### Perth

Chief Wildlife Officer	B.A. Carmichael
Supervising Wildlife Officer	A.R. Marshall
Senior Wildlife Officer	D. Mell
Wildlife Officer (Special Invest.)	P. Pennings
Wildlife Officer	P. Counsel
Wildlife Officer	M. Mahoney
Wildlife Officer	T. Walley
Wildlife Officer	A. Shields
Wildlife Officer (Rel.)	G. Hanley
Wildlife Officer (Rel.)	D. Noble
Wildlife Officer (Flora)	S. Hancocks (B. App. Sc.)
Wildlife Officer (Flora)	D. Coughran
Trainee Wildlife Officer	L.R. Anderson
Trainee Wildlife Officer	J.C. Crane
Wildlife Officer (attached)	J. Wilson

#### Districts

Wyndham	District Wildlife Officer M. Osborn
Karratha	Vacant
Carnarvon	District Wildlife Officer K. Marshall
Mt. Magnet	District Wildlife Officer R. Gueho
Geraldton	District Wildlife Officer K. Miller Wildlife Officer S. Smyth
Moora	District Wildlife Officer B. Haberley
Wongan Hills	District Wildlife Officer P. Roberts
Kalgoorlie	District Wildlife Officer P. Collins
Pingelly	District Wildlife Officer L. Silvester
Waroona	District Wildlife Officer R. Fitzgerald
Busselton	District Wildlife Officer P. Lambert
Esperance	District Wildlife Officer I. Cooke
Manjimup	District Wildlife Officer R. Coughran
Albany	District Wildlife Officer R. Smith Wildlife Officer L. Coyne

### 3. RESEARCH AND RESERVE MANAGEMENT

The Wildlife Research Section comprises eight Research Officers, seven Technical Officers and one Technical Assistant, all of whom are based at the Western Australian Wildlife Research Centre, Woodvale.

The Reserve Management Section comprises five professional Reserve Management Officers, four Reserves Officers and one Technical Officer. Two officers are based at Pingelly, one at Karratha, one at Two Peoples Bay Nature Reserve, one in Perth and the remainder at Woodvale.

During the year, two positions were created for the establishment of the Katanning Management Team. These two positions, a Reserve Management Officer and a Reserves Officer, have been advertised and are expected to be filled in the near future.



## XI EXTENSION AND PUBLICITY

Increasing interest in wildlife conservation has been reflected in growth in demand for information material and this trend has been noted in previous reports. Numerous requests and enquiries have been received by the Extension and Publicity Office from students, teachers, government departments, businesses and other sectors of the community.

This has resulted in many additions being made to the distribution lists for the Department's research publications and for the wildlife journal *SWANS*. These publications are issued to many individuals and organisations throughout the world.

During the year a new series of wildlife posters was launched. The first two posters, i.e. "Mammals of the South West of Western Australia" and "Kangaroo Paws and Catspaws of Western Australia" were released.

During 1982-83 there were additions to the Department's wildlife conservation publications, i.e.

Report 53 Burgman, M.A. and Hopper, S.D. (1982).  
The Western Australian wildflower industry 1980-81.

Report 54 Patrick, S.J. and Hopper, S.D. (1982).  
A guide to the gazetted rare flora of Western Australia: Supplement 1.

Report 56 Lane, J.A. and Munro, D.R. (1982).  
1981 review of rainfall and wetlands in the south-west of Western Australia.

Report 58 Lane, J.A. and Munro, D.R. (1983).  
1982 review of rainfall and wetlands in the south-west of Western Australia.

Wildlife Research Bulletin No. 11

McKenzie, N.L. (Ed.) (1983).  
Wildlife of the Dampier Peninsula, South-West Kimberley, Western Australia.

Western Australian Nature Reserve Management Plans

4. Crook, I.G. and Burbidge, A.A. (1982).  
Lake Magenta Nature Reserve.

Three editions of the wildlife journal *SWANS* were published during 1982-83 (Vol. 12 No. 2 and 3, Vol. 13 No. 1).

Stocks of leaflets and other information material were reprinted and revised as necessary throughout the year.

Static displays with captioned colour photographs showing native mammals and rare flora species have been prepared. They are available for loan to schools and other interested bodies.

## XII FINANCE

### 1. WILDLIFE CONSERVATION ACT

The demands on the Department to continually expand its involvement in the areas of wildlife conservation, research and enforcement, and the requirement to maintain existing activities, require increasing expenditure each year from the Consolidated Revenue Fund. This trend has continued in 1982-83.

### 2. WILDLIFE CONSERVATION TRUST FUND

A financial statement as at 30 June 1983 is presented on the following page.

WILDLIFE CONSERVATION TRUST FUND

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED JUNE 30 1983

	\$	\$
BALANCE AS AT JULY 1 1982		79 640
Add RECEIPTS		
Duck Shooters Licenses	22 446	
Interest on Investments	11 208	
Flora Licenses	3 021	
Bequests and Gifts	322	
Quail Licenses	285	
Sales of Posters	126	
Sales of Skins and Carcasses	75	37 483
	<u>          </u>	<u>          </u>
		117 123
Less PAYMENTS		
Survey of Waterbird Usage of Wetland Nature Reserves	13 472	
Atlas of the W.A. Flora Pilot Project - Computer Programming	8 900	
Translocation of Noisy Scrub Bird	4 660	
Numbat Survey	3	27 035
	<u>          </u>	<u>          </u>
BALANCE AS AT JUNE 30 1983		<u>\$90 088</u>

Balance at June 30 1983 represented by:-

Investments	93 000	
LESS - Overdrawn Balance	2 912	\$90 088
	<u>          </u>	<u>          </u>

*BK Bowen*

DIRECTOR  
DEPARTMENT OF FISHERIES AND WILDLIFE

August 19 1983



## AUDIT DEPARTMENT

State Insurance House, 815-823 Hay Street,  
Perth. W.A. 6000. Telephone 321 9256

IN REPLY PLEASE QUOTE

846/66

### REPORT OF THE AUDITOR GENERAL FOR WESTERN AUSTRALIA

#### WILDLIFE CONSERVATION TRUST FUND - Audit of Accounts

The accounts of the Wildlife Conservation Trust Fund have been audited for the year ended June 30, 1983 and were found to be in order.

In my opinion the Statement of Receipts and Payments submitted for audit is properly drawn up so as to present a true and fair view of the transactions for the year and the balance of the Fund as at June 30, 1983.

*W.F. Bølston*  
W.F. BØLSTON  
AUDITOR GENERAL  
August 22, 1983