# LIBRARY

Department of Biodiversity,
Conservation and Attractions

This PDF has been created for digital preservation. It may be used for research but is not suitable for other purposes. It may be superseded by a more current version or just be out-of-date and have no relevance to current situations.



# DEPARTMENT OF FISHERIES & WILDLIFE ROLE & STRUCTURE

# DIRECTOR

B.K. Bowen, B.Sc.

# CONSERVATOR OF WILDLIFE & SECRETARY

H.B. Shugg, A.A.P.A., A.F.A.I.M.

108 Adelaide Tce., Perth WESTERN AUSTRALIA August 1978

# INDEX

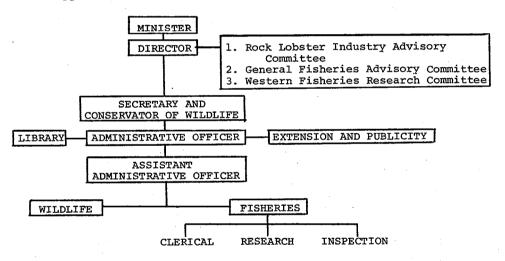
|              |                |               |       |         |            |         |         | Pages           |
|--------------|----------------|---------------|-------|---------|------------|---------|---------|-----------------|
| Acts         |                |               |       |         |            |         |         | 1, 2, 9, 10     |
| Administrat  | tion           | •••           |       | •••     | •••        | •••     | • • •   | 1, 9, 13        |
|              |                |               |       |         |            | •••     | •••     | 1, 3, 13        |
| Birds        |                |               |       |         |            |         |         | 12              |
|              |                |               |       | • • •   | • • • •    |         | •••     |                 |
| Conservation | on Bod         | ies an        | d Com | mittees | s <b>-</b> |         |         | • ,             |
|              | Fishe          |               | • • • | • • •   |            |         | • • •   | 1, 2, 3, 4      |
|              | Wildl          | ife           | • • • |         | • • •      | •••     | • • •   | 9, 10, 11, 12   |
| District O   | ffices         |               |       |         |            | •••     |         | 4, 5, 17, 18    |
|              |                |               |       |         |            |         | •••     |                 |
| Enforcemen   | t and          | Inspec        | tion  |         |            |         |         | 4, 5, 12, 13    |
| Flora        | • • •          | •••           | • • • | • • •   |            |         | • • •   | 10, 12          |
| Finance      | • • •          | • • •         | • • • | • • •   | • • •      | • • •   | • • •   | 4, 12, 13       |
| Fisheries ·  | 7              |               |       |         | •          |         |         |                 |
|              | Inspe<br>Resea | ction         |       | • • •   | • • •      | • • •   | • • • • | 4, 5            |
|              |                | ren<br>istrat | ion   | •••     | • • • •    | •••     | • • •   | 6, 7, 8<br>1, 2 |
| Function (   | Dept.)         |               | • • • | • • •   | • • •      | • • •   | •••     | 1, 9            |
| Game         |                |               |       |         |            |         |         | 12              |
|              |                | •••           | • • • |         | •••        | •••     | •••     |                 |
|              |                |               |       |         |            |         |         |                 |
| Honorary F   | isheri         | es Ins        | pecto | rs      | •••        | . • • • | • • •   | 1, 4            |
| Inspection   | and E          | nforce        | ment  | • • •   |            | • • •   | •••     | 4, 5, 12, 13    |
| Kangaroos    |                |               |       |         |            |         |         | 9, 11, 16       |
| rangaroob    | •••            | •••           | •••   | •••     | • • •      | •••     | •••     | J, 11, 10       |
| Licensing    | •••            | •••           | •••   | • • •   | •••        |         | •••     | 12              |
| Marron       | •••            | •••           | •••   | •••     | •••        | •••     | •••     | 7, 8            |
| Objectives   | (Dent          | 1             |       |         | ٠          |         |         | 2 10            |

|            |            |          |         |         |         |         | rages                                 |
|------------|------------|----------|---------|---------|---------|---------|---------------------------------------|
| Patrols    | •••        |          | • • •   |         | •••     | •••     | 5, 6                                  |
| Pemberton  | Hatchery   | • • •    | • • •   |         |         | • • •   | 7, 8                                  |
|            | •••        |          |         |         | • • •   |         | 6, 7, 13                              |
| Projects   |            |          |         | • • •   | •••     | •••     | 7, 16                                 |
| Publicity  | •••        |          | • • •   |         |         |         | 8, 14, 15                             |
| •          |            |          | • • • • |         |         | •••     | 0, 14, 15                             |
| Radio Comm | unications | ·        |         |         |         |         | 8, 15                                 |
| Research - |            |          |         |         |         |         | · · · · · · · · · · · · · · · · · · · |
|            | Fisheries  |          |         |         |         |         | 6, 7, 8                               |
|            | Fauna and  |          | •••     | •••     | • • •   | • • • • | 16                                    |
| Reserves   | •••        |          |         | • • •   |         | • • •   | 13, 14                                |
| Revenue    | •••        | • • •    | • • •   | • • •   |         |         | 13                                    |
| Rock Lobst | er         |          | • • •   |         |         |         | 2                                     |
|            |            |          |         |         |         |         |                                       |
| Staff      | •••        | • • •    | • • •   | • • •   | •••     | •••     | 13, 19-28                             |
| Trout      | •••        |          |         |         |         |         | 7, 8                                  |
| Trusts     | •••        |          | • • •   |         |         |         | 4, 12                                 |
| Trust Fund |            |          |         | • • • • | • • • • | •••     | 12                                    |
|            |            |          | •••     | •••     | •••     | •••     |                                       |
| Vessels    |            |          |         |         |         |         | 5, 6                                  |
|            |            | •••      | •••     | •••     | •••     | . •••   | 3, 0                                  |
| Wanneroo W | ildlife Re | search ( | Centre  |         |         | •••     | 16                                    |
|            | arine Rese |          |         | • • • • | •••     |         | 6                                     |
|            | uthority   |          |         |         | •••     |         |                                       |
|            | fficers    |          |         |         |         |         | 10, 11                                |
| Wildlife - |            | •••      |         |         | •••     | •••     | 12, 13                                |
|            | Administ   | ation    |         |         |         |         | 9, 10, 13                             |
|            | Inspection |          | nforcem |         | • • •   | • • •   |                                       |
|            | Research   |          |         |         |         |         | 12 13                                 |

### A. GOVERNMENT DEPARTMENT

Structure: Fisheries management is the responsibility of a branch of the State Department of Fisheries and Wildlife, 108 Adelaide Terrace, Perth. The branch consists of the Director, Secretary/Conservator of Wildlife, Administrative Officer, Clerical Section, Western Australian Marine Research Laboratories, Fisheries Inspectors and appointed Honorary Fisheries Inspectors.

It is to be noted that Policemen are also Fisheries Inspectors under the Fisheries Act, and that Wildlife Officers are appointed under the Act as Fisheries Inspectors.



<u>Function</u>: In Western Australia, the Department of Fisheries and Wildlife administers the following Acts for the Government of the day in the name of the Minister for Fisheries and Wildlife:

Fisheries Act 1905 Whaling Act 1837 Pearling Act 1912 Oyster Act 1881

Also, the following Commonwealth Acts by delegation of powers by the Commonwealth Fisheries Act:

Whaling Act Fisheries Act Continental Shelf (Living Natural Resources) Act

The general function of the Fisheries branch is the management of the various fisheries.

Aims and Objectives: To ensure that fishing pressure does not exceed the maximum sustainable yield and that the fisheries are operated at an economic level in the best interests of both the professional and amateur fisherman. The development of new fisheries and the exploitation of new fishing grounds is an integral part of the management programme.

### B. ADVISORY BODIES

# 1. Rock Lobster Industry Advisory Committee

This is an advisory body set up under the Fisheries Act. When requested by the Minister, the Committee inquires into and reports on any matter in relation to the rock lobster industry in Western Australia or any adjacent waters.

The Committee may, at its own discretion, also make recommendations to the Minister on questions relating to the management, control, protection, regulation and development of the rock lobster fishery.

The structure and membership of the Committee is either seven or eight members appointed by the Minister -

- (a) two officers of the Department of Fisheries and Wildlife and one of those officers shall be appointed by the Minister to be the Chairman of the Committee;
- (b) two members of the Rock Lobster and Prawning Association of Australia, Inc., nominated by that body;
- (c) three fishermen who, for commercial purposes, are actually engaged in the taking of rock lobsters; and
- (d) where the Committee consists of eight members, one shall be a person appointed to represent those who are not commercially engaged in fishing or the fishing industry.

# 2. General Fisheries Advisory Committee

The role of this Committee is the same as the Rock Lobster Industry Advisory Committee, except that it relates to general fisheries only and specifically excludes rock lobster.

The structure and membership of the Committee is either five or six members appointed by the Minister -

- (a) two officers of the Department of Fisheries and Wildlife and one of those officers shall be appointed by the Minister to be the Chairman of the Committee;
- (b) one fisherman, who, for commercial purposes, is actually engaged in fishing in estuaries and on beaches:
- (c) one fisherman who, for commercial purposes, is actually engaged in deepsea fishing other than for rock lobsters;
- (d) one amateur fisherman; and
- (e) where the Committee consists of six members, one shall be a person appointed to represent persons who are not commercially engaged in fishing or the fishing industry.

# 3. Western Fisheries Research Committee

This Committee was appointed in 1961 by the Minister for Fisheries and Wildlife (then the Hon. Ross Hutchinson, M.L.A.) and held its first meeting from November 27 to 29 of that year. The terms of reference are:-

- To guide, review and co-ordinate research programmes and to determine priorities in relation to manpower and equipment.
- (2) To accept responsibility for recommending the introduction or modification of management and development measures.
- (3) To receive reports from all research officers engaged in fisheries studies in Western Australian waters.
- (4) To appoint sub-committees, or working groups, as required.

Structure: The Committee comprises members nominated either as individuals or representatives of organisations:

- (a) Director, Department of Fisheries and Wildlife Chairman
- (b) Professor A.R. Main, Zoology Department, University of Western Australia
- (c) A representative of the Division of Fisheries and Oceanography, CSIRO
- (d) A representative of the Fisheries Branch, Department of Primary Industry
- (e) Director of Fisheries, South Australia

A Project Leader is permanently appointed by the Committee to co-ordinate and control the various research programmes which come within the jurisdiction of the Committee.

Procedure: The meeting of the Committee is conducted annually over four days with the first three days being assigned to the Technical Session where each research officer reports on his programme in relation to progress, recommendations and future activity. This is openly discussed by the Technical Session and recommendations are prepared for submission to the Plenary Session which is conducted by members of the Committee. Final recommendations are then submitted to the Minister.

Progress: Much of the progress and stability of the various fisheries in the State is the direct result of the efforts and programmes of the Western Fisheries Research Committee. Probably the most concrete example of its influence has been in the fields of rock lobster and prawn conservation in Western Australia.

### C. TRUSTS

The "Fisheries Research and Development Fund" was established under the Fisheries Act in 1967 and is administered and controlled by the Minister.

It consists of moneys derived from fees paid by those engaged in limited entry fisheries, proceeds of fish taken during development and research programmes, income from investment of Fund money and any gifts or bequests.

The money may be used and applied by the Minister for such fisheries purposes as:

- (a) scientific, technological or economic research;
- (b) investigation, exploration and development of fisheries;
- (c) the provision of extension services: and
- (d) assisting the fishing industry and such bodies whose objects include assistance to or promotion of the fishing industry.

### D. INSPECTION AND ENFORCEMENT

<u>Staff</u>: There are eighteen District Fisheries Offices in the State administered from the Head Office in Perth.

The Inspection section of the Fisheries Branch has a staff of 56 under the control of the Supervising Inspectors and Chief Inspector. There are also some 102 Honorary Inspectors who have been appointed for specific purposes in various districts.

# Function: The functions of the Inspection Section are:

- To ensure that the fishing industry works within the Acts, Regulations, Proclamations, Notices and Ministerial Directions handed down.
- (2) To investigate and report breaches of the Acts.
- (3) To provide the Administration with information on developments within the fishing industry.
- (4) To liaise with and assist industry.

# Offices: Head Office - Perth

Chief Inspector
Supervising Inspector - 6 Trainee Inspectors
Special Investigations Officer - 2 Special
Investigations Inspectors (Foreign Vessels)

All these officers have radio communications equipment when operating in the field.

# Mobile Patrols - Perth Based:

No. 1 Mobile Patrol - 2 Inspectors, Radio, Patrol Vessel "Skua" 21 ft

No. 2 Mobile Patrol - 2 Inspectors, Radio, 16 ft runabout Marron Patrol - 1 Inspector, Radio

# District Offices:

| Location    | Shore-<br>based<br>Staff | Radio<br>Equipped | Patrol<br>Vessels                         | Vessel<br>Staff | Principal Activity                 |
|-------------|--------------------------|-------------------|---|-----------------|------------------------------------|
| Albany      | 3                        | Yes               | -   | -               | General Fisheries/<br>Whaling      |
| Bunbury     | 2                        | Yes               | ÷   | -               | General Fisheries                  |
| Mandurah    | 1                        | -                 | -   | -               | General Fisheries                  |
| Fremantle   | 3                        | <del>-</del>      | PV "Pelsart"<br>42'<br>PV "Tasman"<br>54' | 6               | General Fisheries/<br>Rock Lobster |
| Perth       | 3                        | Yes               | <b>-</b> ,                                | · -             | General Fisheries                  |
| Seabird     | 1                        | -                 | <u>-</u>                                  | · _             | Rock Lobsters                      |
| Ledge Point | 1                        | -                 | _   | _               | Rock Lobsters                      |
| Lancelin    | 1                        | Yes               | <del>-</del>                              | _               | Rock Lobsters                      |
| Cervantes   | 1                        | Yes               | _   | ·               | Rock Lobsters                      |
| Jurien Bay  | 2                        | Yes               | <del>-</del>                              | _               | Rock Lobsters                      |
| Dongara     | 1                        | <u>-</u>          | · =                                       | -               | Rock Lobsters                      |

# District Offices (continued)

| Location  | Shore-<br>based<br>Staff | Radio<br>Equipped | Patrol<br>Vessels     | Vessel<br>Staff | Principal Activity         |
|-----------|--------------------------|-------------------|-----------------------|-----------------|----------------------------|
| Geraldton | 3                        | Yes               | "Phillip<br>King" 52' | _               | Rock Lobsters              |
| Shark Bay | 1                        | Yes               | "Avocet"<br>21'       | <u></u> '       | General Fisheries          |
| Carnarvon | 2                        | Yes               | "Frey-<br>cinet" 47'  | 2               | Prawning                   |
| Broome    | 1                        | Yes               | -                     | <del>-</del>    | Pearling Super-<br>vision  |
| Karratha  | 1                        | Yes               | . <del>-</del>        | -               | Wildlife Conser-<br>vation |
| Esperance | 1                        | Yes               | -                     | <del>-</del>    | Wildlife Conser-<br>vation |
| Busselton | 1                        | -                 | <del>-</del>          | -<br>-          | Wildlife Conser-<br>vation |
| Wyndham   | 1                        | Yes               |                       | -               | Wildlife Conser-<br>vation |

### E. RESEARCH

Laboratories: The Western Australian Marine Research Laboratories are located on the foreshore of West Coast Highway, Waterman.

The aquarium facilities of the laboratories are used by officers of the CSIRO Division of Fisheries and Oceanography and a small laboratory adjoining the main building is operated by the University of Western Australia.

The laboratories are not open to the general public.

<u>Vessels</u>: The 67 ft steel research vessel "Flinders" is used in rock lobster and prawn research programmes. The vessel, based at Fremantle, carries a crew of 5 -

Master Mate Engineer 2 Deckhands

### Staff:

Chief Research Officer 14 Research Officers

- 9 Technical Officers
  - 7 Technical Assistants
  - 3 Administration
  - 1 Engineer

# Pemberton Fish Hatchery -

Manager Technical Assistant General Assistant

# Equipment Office - Fremantle -

General Assistant

### Function:

- (1) To undertake research on exploited fish populations.
- (2) To provide information for Administration on the effect of management measures in force in relation to the major exploited fish populations, and to recommend management procedures.
- (3) To provide advice to Administration on the benefits of alternative management measures on developing or expanding fisheries.
- (4) To undertake research on the potential of unexploited and lightly exploited fish populations. A special team, located in the Head Office at Perth, is responsible for this and comprises -
  - 1 Research Officer (Development)
  - 1 Senior Technical Officer
  - 2 Technical Officers
  - l Technical Assistant

Projects: The major study projects, in various degrees of intensity, are:-

Rock Lobster
Prawns
Whiting
Tuna
Salmon
Scallops
Marron
Trout
Heavy metals in fish species
Pilchards
Estuarine research

Other lesser programmes include Abalone and Mussels.

<u>Publications</u>: Reports and Bulletins are published on all aspects of research undertaken and of developmental surveys. These are distributed to other marine research organisations, libraries, fishing companies and other members of the fishing industry.

Pemberton Fish Hatchery: The hatchery was established in 1935 and, until 1971, was operated by the Pemberton Society. In 1971, the hatchery came under the control of the Department. Today, the functions of the hatchery are:-

- The breeding of trout and marron for liberation into public waters.
- (2) The sale of trout fry and fingerlings and marron for private waters.
- (3) To provide a tourist attraction for the district.

Any enquiries regarding the purchase of trout or marron for farm dams or other private waters should be made direct to:-

The Manager
Pemberton Fish Hatchery
P.O. Box 91
PEMBERTON 6260
Telephone: Pemberton 44

F. RADIO COMMUNICATIONS (Combining both Fisheries and Wildlife branches)

<u>Single Side-band Network</u>: The Departmental SSB network consists of Base Stations at Head Office, Perth, the Western Australian Wildlife Research Centre, Woodvale, and Geraldton District Office. These bases are in contact with mobile radio fitted vehicles and patrol vessels throughout the State.

Handphone Network: This network consists of 32 new Handic H21 Transceivers low-power hand radios. These are located in most districts and are used for control of operations requiring portable communication over short distances. Six new VHF Tamephine Handheld sets have also been commissioned.

Control: All aspects of radio communications are controlled from Head Office, Perth, by the Radio Communications Officer.

 $\underline{\text{VHF}}$  Metropolitan Link: Consists of a Base Station at Perth Head Office and 3 VHF mobiles and six handheld sets.

G. FLEET MAINTENANCE OFFICE - FREMANTLE

Fleet Maintenance Officer General Assistant

### H. EXTENSION AND PUBLICITY

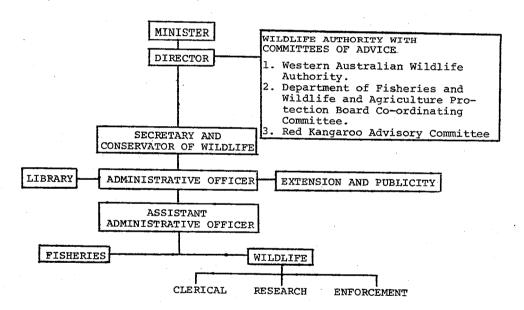
Responsible for the editing and production of all Reports and Bulletins, Press releases, exhibitions, boat launching ceremonies, photography, writing and publication of general information booklets, etc.

A quarterly journal, F.I.N.S. (Fishing Industry News Service) is produced and distributed to all members of the fishing industry and allied trades.

### A. GOVERNMENT DEPARTMENT

Structure: Wildlife Conservation is the responsibility of the State Department of Fisheries and Wildlife. This branch consists of the Director, Secretary/Conservator of Wildlife, Administrative Officer, Clerical Section, Research Centre, Wildlife Officers (field) and appointed Honorary Wildlife Officers.

It is to be noted that Policemen, Forest Officers and Fisheries Inspectors are also Wildlife Officers under the Act.



Function: In Western Australia, the Department of Fisheries and Wildlife administers the Wildlife Conservation Act 1950-1975 for the Government of the day, in the name of the Minister for Fisheries and Wildlife.

The general function of the Wildlife branch is the conservation of wildlife and the management of nature reserves within the State.

Aims and Objectives: To provide for the conservation and protection of wildlife, that being:

- (a) Flora All our native Western Australian plants (including any wildflower, palm, shrub, tree, fern, creeper or vine) and any plant which has been declared to be "flora" within the Wildlife Conservation Act;
- (b) Fauna All native Australian vertebrate animals birds, mammals, frogs and reptiles plus others which have been declared to be "fauna" within the meaning of the Wildlife Conservation Act.

### B. ADVISORY BODIES

There are three wildlife advisory bodies, namely the Western Australian Wildlife Authority, the Department of Fisheries and Wildlife and Agriculture Protection Board Co-ordinating Committee and the Red Kangaroo Advisory Committee.

# 1. The Western Australian Wildlife Authority

This is an advisory body under the Wildlife Conservation Act.

It is a body corporate with perpetual succession and a common seal. It may sue and be sued and deal in all aspects of real and personal property. The Authority shall inquire into, and report to the Minister on any matters referred to it by him or by the Conservator of Wildlife in relation to the conservation of fauna in the State. With the approval of the Minister, the Authority may carry out or cause to be carried out such research into the conservation and protection of fauna as it thinks fit.

Many of the State's nature reserves are vested in the Authority.

The Authority consists of eleven members including the Chairman of the Authority, of which members -

- (a) four referred to in this section are ex officio members and persons for the time being holding the office of -
  - (i) Director, who is the Chairman of the Authority;
  - (ii) Conservator of Wildlife under this Act, is the Deputy Chairman of the Authority and Chief Executive Officer thereof;
  - (iii) Chief Vermin Control Officer under the Vermin Act, 1918; and

- (iv) Conservator of Forests under the Forests Act, 1918 (or a person nominated by the Conservator as his deputy); and
- (b) seven referred to in this section as the appointed members who are appointed by the Minister and of whom -
  - (i) one is a botanist;
  - (ii) two are zoologists; and
  - (iii) four are persons who are not officers within the meaning of the Public Service Act, 1904 and of whom one at least has a wide practical knowledge of the native fauna of the State and one of whom represents country interest; and
- (c) each appointed member -
  - (i) holds office as a member of the Authority for a term of three years; and
  - (ii) is eligible for re-appointment on the expiration of his term of office as member of the Authority.

# 2. Department of Fisheries and Wildlife and Agriculture

# Protection Board Co-ordinating Committee

The function of this Committee is to co-ordinate common areas of administration and policies between the Agriculture Protection Board and the Department of Fisheries and Wildlife. There are ten representatives, these being -

Three members of the Agriculture Protection Board
Three members of the Department of Fisheries and Wildlife
Two representatives from CSIRO
One advisor

One secretary

# 3. Red Kangaroo Advisory Committee

This body was formed to co-ordinate the various managerial and biological aspects incurred in the harvesting of kangaroos for the marketing of meat, skin and by-products.

It consists of five Department of Fisheries and Wildlife Officers:-

The Director/Chairman Conservator of Wildlife Executive Officer Clerical Officer/Secretary One Research Officer Two members of the Agriculture Protection Board. Eight members representing the Industry (Pastoralists, Shooters and Processors).

# C. TRUSTS AND LOCAL COMMITTEES

From its members the Western Australian Wildlife Authority appoints standing committees upon which a number of co-opted members serve.

# 1. Reserves Committee

To report, advise and make recommendations to the Authority on matters concerning nature reserves and their acquisition and management.

# Bird Committee

This committee inquires into, advises and recommends on matters relating to conservation of avian fauna and matters relating to the management of populations of individual bird species and required licensing under the Wildlife Conservation Act and Regulations.

# Flora

This committee enquires, advises and recommends on matters relating to conservation of native flora and permitted exploitation within the wildflower and seed industry.

### D. THE TRUST FUND

The Wildlife Conservation Trust Fund was established under the Wildlife Conservation Act 1950-1975. The Fund is administered and controlled by the Minister. It consists of moneys obtained from Duck Shooting licenses, gifts, bequests and proceeds from any investment of part of the Fund. The Minister may use this Fund for any research into the conservation of wildlife.

# E. ENFORCEMENT

There are fifteen District Wildlife Offices in the State. The enforcement section of the Wildlife Branch has a staff of twenty-six Wildlife Officers and Trainee Wildlife Officers under the supervision of the Chief Wildlife Officer and the Supervising Wildlife Officer.

The functions of the section are:-

To ensure that statutory protection under the Wildlife Conservation Act is afforded the Western Australian wildlife

and the conservation measures are carried out.

To report breaches of the Act, Regulations, Proclamations, Notices and Ministerial Directions.

To provide Administration and Research with information on wildlife observations generally.

# F. ADMINISTRATION

<u>Finance</u>: The source of revenue is from the State Consolidated Revenue Fund - Department of Fisheries and Wildlife Vote.

While specific funds are allocated to wildlife activities, research, reserves and equipment, etc., the administrative and clerical officers are shared by both the Fisheries and wildlife branches. Items such as telephone, insurance, library and stationery are also met by the Department as a single entity.

<u>Staff</u>: The number of Fisheries and Wildlife Department staff throughout the State totals 199; of these, 51 are field and research officers engaged on Wildlife Branch activities. The Department of Fisheries and Wildlife incorporates:-

The Director
The Secretary/Conservator of Wildlife
Two Administrative Officers
Two Extension and Publicity Officers
One Radio Communications Officer
37 Clerical Division Officers
Two Librarians
40 Fisheries Research and Technical Staff
26 Wildlife Research and Technical Staff
59 Fisheries Inspection Staff
28 Wildlife Enforcement Staff
Two Fleet Maintenance Officers
Five, Research Vessel "Flinders"
Two, Pemberton Fish Hatcheries
One Gear Officer

### G. LAND USE

As at August 30, 1977, the total number of nature reserves administered in Western Australia in regard to wildlife conservation numbered 977 with a total area of 8 386 217 ha. Of these, 398 reserves, with a combined area of 8 228 508 ha, were vested in the Western Australian Wildlife Authority. The remaining nature reserves have dual purposes and are vested in other authorities such as the Ministers for Lands, Fisheries and Wildlife, Works and Water Supplies. Within all the nature reserves, there are three types which require special mention -

# 1. Primitive Reserves

These are large reserves in remote areas of the State, needing less scientific management to maintain natural status. An example is the Northern Nullarbor Nature Reserve approximately 2.5 million ha.

# Rare species reserves

A place where nature has decreed that a rare species of wildlife shall inhabit areas which are subject to human usage or interference. These are usually very small regions. Examples are: the Short-necked Tortoise Reserves at Twin Swamps and Ellen Brook, being 222 ha. combined, and the Noisy Scrub Bird Reserve at Two Peoples Bay, 4 637 ha. Also there is Tutanning Reserve which is small at approximately 2 000 ha and supporting about a dozen species of marsupial.

# 3. Wetland Reserves

For the protection and maintenance of waterfowl populations. Examples are the Benger Swamp, home of the Freckled Duck, and Lake Muir, a sanctuary for many species of waterfowl.

### H. EDUCATION AND TRAINING

Staff at all levels are encouraged at all times to attain a high level of academic education in their respective fields. Enforcement staff attend the R.H. Doig Executive Development Centre and many Bush Fires Board Schools.

Education of the public is carried out in the form of lectures to schools and community bodies when staff are available.

A quarterly wildlife journal (S.W.A.N.S.) is written in a manner so as to educate both the public and field staff on matters of conservation, wildlife management and Departmental procedures. This journal is distributed to all Wildlife Officers, conservation organisations and, upon request, to various libraries.

### I. PUBLICATIONS AND PUBLIC INFORMATION

Coverage of important matters relating to wildlife and habitat preservation is released through the various news media by the Extension and Publicity Office of the Department of Fisheries and Wildlife.

Staff officers are involved in both radio and television sessions outlining policy and activities and discussing wildlife conservation in general terms.

The Department's quarterly journal "S.W.A.N.S." (State Wildlife Advisory News Service) is received locally and internationally.

Reports and Bulletins are published on all aspects of research undertaken and of field surveys and studies and are distributed on request to research institutes, conservation agencies and libraries.

Leaflets on general wildlife subjects are printed for the public, together with pictorial and descriptive leaflets - some of the rare and endangered species.

### J. INTERSTATE AND INTERNATIONAL LIAISON

Because of similar interests and problems the Department maintains a close working relationship with State and Commonwealth Government authorities throughout Australia.

Western Australia participates in "The Council of Nature Conservation Ministers Conference" which is held annually.

Liaison and exchange is maintained with overseas countries in respect of Scientific Departmental Reports and Bulletins.

# K. RADIO COMMUNICATIONS (Combining both Fisheries and Wildlife branches)

<u>Single Side-band Network</u>: The Departmental SSB network consists of Base Stations at Head Office, Perth, the Western Australian Wildlife Research Centre, Woodvale, and Geraldton District Office. These bases are in contact with mobile radio fitted vehicles and patrol vessels throughout the State.

Handphone Network: This network consists of 32 new Handic H21 Transceivers low-power hand radios. These are located in most districts and are used for control of operations requiring portable communication over short distances. Six new VHF Tamephine Handheld sets have also been commissioned.

<u>Control</u>: All aspects of radio communications are controlled from Head Office, Perth, by the Radio Communications Officer.

VHF Metropolitan Link: Consists of a Base Station at Perth Head Office and 3 VHF mobiles and six handheld sets.

### L. LIBRARY

The Department maintains a library with worldwide coverage of wildlife publications. Its staff consists of a librarian and assistant who maintain an international exchange system of technical papers. A service is also provided to local bodies enquiring into wildlife as well as the day to day needs of Departmental staff.

### M. RESEARCH

Research undertaken by the officers of the Western Australian Wildlife Research Centre at Woodvale covers kangaroos, waterfowl, estuarine birds, reserve management, biological surveys of offshore islands and the mainland, pesticides, plant ecology and fire ecology.

Various research programmes presently being undertaken by research staff at the Wanneroo Wildlife Research Centre are:-

- A continuing programme of tagging and data collection on Short-necked Tortoises.
- 2. Waterbird Research including -
  - (a) acquisition and surveys of wetlands
  - (b) data collection and interpretation
  - (c) population management through duck shooting season
- Macropod Research presently involving kangaroo management only through -
  - (a) population dynamics and monitoring of kangaroo industry
  - (b) data collection
  - (c) biological sampling
  - (d) interpretation
- Reserve Acquisition a State-wide survey of reserves is being undertaken Shire by Shire, involving surveys of flora and fauna on Crown land and recommendations re reservation.
- Estuarine Research an overall programme including food chains for avian fauna, etc. Studying of pelican colonies.
- 6. Reserve Management including -
  - (a) policy making
  - (b) planning
  - (c) investigation of fire behaviour
- 7. Plant Ecology a programme into aspects of vegetation regeneration following fire - aim is to determine optimal burning conditions and intervals between fires which will enable maintenance of a desirable quality and quantity of animal habitat.
- Fire Ecology studies carried out initially in areas of high fire risk - to be expanded to include other important conservation areas.
- Flora Conservation studies have commenced aimed at managing the wildflower industry and delineating which species of flora need special protection.

# N. PROPOSED FUTURE DEVELOPMENT

The current financial climate precludes any firm planning for future development, although it is envisaged that there will be additional projects undertaken as funds become available.

# O. DEPARTMENT OF FISHERIES AND WILDLIFE DISTRICT OFFICES

### HEAD OFFICE:

108 Adelaide Tce., Perth Tel. 325 5988

### ALBANY:

Stirling Tce. Tel. 41 4811

### BROOME:

Hamersley Street Tel. 92 1121

### BUNBURY:

Stirling Street Tel. 21 2598

### BUSSELTON:

14 Queen Street Tel. 52 2152

# CARNARVON:

16 Robinson Street Tel. 41 1185

### DONGARA:

Carnarvon Street Port Denison Tel. 27 1187

### DENHAM:

Knight Terrace Tel. 48 1210

### ESPERANCE:

Wallaceway Centre Tel. 71 1839

### FREMANTLE:

Cliff Street Tel. 335 6369

### GERALDTON:

Fisherman's Wharf
Tel. Wildlife - 21 3510

Fisheries - 21 1956

### JURIEN BAY:

Padbury Street Tel. 48 1048

### KALGOORLIE:

Maritana House, Boulder Road Tel. 21 4148

### KARRATHA:

Lot 750, Andover Way Tel. 85 1427

### LANCELIN:

Bootoo Street Tel. 78 1111

### MANDURAH:

Leslie Street Tel. 35 1240

### MANJIMUP:

Department of Agriculture Tel. 71 1299

### MOORA:

Padbury Street Tel. 41 1055

### MT MAGNET:

Hepburn Street Tel. 96

### PEMBERTON:

Trout Hatchery Tel. (097) 76 1044

# PERTH:

Ellam Street, Victoria Park Tel. 361 3996 361 2731

# PINGELLY:

Park Street Tel. 273

# SHARK BAY:

Knight Terrace, Denham Tel. 48 1210

# WAROONA:

Four Acre Street Tel. 33 1331

# WONGAN HILLS:

Fenton Street Tel. 232

# WYNDHAM:

PWD Office - 3 Mile Tel. 61 1342

# DEPARTMENT OF FISHERIES AND WILDLIFE

# STAFF

### AS AT JULY 20, 1978

### ADMINISTRATION

B.K. Bowen Director

H.B. Shugg Secretary/Conservator of Wildlife

A.J. Mearns Administrative Officer

D.W. Arnold Assistant Administrative Officer

B. Jones Secretary to the Director

# EXTENSION AND PUBLICITY

A.C. (Colin) Waldon Extension and Publicity Officer

J.L. (John) Hunter Assistant Publicity Officer

M.M. (Michelle) Marzo Extension and Publicity Assistant

# FISHERIES RESEARCH AND DEVELOPMENT

J.P. (Jack) Robins Senior Research Officer K.F.C. (Kitch) Godfrey Senior Technical Officer

P.G. (Peter) Edsall R.M. (Ray) Walker D.G. (Dave) Readshaw Technical Officer Technical Officer

Technical Assistant

### LIBRARY

E. (Liz) Laczo Assistant Librarian

S.J. (Simon) Hancocks Library Assistant

# RADIO COMMUNICATIONS

H. (Hans) Schneiker Radio Communications Officer

# CLERICAL

D.L. (Don) Jennings Clerk in Charge

### Records

A.J. (Tony) Goadby Senior Clerk

G. (Guy) Alessandro Clerk K.L. (Kerry) Knapp P.S. (Shane) Knapp W.M. (Wayne) Kenney Clerk Clerk

Clerk Clerk

L.A. (Lynne) Roberts
K.L. (Karen) Shepheard
D.F. (Debbie) Thatcher Clerk Clerk

# Accounts and Stores

N. (Norm) Waldeck

B.A. (Bruce) Stevenson

P.J. (Pat) Cahill

Senior Clerk Accounts Clerk

Stores Clerk

# Prosecutions

M. (Mike) Grasby

# Limited Entry Fisheries

A.R. (Alex) Cechner

# Secretary, W.A. Wildlife Authority

G.E. (Greg) Allen

# Typists

M. (Shelly) Grasby M. (Mary) Wilson

C.J. (Carey) Anderson

Senior Typist

Typist

Typist

# Switchboard

P. (Pauline) Osborn

### Courier -

D. (Dianne) Neville

### Statistics

V. (Veronica) King

P.B. (Phil) Kelly Fisheries Statistics M.D. (Marj) Girdlestone Kangaroo Statistics Fisheries Statistics

Coding Clerk

# Graduate Assistants

R.J. (Rob) Powell

P.P. (Peter) Rogers

P. (Paul) Rutherford

# Licensing

A.C. (Adrian) Edwards

L.W. (Les) Marrable

N. (Neil) Ford

T.B. (Tim) Macintyre
A.C. (Clete) Mathews
J.R. (Jeff) Nolan

Senior Clerk Fisheries

Senior Clerk Fauna Wildlife Licensing

Wildlife Licensing

Wildlife Licensing

Fisheries Licensing

# Staff Clerk

N. (Norm) Press

# Clerical Assistants

H.M. (Helen) Lamperd

P.F. (Pam) Wilkins

Mandurah Fremantle

# FISHERIES INSPECTION

N.E. (Neil) McLaughlan

E.J. (Ernie) Little

A.T. (Arthur) Pearce

Chief Inspector

Supervising Inspector

Special Investigations Officer

# Albany

J.T. (John) Kelly

T.H. (Tom) Froby

N.M. (Nigel) Tyler

Officer in Charge

# Broome

J.G. (John) Looby

Pearling Inspector

# Bunbury

D.H. (Dennis) Smith G.A. (Greg) Finlay G.T. (Gerry) Segers

Officer in Charge

### Carnarvon

R.J. (Bob) Kirk

K.R. (Ken) Gittens

Skipper "Freycinet" Seagoing

## Cervantes

J.D. (John) Eaton

# Dongara

R.J. (John) Breeden

### Fremantle

T.B. (Barry) Baines

I.W. (Ian) Burns

E.M. (Rick) Giblett

R.M. (Rex) Green
P.D. (Phil) Mosel
J.R. (John) Neskudla
L.R. (Laurie) Poole

R. (Ron) Smith B. (Bernie) Unwin

P.C. (Peter) Willey

H.L. (Bert) Lee R.S. (Ron) Crocker

Seagoing

Skipper "Abel Tasman"

Seagoing

Mobile Patrol

Skipper "Pelsart"

Officer in Charge

Seagoing

Mobile Patrol

Fleet Maintenance Officer

Assistant

# Geraldton

J.J. (Jim) Lilburne

G. (Garry) Brown

J.N. (John) Bussanich J.D. (John) Mutter M.H. (Miles) Poananga W.R. (Bill) Saw B.M. (Bruce) Webber

Officer in Charge

Seagoing

Mobile Patrol

Seagoing Seagoing

Skipper "Phillip King"

# Head Office

C.W. (Colin) Ostle

H. (Haakon) Pedersen

G.R. (Greg) Roach

Special Investigations Officer Special Investigations Officer

### Inland Patrol (266 Hay Street)

R.E.P. (Phil) Kendrick

P.J. (Peter) Johnsen

Officer in Charge

# Jurien Bay

L.J. (Lindsay) Wallis

C.B. (Bruce) Griffiths

Officer in Charge

# Lancelin

K.D. (Kevin) Morrison

A.G. (Alan) Breeden

Officer in Charge

### Mandurah

J.D. (Jay) Harman J.A. (Jeff) Beal

J. (John) Williams

Officer in Charge

# Perth District Office

- E.R. (Rick) Hammond
- E.R. (RICK) Hammond R.M. (Miles) Crawford G.B. (Geoff) Faulkner E.I. (Ted) Forster A.V. (Pim) Green P.J. (Peter) Strickland

# Shark Bay

D.E. (Derek) Blackman

# WILDLIFE CONSERVATION

- B.A. (Brian) Carmichael
- A.R. (Bob) Marshall L.R. (Les) Moss

Chief Wildlife Officer Senior Wildlife Officer

# Albany

R.L. (Ray) Smith L. (Les) Coyne

# Busselton

B.K. (Bernie) Masters

# Carnarvon

M.W. (Mike) Mahoney

### Esperance

I.C. (Ian) Cooke

# Geraldton

D.J. (David) Mell

J.P. (Joe) Ouinn

# Head Office

B. (Bernie) Haberley

G.J. (Geoff) Hanley M.G. (Mike) Osborn

P. (Phil) Roberts
T. (Trevor) Walley
J. (Jim) Wilson

# Karratha

P.A.J. (Peter) Pennings R.E.S. (Ron) Sokolowski

# Kalgoorlie

L.J. (Leon) Silvester

# Manjimup

J.E. (John) Neal

### Moora

K.L. (Kingsley) Miller

# Mount Magnet

K.J. (Kevin) Marshall
R.I. (Richard) Piggott

# Pingelly

P.M. (Peter) Lambert

# Waroona

R.A. (Rob) Coughran

# Wongan Hills

R.F. (Bob) Dear

### Wyndham

G.D. (Don) Noble

### FISHERIES RESEARCH

Dr D.A. (Don) Hancock S. (Stuart) Blight Chief Research Officer Assistant to Chief Research Officer

# Scale Fish Studies

Dr M. (Mike) Walker M. (Mark) Cliff

Research Officer

# Rock Lobster Studies - Exploited Stage

Dr G. (Gary) Morgan Research Officer
E. (Eric) Barker Senior Technical Officer
G. (Gordon) Lymn Technical Officer

# Fishery Induced Mortality of Juvenile Rock Lobster

R. (Rhys) Brown H. (Jerry) Jerke

Research Officer Technical Officer

# Amateur Rock Lobster Fishery Studies

Dr P. (Pam) Norton

Research Officer

# Environmental Impact

Dr H. (Howard) Jones

Research Officer

# Pollution Studies

J. (John) Edmonds

Research Officer

K. (Kevin) Francesconi Research Chemist

# Statistical Design and Analysis

N. (Nick) Caputi

I. (Ian) Lethbridge Research Officer

Research Officer

# Freshwater Studies

Dr N. (Noel) Morrissy

C. (Cliff) Fellows

Research Officer Technical Assistant

Marron Extension Officer

# Estuarine Studies

R. (Rod) House

R. (Rod) Lenanton

P. (Peter) Yewers K. (Kevin) Carhart Research Officer Technical Officer

Technical Assistant

# Scallops and Shark

D. (David) Heald K. (Kim) Back

Research Officer

Technical Assistant

# Prawns and Abalone

J. (Jim) Penn

R. (Ray) Stalker

Research Officer Technical Officer

# Data Collection and Analysis

N. (Norm) Hall Research Officer
P. (Peter) Wood Technical Officer
B. (Brian) Bartley Technical Assistant
B. (Brett) Carter Technical Assistant

# Clerical

J. (John) Parker Clerk
J. (Jill) Kennedy Typist

C. (Chris) Fast Clerical Assistant

# Engineer

E. (Eddie) Seach

All of the above are stationed at Watermans. The following are based as stated.

C. (Titch) Haynes Gear Technician, Fremantle Gear Shed

G. (George) Cassells Manager, Pemberton Fish Hatchery

T. (Tony) Church Assistant, Pemberton Fish Hatchery

J.A. French General Assistant

# R.F. "Flinders"

R. (Ron) Duckrell Skipper
J. (John) de Ceglie Mate
J. (John) Patterson Engineer
R. (Roland) Walker

A. (Aureliano) da Franca

### WILDLIFE RESEARCH

### RESERVE MANAGEMENT

### Research

Dr A.A. (Andrew) Burbidge Senior Research Officer P. (Phillip) Fuller Technical Assistant

### Projects

J. Goodsell Research Officer Reserves

## Operations

Fire Control:

T. (Trevor) Evans Senior Technical Officer J.J. (Jeffry) Smith Labourer

Nature Reserve: (Two Peoples Bay, Albany)

Vacant (Technical Officer)

Nature Reserve: (Wildlife Research Centre, Wanneroo)

A.D. (Allen) Mangini, Ranger

Nature Reserve: (Karratha)

R.E. (Ronald) Sokolowski

Reserve Management Team (Pingelly):

K. (Kenneth) Wallace, Reserve Management Officer

Reserve Management Team (Pingelly):

Vacant (Technical Officer)

# BIOLOGICAL SURVEY

N.L. (Norman) McKenzie
K. (Kenneth) Youngson
J.R. (James) Rolfe
K. (Kenneth) Cashin

Research Officer
Technical Officer
Technical Assistant
Technical Assistant

# ANIMAL ECOLOGY

# Macropods

Dr R.I.T. (Robert) Prince Research Officer R.G. (Robin) Heckler Technical Officer M. (Mary) Colreavy Technical Officer

# Rock Wallabies

Dr J.E. (John) Kinnear Research Officer M.L. (Michael) Onus Technical Assistant

### Waterbird

J.A.K. (James) Lane

D.R. (Donald) Munro

G.B. (Grant) Pearson

Research Officer

Technical Officer

Technical Officer

# PLANT ECOLOGY

A.J.M. (Angus) Hopkins Research Officer
C.J. (Christopher) Technical Officer
Robinson

# FLORA CONSERVATION

S.D. (Stephen) Hopper

Research Officer

# CLERICAL

N.C. (Neil) Holland Clerk
T.A. (Thelma) Woodward Typist

| Name             | Page     | Name              | Page |
|------------------|----------|-------------------|------|
| ALESSANDRO, G.   | 19       | FORSTER, E.I.     | 23   |
| ALLEN, G.E.      | 20       | FRANCESCONI, K.   | 25   |
| ARNOLD, D.W.     | 19       | FRENCH, J.A.      | 26   |
| ANDERSON, C.J.   | 20       | FROBY, T.H.       | 21   |
|                  | 20       | FULLER, P.J.      | 26   |
| BACK, K.T.       | 15       | •                 |      |
| BAINES, T.B.     | 22       | GIBLETT, E.M.     | 22   |
| BARKER, E.H.     | 25       | GIRDLESTONE, M.D. | 20   |
| BARTLEY, B.A.    | 26       | GITTENS, K.R.     | 21   |
| BEAL, J.A.       | 22       | GOADBY, A.J.      | 19   |
| BLACKMAN, D.E.   | 23       | GODFREY, K.F.C.   | 19   |
| BLIGHT, S.J.     | 24       | GOODSELL, J.T.    | 26   |
| BOWEN, B.K.      | 19       | GRASBY, M.C.      | 20   |
| BREEDEN, A.G.    | 22       | GRASBY, M.        | 20   |
| BREEDEN, R.J.    | 21       | GREEN, A.V.       | 23   |
| BROWN, G.W.      | 22       | GREEN, R.M.       | 22   |
| BROWN, R.S.      | 25       | GRIFFITHS, C.B.   | 22   |
| BURBIDGE, A.A.   | 25<br>26 | Chilitatio, C.D.  | 44   |
| BURNS, I.W.      | 22       | HABERLEY, B.C.    | 23   |
| BUSSANICH, J.N.  | 22       | HALL, N.G.        | 26   |
|                  | 44       | HAMMOND, E.R.     | 23   |
|                  |          |                   | 24   |
| י מ דדדעגי       | 0.0      | HANCOCK, D.A.     |      |
| CAHILL, P.J.     | 20       | HANCOCKS, S.J.    | 19   |
| CAPUTI, N.       | 25       | HANLEY, G.J.      | 23 🐔 |
| CARHART, K.      | 25       | HARMAN, J.D.      | 22   |
| CARMICHAEL, B.A. | 23       | HAYNES, C.R.C.    | 26   |
| CARTER, B.A.     | 26       | HEALD, D.I.       | 25   |
| CASHIN, K.E.     | 27       | HECKLER, R.G.     | 27   |
| CASSELLS, A.G.   | 26       | HOLLAND, N.C.     | 28   |
| CECHNER, A.R.    | 20       | HOPKINS, A.J.M.   | 27   |
| CHURCH, A.R.     | 26       | HOPPER, S.D.      | 28   |
| COOKE, I.C.      | 23       | HOUSE, R.R.       | 25   |
| COUGHRAN, R.A.   | 24       | HUNTER, J.L.      | 19   |
| COYNE, L.E.      | 23       |                   |      |
| CRAWFORD, R.M.   | 23       | JENNINGS, D.L.    | 19   |
| CROCKER, R.S.    | 23       | JERKE, H.         | 25   |
| COLREAVY, M.     |          | •                 | 22   |
| DA FRANCA, A.A.  | 27       | JOHNSEN, P.J.     | 19   |
|                  | 26       | JONES, B.         |      |
| DEAR, R.F.       | 24       | JONES, H.E.       | 25   |
| DUCKRELL, B.J.   | 26       |                   |      |
| DIXON, F.J.      |          | <u></u>           |      |
| DE CEGLIE, G.    | 26       | KELLY, J.T.       | 21   |
|                  |          | KELLY, P.B.       | 20   |
| EATON, J.D.      | 21       | KENDRICK, R.E.P.  | 22   |
| DMONDS, J.S.     | 25       | KENNEDY, J.E.     | 26   |
| DSALL, P.G.      | 19       | KING, V.          | 2σ   |
| DWARDS, A.C.     | 21       | KIRK, R.J.        | 21   |
| VANS, T.         | 26       | KNAPP, K.L.       | 19   |
| •                | 20       | KNAPP, P.S.       | 19   |
|                  |          | KENNEY, W.M.      | 19   |
| FAST, C.M.       | 26       |                   |      |
| AULKNER, G.B.    | 26       | KINNEAR, J.E.     | 27   |
|                  | 23       | 73000 -           |      |
| ELLOWS, C.J.     | 25       | LACZO, E.         | 19   |
| INLAY, G.A.      | 21       | LAMBERT, P.M.     | 24   |
| FORD, N.         | 21       | LAMPERD, H.M.     | 21   |

| Name                                    | Page     | Name                          | Page     |  |
|---|----------|-------------------------------|----------|--|
| LANE, J.A.K.                            | 27       | PRESS, N.S.                   | 21       |  |
| LEE, H.L.                               | 22       | PRINCE, R.I.T.                | 27       |  |
| LENANTON, R.C.J.                        | 25       |                               |          |  |
| LETHBRIDGE, I.L.                        | - 25     | QUINN, J.P.                   | 23       |  |
| LILBURNE, S.J.                          | 22       | 20-000, 0000                  |          |  |
| LITTLE, E.J.                            | 21       | READSHAW, D.G.                | 19       |  |
| LOOBY, J.G.                             | 21       | ROACH, G.R.                   | 22       |  |
| LYMN, G.T.                              | 25       | ROBERTS, L.A.                 | 24       |  |
| ,                                       | 25       | ROBERTS, P.J.                 | 19       |  |
|   |          | DODING ID                     | 19       |  |
| MACINTYRE, T.B.                         | 21       | ROBINS, J.P.                  | 27       |  |
|   |          | ROBINSON, C.J.                | 20       |  |
| MAHONEY, W.M.                           | 23       | ROGERS, P.P.                  | .27      |  |
| MANGINI, A.D.                           | 27       | ROLFE, J.K.                   |          |  |
| MARRABLE, L.W.                          | 21       | RUTHERFORD, P.R.              | 20       |  |
| MARSHALL, A.R.                          | 23       | ROBERTS, R.J.                 | 23       |  |
| MARSHALL, K.J.                          | 24       |                               |          |  |
| MASTERS, B.K.                           | 23       | SAW, W.R.                     | 22       |  |
| MATHEWS, A.C.<br>MEARNS, A.J.           | 21       | SCHNEIKER, H.                 | 19       |  |
| MEARNS, A.J.                            | 19       | SEACH, E.A.                   | 26       |  |
| MELL, D.J.                              | 23       | SEGERS, G.T.                  | 21       |  |
| MILLER, K.L.                            | 24       | SHEPHEARD, K.L.               | 19       |  |
| MORGAN, G.R.                            | 25       | SHUGG, H.B.S.                 | 19       |  |
| MORRISON, K.D.                          | 22       | SILVESTER, L.J.               | 25       |  |
| MORRISSY, N.M.                          | 25       | SMITH, D.H.                   | 21       |  |
| MOSEL, P.D.                             | 22       | SMITH, J.J.                   | . 26     |  |
| MOSS, L.R.                              | 23       | SMITH, R.L.                   | 23       |  |
|   | 27       |                               | 22       |  |
| MUNRO, D.R.                             |          | SMITH, R.                     | 24       |  |
| MUTTER, J.D.                            | 22       | SOKOLOWSKI, R.E.              | 25       |  |
| MARZO, M.M.                             | 19       | STALKER, R.W.                 |          |  |
|   |          | STEVENSON, B.A.               | 20       |  |
| MCKENZIE, N.L.                          | 27       | STRICKLAND, P.J.              | 23       |  |
| McLAUGHLAN, N.E.                        | 21       | SMITH, L.L.                   | 26       |  |
| NEAL, J.E.                              | 24       |                               |          |  |
| NESKUDLA, J.R.                          | 22       | THATCHER, D.F.                | 19       |  |
| NEVILLE, D.P.                           | 20       | TYLER, N.M.                   | 21       |  |
| NOBLE, G.D.                             | 24       | •                             |          |  |
| NOLAN, J.R.                             | 21       |                               |          |  |
| NORTON, P.                              | 25       | UNWIN, B.                     | 22       |  |
| ONUS, M.L.                              | 27       | WALDECK, N.F.                 | 20       |  |
| OSBORN, M.G.                            | 23       | WALDON, A.C.                  | 19       |  |
| OSBORN, P.                              | 20       | WALKER, M.H.                  | 24       |  |
| OSTLE, C.W.                             | 22       | WALKER, R.M.                  | 19       |  |
| COILLY, C.W.                            | 22       | WALKER, R.M.<br>WALKER, R.L.  | . 26     |  |
| PARKER, J.B.                            | 26       |                               | 23       |  |
|   | 26       | WALLEY, T.                    | 22       |  |
| PATTERSON, J.E.                         | 26<br>21 | WALLIS, L.J.                  | 22       |  |
| PEARCE, A.T.                            |          | WEBBER, B.M.                  | 21       |  |
| PEARSON, G.B.                           | 27       | WILKINS, P.F.<br>WILLEY, P.C. |          |  |
| PEDERSEN, H.                            | 22       | WILLEY, P.C.                  | 22       |  |
| PENN, J.W.                              | 25       | WILLIAMS, J.G.                | 22       |  |
| PENNINGS, P.A.J.                        | 24       | WILSON, J.                    | 23       |  |
| PIGGOTT, R.I.                           | 24       | WILSON, M.                    | 20       |  |
| POANANGA, M.H.                          | 22       | WOOD, P.A.                    | 26       |  |
| POOLE, L.R.                             | 22       | WOODWARD, T.A.                | 28       |  |
| POWELL, R.J.                            | 20       |                               | 25       |  |
| • |          | YEWERS, P.G.                  | 25<br>27 |  |
|   |          | YOUNGSON, W.K.                | 21       |  |