

Fourth Annual Report 1978-79

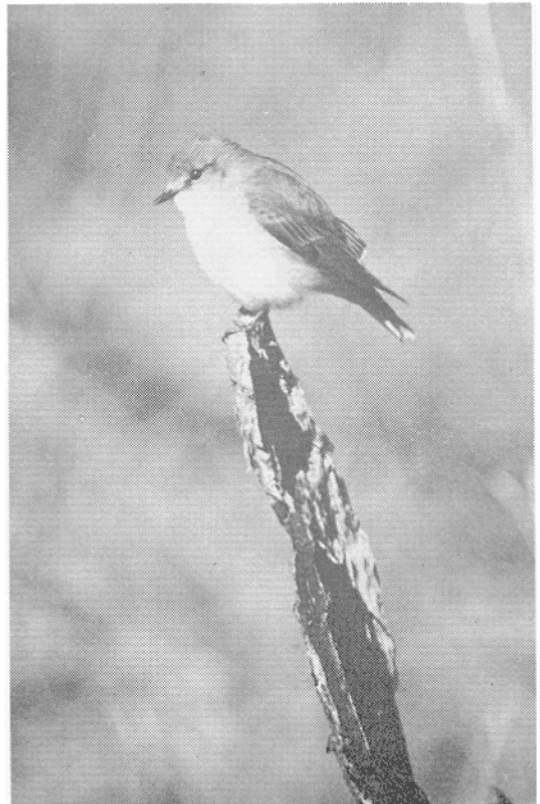


QUEENSLAND
NATIONAL PARKS
AND WILDLIFE
SERVICE



Fourth Annual Report 1978-79

Jackey winter (*Microeca leucophaea*)





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NATIONAL PARKS
AND WILDLIFE
SERVICE

Dr G W Saunders,
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22 October, 1979.

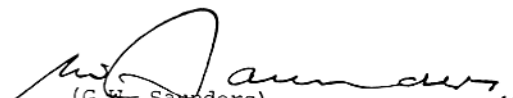
The Honourable Ivan J. Gibbs, M.L.A.,
Minister for Culture, National Parks
and Recreation,
Brisbane.

Sir,

I have the honour to submit to you for presentation to the Parliament the Fourth Annual Report of the National Parks and Wildlife Service.

This Report covers the operations of the Service during the year ended 30 June, 1979.

Yours faithfully,


(G.W. Saunders)
DIRECTOR



Introduction

The growth of the Service since its establishment just over four years ago has been steady, and there are at year's end 119 officers on salaried staff and 138 officers on wages staff.

This compares with 87 salaried and only 44 wages staff at the end of the 1975-76 year.

It reflects both the general level of demand from the public in environmental and nature conservation matters, and the determination of the Government to make the National Parks and Wildlife Service a growth area even in a period of financial stringency.

While the year does not reflect a major increase in area of gazettal of national parks because the gazettal process is often very lengthy, nevertheless a record amount was spent on acquisition of land—all from State funds. The acquisitions include what will be the largest national park to date in Queensland—the Lakefield National Park—which exceeds half a million hectares.

Details of all purchases, costing in excess of \$860,000, are given in the appropriate section of this report.

The year saw the first Fauna Refuge gazetted, in North Queensland. This will give protection of a high status to wildlife on this private land, which happily is neighbour to state forest and national park.

The number of proposals and interest areas drawn to Service attention continues to grow and now exceeds 850. Many of these areas will not qualify; but all need to be looked at for conservation values. Efforts are being made by use of satellite imagery and ground inspections to reduce the backlog; because at times a landholder's desire to freehold, or otherwise alter his tenure, is involved; and his ability to determine his future can be delayed until the Service needs are known.

One of the Service's happiest occasions since it was formed was the opening by the Honourable the Premier on 16th September, 1978, of the new office and information centre at the southern end of Coolool National Park. Sir Thomas Hiley, K.B.E., saw the centre named in his honour because of the financial help given by his Bird and Wildfowl Society towards the project. Other honoured guests were the former very popular Governor of Queensland, Sir Henry Abel-Smith, and Lady May. This centre—built above the water—is pictured in this report.

As a means of improving the efficiency of our staff, some senior personnel completed the Management Training Courses available through the Department of Public Service Board. A tangible result was the improvement in communication within the Service. This has been achieved by regular staff meetings and an in-Service journal called 'Ringtail', which is bridging the miles between Head Office and the regional and even more isolated officers.

The marked improvement in the commercial kangaroo industry and the plague numbers of these animals pose great logistical problems for the administrative staff dealing with the industry.

It is hoped that discussion with the Commonwealth will give the Service more flexibility in harvest matters. After all, the State and not the Commonwealth has the wildlife experts on hand to monitor the populations of these animals.

The World Wildlife Fund has set up an organization in Australia, and the Service had the honour of receiving the first grant (\$46,300) to further seabird and turtle studies on Raine Island. This grant and others which have come to the Service over the years indicate the value placed by others on the professional standing of our researchers.

These officers have produced a book, 'Exploration North', in association with an A.B.C. T.V. series of the same name. Both have been widely acclaimed for their high production standards.

On another level, the Technical Services Section has produced a record of original 'Nature Songs' for children, and this too has been highly praised.

Indeed, throughout this report, you will read in detail of many other innovative projects which indicate more clearly than in any other way the keenness, dedication and resourcefulness of the officers in this Service.

New regional offices in Cairns, Moggill and Maryborough, the beginning of a nature reference sites programme, the first major works on an environmental park (at Mount Zamia), redevelopment of Lake Eacham, the production of some brilliant posters, brochures, displays and audio-visuals, the consolidation of Girraween, and Scenic Rim National Parks all warrant mention in my introduction.

In any field where there is an interaction of factors such as shortage of funds, staff and facilities with increased demands for new initiatives and involvement, strains are bound to develop within an organization. The Service is no exception. I record my great appreciation of the efforts of all staff in field and office to keep the ship afloat and on the right course. It has not been an easy year, nor do I expect the next few years to be any easier.

It is gratifying to know that one has the sort of people on staff who will continue to give of their best in these demanding times; and I am very conscious of my debt to them.

Kinaba Information Centre



Administration

The Administration Branch is responsible for the clerical and accounting functions of the Service. In addition, it provides those technical services required by the two other branches of the Service and interprets the Service's objectives to the public.

Clerical and General

The provision of adequate administration and clerical facilities to the expanding Queensland National Parks and Wildlife Service has proved to be a task of great magnitude because of increasing demands being made upon the Service on all fronts. The rising levels of public awareness, and demands on the activities of the Service throughout the State has unfortunately coincided with the Government's determination to hold Public Service staff ceilings down. The period under review has seen emphasis placed upon the most effective utilization of existing resources and to this end a number of senior staff members have been involved in the Department of Public Service Board's intensive training and management courses. These are designed to streamline and improve the overall operation of administrative areas. Significant improvement has been achieved, notably in the field of communications when regular discussions have been initiated within and between the branches of the Service and by a new administrative newsletter which is distributed to staff throughout the State on a bi-monthly basis. This has been well received by country officers in particular.

During the year, several factors have significantly influenced the workload of the branch, the chief of which has been the marked upturn in the kangaroo harvesting industry. The greatly increased harvest of kangaroos and the major increase of clerical work which has resulted has placed a severe strain on clerical staff within the Service. Together with other matters related to wildlife and a general upsurge in park visitations

and enquiries, staff have been hard-pressed to cope with the increased demand for services provided.

Accommodation

During the year, the Service occupied a portion of the twelfth floor of the existing premises in Albert Street, and this additional area has temporarily eased the previously acute accommodation situation. Some facilities, including the telephone switchboard, are under severe pressure in part because of this modest expansion. Staff presently located at the Department of Primary Industries Animal Research Institute at Yeerongpilly eagerly await relocation at the proposed regional centre at Moggill where construction regrettably has again been delayed by current funding difficulties. Again, I have to express my gratitude to the Department of Primary Industries for its patience and understanding. The period has seen the establishment of Service offices at Maryborough and Gympie, together with the opening of new office premises at Cairns. Clerical back-up for these new centres is, however, totally lacking. Housing has been provided for a Wildlife ranger at Mount Isa who still awaits an office. Office accommodation has been secured for a ranger to be located at Toowoomba. Expansion of existing facilities has occurred at Pallarenda in Townsville, and additional accommodation is to be provided at Hermitage near Warwick. Increased expectation by the public for the provision of a wide range of services at regional offices has created a great need for clerical staff to be made available at major centres where these offices are established. The public is becoming aware that while it may applaud a Government which tries to contain Public Service growth, the exercise is not without sacrifice of the quality of service to it.

Staffing

Although we have received a quite generous allocation of new staff in relation to other areas of the Public Service, the continuing

increase in demand for services provided always seems to keep ahead of staff increases. In turn, this causes delays in reply to some correspondence and in other areas. Every endeavour is being made to overcome these problems. Certain activities will, in future, require review to determine whether the existing levels of services provided should be maintained.

The Service continues to attract a large number of applicants for any positions which become available and is constantly receiving requests for employment from well qualified people from many parts of the world. Many requests are also received from students relative to a career in the Service, and a response to these enquiries poses a significant workload. It would appear likely that the sustained interest in the Service, both by the people of Queensland and by visitors and tourists from interstate and overseas, will continue to produce a situation requiring a high level of efficiency within the Administration Branch of the Service in the future.

Acquisitions and Gazettals Park Proposals

As at 30th June, 1979, some 854 proposals cover areas of possible interest to the Service. This compares with 778 proposals at the beginning of the financial year. The proposals are either under evaluation or being developed and processed by the Service. During the year, several major and significant areas were acquired for national park purposes for gazettal or agreement was reached with Government authorities for areas to be made available. Such areas include Lakefield on Cape York, Mount Moffatt, north of Mitchell, the Russell and Mulgrave Rivers, Sundown near Stanthorpe, the Johnstone River, the Blackdown Tableland and along the Scenic Rim south-west of Brisbane.

In addition to the above areas, it is hoped during the forthcoming year to finalize a number of major national park proposals as detailed below:

- Severn River
- McIlwraith Range
- Cape Tribulation
- Extensions to Robinson Gorge National Park
- Extension to Scenic Rim
- Rokeby-Croll Creek
- White Mountain
- Cape Cleveland.

It should be noted that while the year marks the greatest expenditure of State funding in history for the purchase of lands for nature conservation purposes, there was not a large increase in the Service estate. This is due to the considerable delays which often occur before gazettal is made. The gazettals of these purchases will mostly show up in the 1979-80 financial year.

National Parks

Two new national parks were gazetted, covering 898·018 hectares.

National Park 1332—Parish of Tamborine (gazetted 7-10-78) is situated in MacDonnell Road, Mount Tamborine, and was donated to the Crown by Miss K. M. Dobbie. The park consists of 2·918 hectares and represents one of the few remaining stands of rainforest on Mount Tamborine which is not preserved in the national park system. The Service is most grateful to Miss Dobbie for her kind donation.

National Park 14—Parish of Marengo (gazetted 14-10-78) is situated about 130 kilometres north-west of Taroom and is an area of 895·1 hectares surrendered from a Grazing Homestead. The southern sector of the Park runs up onto a spur of the Carnarvon Range complex featuring a small, yet striking line of red cliffs. The vegetation of brigalow and poplar box communities becomes stunted as one progresses up the scrub slopes merging into ironbark country at the top. On 12 existing national parks, additions were gazetted which totalled about 9 614 hectares; these comprise:

National Park 737—Parish of Melcombe (gazetted 5-8-78). The area of about 38 hectares that was added to this Park is part of a rescinded Camping and Water Reserve. It features a landmark known as Yellow Pinch which is a peak rising to a height of about 400 metres that, together with the surrounding country, provides a popular venue for bushwalkers who admire the region for its wilderness values. The Park borders the Logan River which separates it from the Mount Barney National Park.

National Park 603—Parish of Haly (gazetted 21-10-78). This extension to the Bunya Mountains National Park is the result of an exchange of areas. There were two (2) areas involved totalling 83·323 hectares. One of the portions is steeply sloping country located near Festoon and McGrory Falls on Saddletree Creek and is an extremely useful area for possible track location to the top of McGrory Falls. The other area includes the whole of a picturesque gorge in the eastern branch of Saddletree Creek and is ideal for any future recreational development. The sides of the gorge are heavily timbered, mainly with hoop pine, while of historical interest is the remains of the old tramway and chute constructed by Lars Anderson.

National Park 647—Parish of Rockingham (gazetted 28-10-78). This extension, about 20 hectares, is an area of closed road being the esplanade separating portion 593 from the Hull River, and in terms of park management and the greater preservation of the riverine system, it was desirable that this esplanade be included within the Hull River National Park.

National Park 281—Parish of Broadwater (gazetted 25-11-78). This extension to Girraween National Park, having an area of 775·832 hectares, consists of land of prime strategic importance, as it adjoins the most frequently used section of the existing Park. Another part of this extension is situated towards the south-east corner of the Park and features numerous geologic and scenic formations such as Middle Rock and South Bald Rock. There are pockets of rainforest in the region and significant areas of 'wetland' within the headwaters of Racecourse Creek.

National Park 255—Parish of Gloucester (gazetted 23-12-78). This extension (about 43·4 hectares) is formed by the addition of the whole of Middle Island which is situated about 14 kilometres east of Bowen. It is timbered with ironbark, bloodwood, poplar gum and tea-tree and features a shallow reef off the southern foreshores. Torres Strait pigeons, sea eagles, terns and other numerous bird life inhabit the island.

National Park 114—Parish of West Hill (gazetted 23-12-78) is an area of about 340 hectares consisting almost entirely of saline mud flats featuring a beautiful beach fronting the Pacific Ocean bordering onto adjacent vine forest. By its addition, the extension provides the existing Park with a much wider range of habitat types. The area was vacant Crown land, bordering the southern bank of the lower reaches of West Hill Creek, situated about 60 kilometres south of Sarina.

National Park 1024—Parish of Gladly (gazetted 23-12-78) is an area of about 2 915 hectares of vacant Crown land situated between the Seymour Range and Ella Bay about 6 kilometres north of Flying Fish Point. It comprises vine and palm forests, shrub woodland and swamps, while the geological structure of the land has produced unique drainage patterns with streams forming small canyons and deep permanent clear water pools.

National Park 453—Parish of Gundiah (gazetted 23-12-78) is a valuable addition to the Mount Bauple National Park which is situated roughly midway between Maryborough and Gympie. It has an area of 227·384 hectares and includes much of the Mount Bauple Range which features excellent examples of rainforest and is reputed to be the southernmost habitat of the rare jungle fowl. The land was acquired for \$53,000 by agreement in terms of section 15 of the Acquisition of Land Act.

National Park 750—Parish of Beerwah (gazetted 10-2-79) is an addition to the Mount Beerwah National Park and is steep country with broken gullies falling away from north to south. The new area is an expired Special Lease containing about 245 hectares.

National Park 331—Parish of Pemberton and Polmailly (gazetted 3-3-79). This gazettal comprised the addition of two areas totalling 782·759 hectares. Both were formerly parts of Grazing Farms. One portion contains the catchment of Oak Creek which has its origin in the Many Peaks Range and flows generally south-west to its junction with the Boyne River. Some of the vegetation types of this region include narrow-leaved ironbark, spotted gum, grey box, red gum and white mahogany. The other portion consists of steep country on the eastern fall of Mount Stanley in the Many Peaks Range and contains similar vegetation types.

National Park 771—Parish of Meunga (gazetted 31-3-79). This extension of about 139 hectares was formerly closed road, a resumed Special Lease and a portion of vacant Crown land. The area comprises mainly swampy coastal plainland with some coastal beach sandridges.

National Park 281—Parish of Folkstone and Tenterfield (gazetted 26-5-79). This addition to the Girraween National Park has an area of 4 004·031 hectares and brings within the Park dramatic granite formations such as the Aztec Temple, Middle Rock, West Bald Rock, as well as providing security for the eastern catchment of Bald Rock Creek where high altitude swamps and clear running creeks occur in abundance. Habitats for a diversity of fauna exist, including the naked nosed wombat, superb lyrebird and the powerful owl. Tall forests, lush wildflower areas and deep fern-clad gullies occur in these extensions. The land was freehold, acquired under the provisions of the Acquisition of Land Act.

Christmas bell—Cooloolo Plains



Environmental Parks

Seven environmental parks were gazetted and details of the parks, totalling about 1 504·268 hectares, are as follows:

Environmental Park 393—Parish of Dargin

(gazetted 5-8-78) is known as Thomas Island and has an area of about 7·97 hectares. It is situated about 8½ kilometres south-east of Port Denison and comprises a low sandy knoll with rocky foreshores timbered with low scrubby undergrowth and mangroves. A rocky/coral reef surrounds the greater part of the Island.

Environmental Park 229—Parish of St. Peter

(gazetted (19-8-78). The importance of this Park centres around its geological and scenic significance caused by past volcanic eruption. One of the interesting formations is the cliff-fringed plateau of Mount Zamia, situated immediately west of Springsure and providing a spectacular backdrop to the town. Further to the south is the prominent landmark, Mount Booramboobool. The Park consists of areas that were formerly Reserves for Recreation and Scenic purposes and Camping purposes and totals about 1 140 hectares. The Braithing family surrendered a lease on the area to make gazettal of the area possible.

Environmental Park—Parish of Inkerman (gazetted

7-10-78) contains about 6·06 hectares and is situated about 12 kilometres south-east of Home Hill. It is readily accessible to the public and is an excellent picnic spot. The Park, which was formerly part of a Quarry Reserve, is one of the extremely few remnants of land in the region which has been left in its natural state, and carries a magnificent stand of timber once typical of the surrounding farm lands. Although small in area, the park is an important habitat for birds and small animals, especially in view of the heavy clearing of the surrounding land.

Environmental Park 1411—Parish of Numinbah

(gazetted 28-10-78). This Park adjoins the Lamington National Park near Binna Burra Lodge and provides direct access from the park to Turtle Rock which is partially on the portion. Turtle Rock is a spectacular geological and scenic feature that is already greatly used by rock climbers and bush walkers. The rock is renowned for its caves and subterranean water supply as well as rare ground orchids and heath areas. Whilst there is some clearing on the balance of the portion, most of it carries heavy stands of eucalypt. The park is bounded by Nixon Creek (Area—68·088 hectares).

Environmental Park 673—Parish of Boompa

(gazetted 25-11-78) is situated on the right bank of Eel Creek about 10 kilometres south-west of Boompa. The country is moderately timbered with blue gum, spotted gum, stringy-bark, narrow leaf ironbark and wattle. Eel Creek, forming the greater part of the boundary of the proposal, is a running stream for most of the year with rocky pools and tiny cascades. (Area—5·55 hectares).

Environmental Park 288—Parish of Baffle

(gazetted 27-1-79) is approximately 130 hectares in area and formerly comprised vacant Crown land and Camping Reserve. It is about 27 kilometres south-east of Miriam Vale and is bordered on the east by the Pacific Ocean and on the west by the lower reaches of the Mitchell River. Two-thirds of the park is made up of undulating sand ridges covered by coarse stunted coastal heath, while the remainder is timbered with teatree, blue gum, mohogany and carbeen.

Environmental Park 1429—Parish of Telemon

(gazetted 7-4-79). This Park of 146·6 hectares is situated approximately 10 kilometres south of Rathdowney on the Queensland-New South Wales border. Being on the northern escarpment of Levers Plateau, the land is relatively steep and carries a mixture of rainforest and eucalypt forest with an occasional hoop pine. The block was previously freehold land and was acquired by way of a negotiated settlement for \$17,500.

Fauna Refuge

Queensland's first Fauna Refuge was declared over subdivisions 1, 2 and 3 of portion 151, parish of Conway on 4-11-78. The Refuge has an area of 105·11 hectares and was declared at the insistence of the owner Mrs M. Jondahl who wished that the area should be preserved in its natural state. Mrs Jondahl's land is situated less than two kilometres from the mouth of the Proserpine River, adjoins a State Forest and is in the vicinity of the Conway National Park. It is therefore understandable that the property would contain most of the features of nature found on these two reserves. It is reported that the area is a suitable habitat for koalas, while other animals and birdlife typical of the region appear to be of moderate occurrence. One Fauna Sanctuary was gazetted during the year. This was Milo Station, Blackall District. Details are shown below:

Sanctuary	Parish	Area	Date of Gazettal
Milo Station	Cothalow, Coombie, Thurnby, Margaret, Kenneth, Coomeete, Costello, Gundary, Boogana and Nutting	3 592 km ²	19-5-79

Purchases during the financial year are presented below:

Portion	Parish	Purchase Price	Purpose
		\$	
Lakefield Aggregation		300,000.00	New National Park
Mount Moffatt Holding		170,000.00	New National Park
Sub. 2 of por. 3, pors. 4, 5, 6, 7. Subdivision 3 of portion 5V	Weale	100,000.00	Environmental Park—Lake Broadwater
Sundown Aggregation	Ballandean	79,000.00	National Park—Extension to Sundown National Park
Subs. 3A, 3B, 4A, 3 and 4 of portion 22V	Broadwater	72,000.00	National Park—Extension to Girraween
131	Alford	35,000.00	Environmental Park—Part of Scenic Rim
197	Folkestone	25,000.00	National Park—Extension to Girraween
89V	Telemon	17,500.00	Environmental Park—Part of Scenic Rim
Sub. 2, portion 48V	Tenterfield	15,250.00	National Park—Extension to Girraween
M.H. 283, portion 95	Broadwater	28,000.00	National Park—Extension to Girraween
91	Tenterfield	7,000.00	National Park—Extension to Girraween
23V	Kerry	14,000.00	National Park—Extension to Lamington
Part 25V	Hampden	1,326.45	National Park—Extension to Mt. Man- durana
Part Sub. 5 of resub. 3 of sub. 2, por. 41	Roberts	1.00	National Park—Extension to Lamington
Survey Costs		8,216.00	
Legal Fees		2,206.55	
Total Expenditure		<u>\$874,500.00</u>	

By way of comparison, total purchases for preceding years are as follows:

1975-76	1976-77	1977-78
\$190,091	\$700,000	\$719,762
including \$88,330 supplied by the Commonwealth under the State Grants Nature Conservation Act 1974.	including \$400,000 supplied by the Commonwealth under State Grants Nature Conservation Act.	including \$200,000 supplied by the Commonwealth under Environment (Financial Assistance) Act.

Thus, during this financial year a record total of \$874,500 was expended on land acquisition, entirely from State Funds.

Technical Services Section

Nature conservation depends not only on an extensive reserve system but also on a public that is informed and aware of conservation principles. It is the responsibility of Technical Services Section to encourage public concern for nature on all lands.

To do this, the Section becomes involved in the field of communication. Displays, publications, audio-visuals, talks and guided activities are examples of the media used to convey the conservation message. But this is only one aspect of the Section's communication role. Maps, illustrative art and quality design are important aids to communication within and outside the Service.

With these responsibilities, the Section plays a central role within the Service. It uses information from the other sections to fulfil the long-term nature conservation objective through education. It services other sections with illustrations/maps to assist with their functions. It helps facilitate training programmes for staff; and, through the library, aims to offer an information retrieval system to better equip officers for their duties.

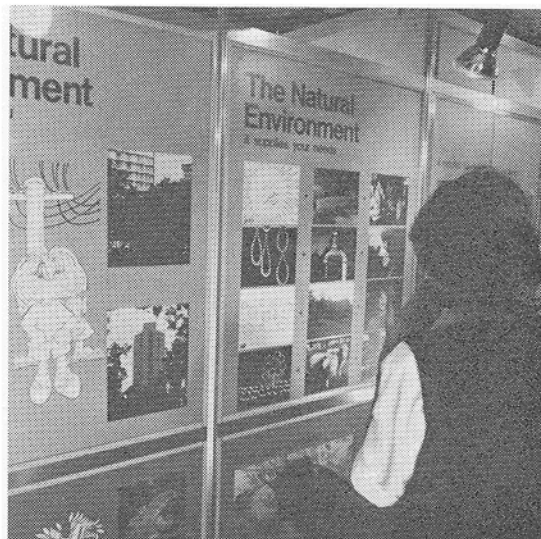
Staffing

Throughout 1978–79, the Sections' output as a major communications function suffered through the lack of typing and clerical staff. Nevertheless, some major and exciting projects were completed. For the first half of the year, in the absence of Mr Bill Carter on a Churchill Fellowship, Mr Gordon Wilkinson was seconded to the Section, and it is hoped that his time spent as second-in-charge will assist him and the Service in his regular wildlife duties. Such interchange of staff within the Service is felt to be useful administration and in-service training. The section looks forward to similar exchanges in the future.

Two salaried officers and seven wages staff are responsible for the interpretative functions of the Service; meeting illustrative and photographic needs, co-ordinating volunteer services, and handling display and publication requirements of the Service. Despite an increasing workload from all other sections, the drafting staff remain at six, the level when the Service was established.

Junior Rangers

Environmental awareness programmes for children conducted on four major parks around Brisbane—Lamington, Tamborine Mountain, Maijala and Bunya Mountains—have now attracted a total of 1 925 children who have passed the various activities involved in becoming a Junior Ranger. Many other children attended programmes and in some small way had their eyes opened to the wonders and intricacies of nature. Late in 1978, a brochure 'Just For Kids' was released as a general guide to the activities of Junior Rangers. This advised where and when programmes would be held.



March, 1979 marked the release of the 'Nature Songs' record. The ecological messages contained on the 17 tracks set to a variety of modern rhythms have appealed to all ages; consistently favourable comments have been received from all those who have purchased or listened to the record. The co-ordinator of the programme, Mr Brian Mackness, has been involved with the setting up of a Junior Ranger programme at Royal National Park in New South Wales. This follows his helping the Victorian National Parks Service in a similar project last year.

Film Library

The 14 films that Technical Services Section now has available for Service use have been shown on about 60 occasions to an estimated audience of 5 000 people. On one occasion, 500 people attended a film evening at an interpretative programme in the Bunya Mountains National Park. More films are being purchased as funds allow, and it is hoped the 'Exploration North' television series will be available soon.

Training

On several occasions, staff were sent to seminars and workshops to enhance their present skills and to learn others that may be applied to interpretative programmes of the future. Ranger Overseer Ross Blick attended a course on radio broadcasting in Sydney and learned of techniques that may be useful in developing a rural interpretative programme. Ranger Overseer Fiona Davie attended the Summer School of Park Management in Canberra. The Draftsman-in-Charge, Mr Des Collins and his deputy, Mr Trevor Payne, attended the 3rd Australian Institute of Cartographers Conference in Brisbane, while Mr Gordon Stone attended the 51st Royal Australian Institute of Parks and Recreation Conference in Tasmania and participated in discussions on the subject of 'Land for Leisure'. Ranger Overseer Marc Hockings ran an on-park training course on interpretation for students of Gatton and Kelvin Grove Colleges.

of Advanced Education plus training programmes for teachers from Stanthorpe State School and a similar course for the resort staff on Lindeman Island.

Artwork

The commencement of Mr Simon McLean on staff as a full-time illustrator has had a dramatic effect on our presentation of displays and publications. Up to 50 per cent of our display components since have been illustrative drawings or cartoons. Some examples are: the Kinaba display, the Nature Songs record inner sleeve, Mackay and Mount Isa show displays, an Australia Post display for the national park stamp issue; and the following publications: 'Lake Eacham', 'Queensland Wildlife Legislation', 'Honorary Ranger Newsletter', 'Exploring Noosa' and 'Granite Arch Discovery Walk'. Many of these have been totally illustrated with artwork.

Lectures and Talks

We were once again unable to cope adequately with the many requests by organizations and institutions for talks and addresses. Despite this, more than 2 000 people were catered for by officers of the section. Staff members ran a National Environmental Awareness Workshop in Canberra, a Puppetry Workshop in Victoria, a Wildlife Photo School at Lamington National Park. It has since been further developed. Guest House (Lamington National Park) in conjunction with these two tourist resorts. These schools will be continued on a yearly basis. All Section staff have been involved in public talks at many levels.

Displays

A special display was constructed for the opening of the Sir Thomas Hiley office and Information Centre at the southern end of Cooloolo National Park. It has since been further developed.

In conjunction with the launching of a series of stamps on Australia's national parks, featuring Girraween National Park, a display was erected in the Brisbane G.P.O. The Service's new public relations caravan was given its first public appearance on World Environment Day. Artwork was featured heavily in this display which was set up in Adelaide Street near the City Plaza for three days. Service staff manned a display at the Society for Growing Australian Plants exhibition in September, and public response proved to be so good that this will probably now be a regular venue for the Service to provide information to the public. The Octanorm display panels were used for the first time simultaneously at the Mount Isa and Mackay Regional Shows and received favourable public comment on their attractive appearance. A map display was mounted for the Australian Institute of Cartographers' Conference.

Publications

Technical and natural history papers published during the year 1978-79 by officers of the Technical Services Section were:

Dwyer, P., Hockings, M., Willimer, J.—'Mammals of Cooloolo and Beerwah'—*Proc. R.Soc.* 90 65-84 (1979).

Mackness, B.—'Conned by a Kakapo'—*Jetway/Air New Zealand Magazine* (July-September, 1978).

Ogilvie, P., Parish, S.—'A Century of National Parks'—*Sunday Mail Colour Magazine* (29-4-79).

Photo Library

Despite spending less time in the field than in previous years, staff photographer Mr Steve Parish increased the content of the slide library to about 125 000 of 35 mm transparencies. These further additions originated from trips to Carnarvon, Cooloolo and other southern Queensland land systems. With the commencement of Ms Denise Scorey as permanent librarian, Ms Frances Hadina has been available to index and file the backlog of uncatalogued slides that has accumulated and to establish a more efficient loan procedure for photographs and audio-visual equipment. A photograph of Girraween National Park was supplied to Australia Post for inclusion in its national park series of stamps. Many other photos were used in posters, Service publications and supplied to park authorities in other States for use in such publications as 'Australia's 100 years of National Parks' by the New South Wales National Parks and Wildlife Service.

Audio-Visual

Work has continued on the production of slide presentations set to music and voice tapes. The success of this medium in both audience impact and ease of presentation cannot be overemphasized. The expansion of this style of presentation should enable better communication of Service policies and principles.

Interpretative Programmes

On-park interpretative programmes were conducted on all major parks in south-east Queensland during the year. Lack of staff prevented any regular activities being carried out in north Queensland; however, 10 600 individuals participated in guided walks and night activities presented by either Technical Services staff or volunteers. Mr Marc Hockings at Girraween National Park presented programmes to 4 528 people, while special thanks must go to the members of the Bunya Mountains Natural History Association who collectively catered for over 3 000 people on guided walks and activities.

Visual Identity

The development of a strong visual identity for the Service remains a priority. Quality design of publications is seen as a tool, vital to effective communication of conservation messages. The skills that have been developed by Service staff have promoted a standard of design that creates an image of an innovative, competent, authoritative—yet approachable Government Department. The design standards are recognized as positively improving our communications.

The Service is being recognized both intra and inter state, as well as overseas, for the quality of its print graphics. The implementation of this policy has brought favourable comment to the Government for endorsing this initiative. As a direct result, Technical Services Section has offered design and print graphic advice to a number of both government and non-government bodies.

Brochures

A total of 15 new brochures and posters were produced by the Section during the course of the year, while a further 15 publications were either reprinted or revised. Of particular note was the 'Girraween Bird Key'—a guide for the inexperienced bird-watchers to identify the birds of Girraween National Park, and 'The Platypus' brochure containing a questionnaire to ascertain further knowledge of the distribution of this interesting mammal. The following is a list of publications and the numbers produced during the year.

New Publications

'Humans Have a Heart'—2 000 (new poster)
Green Ring-tail Poster—9 000 (new poster)
Lamington Spiny Cray—6 000 (new poster)
Kinaba—10 000 (new brochure)
Exploring Noosa—15 000 (new brochure)
Walking at Binna Burra—10 000 (new brochure)
Magpie Brochure—10 000 (new brochure)
Platypus Brochure—10 000 (new brochure)
Granite Arch Discovery Walk—12 000 (new brochure)
Araucaria Self-guiding Walk—10 000 (new brochure)
Just for Kids—5 000 (new brochure)
Hinchinbrook Island National Park Brochure—10 000 (new brochure)
Queensland Wildlife Legislation—1 500 (new brochure)
Girraween Bird Key—1 000 (new brochure)
The Ranger, Vol. 12 No. 2—500.

Revised Editions

National Parks of Central Coastal Queensland—15 000
Bunya Mountains Brochure—15 000
Cape Hillsborough Park Brochure—15 000
Walking at Bunya Mountains—15 000
Maiala Self-guiding Nature Walk—10 000.

Reprints

National Parks of Southern Coastal Queensland—5 000
Reptile Poster—8 000
Possums of Queensland—10 000
Waterbirds of Queensland—10 000
Green Ring-tail Poster—5 000
Girraween Park Brochure—5 000
Carnarvon Broadsheet—2 000
Magpie Brochure—10 000
Reptile Cards—5 000 each of 12 from posters
The Rain Game—3 000

Interpretative Facilities

The Sir Thomas Hiley Centre is intended to be the management and public information centre for the southern end of Coolool National Park.

The Carnarvon Information Centre, though not yet officially opened, is proving its worth as a centrepiece for the dissemination of park and nature conservation information.

Our interpretative officer permanently based at Girraween National Park was supplied with an official vehicle that will facilitate his handling of interpretative programmes throughout the Stanthorpe/Warwick Region. It is very important that much of our work be done outside national parks to avoid the risk of only 'preaching to the converted'. A telescope has been purchased and will be featured in some future interpretative programmes.

Several thousand dollars have been spent on purchasing a modular display system suitable for the caravan and static displays. This system has proved to be versatile, attractive and easily erected. The caravan will enable many more provincial centres to be exposed to the conservation message.

Honorary Protectors

The Service policy of appointing further honorary protectors only when requested by field staff and only for particular areas of Service need has continued this year. Many of the 49 appointments made this year were National History Association members who assist the Service with park interpretation programmes. Others were people with special skills of value to the Service or people who lived in areas not regularly visited by service field staff and who therefore can represent the Service in an honorary capacity where necessary.

'The Ranger', a Service-produced magazine for honorary protectors, has been a major means of liaising with them, along with personal contact with field officers where possible. Five honorary protector groups have been operating this year—at Townsville, Mount Isa, Mackay, Sunshine Coast and Brisbane. The Brisbane and Townsville groups meet regularly and have been involved in group activities such as staffing an information booth on World Environment Day, assisting the Service in national park management activities, as well

as giving talks and providing general public education on Service matters. The other groups meet from time to time to discuss mutual problems and possible solutions and are more active in wildlife matters. These groups have been of particular assistance to their local Service officers. Most honorary protectors who are not in these groups operate independently with little Service contact. They act as Service 'eyes and ears' in more remote areas.

However, we are still labouring under the large number of appointments made before the Service was formed. Although the Service recognizes the role some of these people play, many are no longer as active and involved as we would like.

The Service realizes the value volunteer assistance can play and has played, and wishes to thank the honorary protectors for their assistance in the past year.

The following honorary protectors were appointed this year:

Michael Anthony Applebee; Lloyd Robert Duval; William Darren Grigor; Elva Laurline Crawshaw; Garry Viktor Klimkowicz; Tony Jenner Studwick; Wayne John Blank; Lynette Joy Durrand; Malcolm Douglas Durrand; Phillip Francis Lord; Kathryn Ann Sutcliffe; Barry Ray Jahnke; Margaret Rose O'May; Robert Thomas O'May; Thomas McCourt McRae; John Henry Russell; James Arthur Sorley; Kenneth Douglas Weir; Hendrik Arnold Mulder; Robert Ernest Kidner; Joseph Francis Watson; Helen Humphrys; Glen Ellis Stackelroth; George James Sleight; Michael Walter Prior; William Blair Sokolich; Diane Fay Ludke; Kenneth Stanley Stevenson; Norman James Cave; Norman Rex Gibson; Leslie Ronald Weller; James David Spencer Davie; Howard Mark Spranklin; John Clover Youngman; Paul Bernard Flanders; Winifred Smith; Graham Gerard Tiffany; John Alexander Armstrong; Edward William Myers; Kenneth Robert Ashford; Robert David Brennan; Louis Gugenberger; Robert Letton Lake; Harry Frauca; Paul Arthur Harris; Reginald Bertram Crawshaw; Ian Anthony Redmond; Jan Germain Lichos; Alan Philip May.

The Service wishes to offer its congratulations to these honorary protectors. It is hoped that these people can further the Service's nature conservation aims in Queensland by closely liaising with field staff and doing their utmost to educate the public in the responsible use of our resources.

Library

A librarian, Ms Denise Scorey, was appointed to National Parks and Wildlife Service by State Library in March, 1979. She has as yet no specialist assistant.

The need for library services has increased over the past few years, and in the first three months after appointment the librarian processed 266 loans and 228 inter-library loans.

Current awareness services continue to be provided for field staff in the form of contents pages of currently held journals and a regularly published accession list. Research and reference services are urgently required, particularly for the field staff whose research projects are hampered by inadequate library research services. More reference service to field staff is limited because of inadequate staff.

One of the major purchases this year was a microfiche/film reader which is housed at Head Office.

The librarian is now cataloguing the Head Office collection and will then proceed to catalogue the collections in the field stations. The Service is continuing its policy of acquiring some rare and old books which are of particular relevance to Queensland natural history. This year, \$1,500 was spent for such purposes.

Drafting and Mapping

The main thrust of activity this year was directed towards the assembly of publication material. About 50 per cent of drafting and mapping staff were directly involved in this aspect of the work. Preparing some field exhibits gave opportunity for some drafting personnel to be involved in 'on-site' working experience with displays. The purchase of a 'Leteron' machine has been a real asset in many facets of our work.

The acquisition of further large parcels of land for addition to the Girraween National Park has resulted in a major revision being undertaken for the map of that area. This and other park maps continue to be in regular demand by the public. A set of state maps has been prepared for Research and Planning Branch, depicting various types of regional divisions.

With the appointment of additional regional park staff, the demand for more maps has become an increasing problem. Lack of suitable surveyors working on Service holdings means that detailed park maps cannot be regularly updated, and no new maps attempted.

Advising on and ordering of aerial photos, making searches for tenure checks, organizing national parks and wildlife plans for park gazettals and illustrating plans for service interest areas are ongoing daily activities for this unit.

Natural History Association

In the past year, natural history associations have continued to work closely with the Service, disseminating our conservation philosophy and practice to the public. Their activities include outings, talks, guided walks, Junior Ranger Programmes and the publication of interpretative material. Membership has steadily increased throughout the year at Mount Tamborine, Bunya Mountains, Binna Burra and O'Reilly's (the last two being branches of the Lamington Natural History Association). The Association at Mount Glorious/Mount Nebo is presently working on material for publications relating to birds, mammals, reptiles and amphibians found in that district, as well as a species key for identification of butterflies found in the region.

The Bunya Mountains Association has received the generous gift of a 90-year-old slab cottage, 'Cedar Vale' homestead, which the members intend to move to the mountain—a formidable task. The cottage will be used as a base for this very active Association and also provide a venue for evening talks and meetings in an historic atmosphere.

A new Association has been established on Lindeman Island where, in conjunction with the resort, a cross-section of people, many from overseas, will be introduced to our natural heritage. The resort is organizing a children's camp on the Island where youngsters can become aware of the beauty and value of nature. We wish this Association, the first of its kind on a tropic isle, every success.

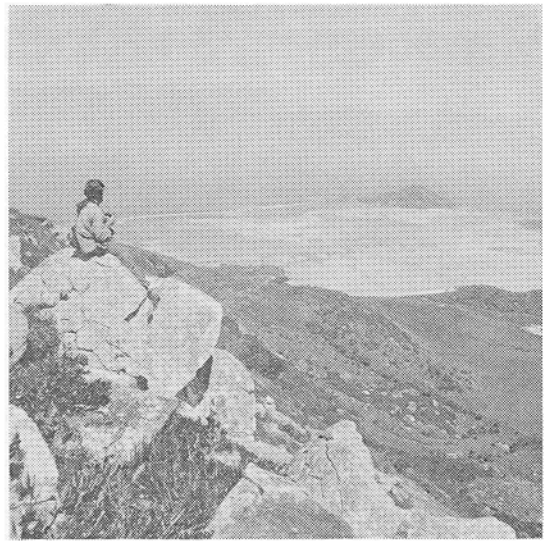
Regrettably, the Magnetic Island Association has currently lapsed. This is partly due to the difficulties inherent in Queensland's cast size and the necessity for close liaison between the Service and Associations, especially during the early formative stages.

Overseas Trips

For the first six months of the year, the Interpretive Officer, Mr Bill Carter, as a Churchill Fellow, travelled to the United States of America, Canada, the United Kingdom, Kenya, Seychelles Islands and the Republic of South Africa to review developments in interpretation in those countries.

Sign Manual

The major project of producing a sign manual is nearing completion. A number of changes to the existing system have been included in the interests of better appearance, improved readability and to reduce the cost of sign production. The use of a new upper and lower case alphabet and symbol signs are major features of the new system.



Interpretative Planning

To rationalize the use of the limited financial and manpower resources and to ensure that best use is made of the park environments in conveying interpretative messages, the section has set out to plan its activities and define its objectives much more clearly over the past year. Largely based on the Canadian approach to interpretative planning, the Section is making a contribution to the overall planning of the Girraween-Severn River National Park complex. It is hoped that this approach can be expanded to ensure that more effective use is made of visitor contacts to convey conservation messages. It is hoped that the Section will be able to follow a programme of finding out more about visitor expectations and evaluation of media and programmes to improve communications. To this end, a small programme is under way in co-operation with James Cook University to investigate visitor attitudes to caves and the effect of guiding on their appreciation of the cave environment.

Great Barrier Reef

The Section has been closely involved in discussions relating to planning, management and interpretation on the Great Barrier Reef. This involves close liaison with the Great Barrier Reef Marine Park Authority and the Queensland Fisheries Service.

Attempts have been made to interest resort operators (on national park islands) in providing their own interpretative programmes with assistance and advice from the Service. This theme was reinforced by Mr Peter Ogilvie, Officer-in-Charge of the Section, when he spoke at the Mackay Workshop on Tourism and the Great Barrier Reef. There have been some very encouraging responses.

Management and Operations

Wildlife

Weather and Conditions

Weather for the 1978–79 financial year has followed a common pattern. It was dry until December–January (Cairns' lowest annual rainfall in a decade), with average to severe wet with flooding and cyclones (North Queensland) for three months. Dry, extending to drought, conditions established in many southern and western areas of the State for the rest of the period.

Seasonal conditions must vary at any one time over an area the size of Queensland. It is therefore most desirable to retain wildlife throughout its natural distributions. A series of relatively favourable seasons for wildlife has recently occurred. However, dry conditions since April have made the generally healthy populations of most fauna more obvious.

The upturn in beef prices and the record planting of grain crops associated with favourable markets and harvests have had direct effect on wildlife. A stimulation to development in many primary industries occurred with consequent land clearing and increased planting and stocking. The severely dry conditions in the winter have worsened agricultural prospects, prevented much planting, and concentrated kangaroo populations onto winter crops and improved pastures.

Staffing

The appointment of new Wildlife Rangers to Mount Isa and Toowoomba brought the total for the State to nine. A Ranger is now stationed in each of the six fauna districts at Cairns, Townsville, Rockhampton, Toowoomba, Charleville, Mount Isa and three in Brisbane. An additional officer provides periodic assistance at Mackay.

Senior Ranger Mark Weaver completed 10 years' Government service in wildlife conservation. His early training on a research station provided the preferred background for a Ranger. A

thorough grounding in species, their behaviour and distribution and the habitat in which they are found was achieved through fauna surveys and assisting researchers. Later training and law enforcement at the Police College and extension training with one of the Service's parent bodies (Department of Primary Industries) contributed to an on-going education process to cover the three main requirements of a wildlife ranger, i.e. research, extension and law enforcement.

An increasing amount of Rangers' time is spent in being direct servants to the public. This necessitates spending up to 70 per cent of time in an office and dealing with cosmetic urban problems of individual animals that are sick, injured, causing a nuisance or suddenly appear through man-made disturbance or natural population movement. This demand for time is impeding activities more effective in conserving nature such as work on large-scale illegal activities and contact with the rural sector where the bulk of nature lies. Clerical assistance would help greatly in this regard.

The addition of the two rangers plus new accommodation for the ranger at Cairns is most appreciated. The ranger at Mount Isa is operating from his home due to lack of official premises, whilst the office at Toowoomba is not yet ready and there is no official vehicle available for that officer.

Continuing assistance was given to research staff and visits to national parks were made on a regular basis. Assistance was provided in drafting the proposed Plant Protection legislation.

Participation in a crocodile survey of four rivers in western Cape York Peninsula from the University of Sydney's research vessel 'Harry Messel' indicated that salt water crocodile populations were low and cause for concern. Four major bird rookeries were located during this survey.

Regular patrols of the Cape York Peninsula were maintained to help control activities of a rapidly increasing visitation to the area of general tourists and people more specifically interested—legally or illegally—in the endemic wildlife.

Three individual research projects continued (wedge-tailed eagle, golden shouldered parrot, 40 mile scrub). Two new projects were commenced (Chital deer, fruit pigeons).

Extension

Lectures to cadets at the Police Academy at Oxley continued so that each new Police Officer receives a grounding in the concept and workings of the Wildlife legislation. Similar talks are given to Department of Primary Industries, Harbours and Marine and Forestry Officers.

Talks have been given to a wide section of the community such as avicultural and wildlife societies, schools, honorary protectors and sporting shooters associations.

An hour-long session was conducted from Cairns on the School of the Air that was extremely interesting and stimulating to all participants. Assistance with educational and documentary filming on wildlife and nature conservation topics has been an interesting extension to normal duties.

Attendance and participation in displays at agricultural and district shows continues to attract and stimulate the interest of the public.

Sport Hunting

Open Seasons were declared for the usual six species of duck (black, maned, grass whistling, water whistling, white-eyed and grey teal), two quail (stubble and brown) and two snipe (Japanese and Chinese). The population status and distribution of these species were considered satisfactory and sufficient to warrant an open season.

Bag limits were also set at previous levels, i.e. during a 24-hour calendar-day period, 12 wild duck, 12 quail, six of each species of snipe. A condition of the permit is for shooters to advise the number and species taken during the season, but less than 10 people have complied with this requirement. The open seasons were generally without incident, and the usual liaison with the Police Department and other Wildlife Officers assists in this regard.

1728 permits were issued, and those were predominantly for ducks, with 275 for quail and 161 for snipe.

169 open season fauna permits were issued for personal use for kangaroos and wallabies.



Kangaroo Industry

The season commenced normally, with the setting of the usual annual quota of 800 000 kangaroos.

The situation rapidly changed due to (a) dry seasonal conditions in all traditional kangaroo harvesting areas; (b) rumours that the ban on importation to the United States of America was to be lifted together with firm orders from European markets; (c) the entry of the Japanese into the market; and (d) the high price of other leathers.

These factors in turn caused prices for skins to rise for several months from recent averages of \$4.00, \$3.00, and \$2.00 per skin according to grade to around \$8.00, \$7.00 and \$6.00 and sometimes higher for quality red kangaroo skins. Coincidentally applications were received from an increasing number of farmers and graziers for permits to reduce damage to crops and pastures caused by kangaroos concentrating on such remaining feed.

An influx of shooters from interstate and revival of interest by previous shooters who had sought alternative employment during the rural recession and the export bans on kangaroos, increased the demand for permits and tags.

At the end of the financial year, it is apparent that the quota will need to be raised considerably to give relief to the rural community. The quota setting system by agreement with CONCOM members is not flexible enough presently to cater for the requested increases.

The Service will make every effort to convince the Commonwealth Authority that officers of this Service have the competence to vary the quota on safe biological grounds within agreed limits in this State. Research officers in the Service were monitoring kangaroo populations to ensure safe harvest numbers well before any Commonwealth involvement.

Detailed administration of the industry is not possible with present numbers of staff; but the co-operation of many shooters and dealers helps retain a reasonable situation. The paramount consideration is that at no time has concern for the status of commercial species of kangaroos been felt by those in possession of relevant biological data.

No. of Skin/Carcass dealers (Class A)	17
No. of Skin dealers (Class A)	30
No. of registered chiller (carcass) sites	85
No. of Open Season Fauna Permits (for sale)	1 398
No. of Kangaroo tags issued—yellow (calendar year 1978)	745 000
No. of Wallaby tags issued—pink	11 100

Deer Farming

The interest in deer farming has increased greatly. Capital and expertise are being attracted from interstate and overseas as well as local sources. Close liaison is continuing with the Deer Breeders Association.

Management guidelines are being made on the basis that deer are exotic animals and that their spread in the wild should not be permitted. Deer farming is not permitted outside the present range of each species.

Deer have been declared stock under the Stock Act administered by the Department of Primary Industries, and close liaison with that Department is being developed to foster deer farming aspect.

Enquiries from graziers, property inspection, trap inspection, checks on compliance with the number of deer taken and methods of capture, together with attempts at the smuggling of breeding stock interstate, have all given extra duties to Wildlife Rangers.

Permits to take and farm deer total 23 (Red deer 21, Fallow 2) with about 350 wild animals caught for farming.

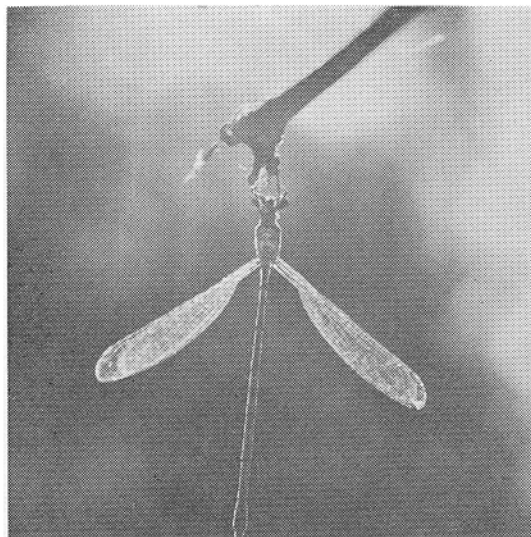
Wildlife Ranger Mr Merv. Parker spent a month in New Zealand studying many aspects of deer farming. He has established valuable contacts.

He also took the opportunity of studying other wildlife management aspects including aviculture. A comprehensive report was prepared for use by fellow officers in managing deer.

Aviculture

Continued liaison with individuals and the various Societies has brought greater understanding of the aims of the Service and aviculturists. Meetings are regularly attended and articles to magazines are provided.

The number of permits to keep native birds has increased considerably and, sadly, many of these are for people who have had protected birds for some time and only now have decided to register.



Three items remain unresolved:

1. The problem of keeping certain species that do not easily breed in captivity and are therefore dependent upon illegally caught wild stock.
2. The problem of a few people who insist on their right to keep any species of bird in defiance of the law.
3. The number of permits required for various levels of keeping and dealing in birds is often deemed excessive by the aviculturists. Whilst the level of illegal trapping remains significant and the end point of most trapping remains private aviaries, the problem of paper permits remains. During Mr. Merv. Parker's visit to New Zealand, evidence of illegal export of birds to and from Australia and New Zealand was provided.

	1978-79	1977-78
No. of Aviary Registrations issued	425	437
No. of Permits to Keep	584	380
No. of Fauna Dealer's Licences (Class C)	108	93
No. of Fauna Dealer's Licences (Class B)	10	12

Zoos

Attempts at raising the standard of the display of native animals to the public continues. Public opinion and demand for certain standards appears to be a better tool than use of regulations. Attempt at closure of such places has always been difficult in practice with such a wide range of public acceptance. There are 24 premises exhibiting fauna to the public, mainly in coastal areas.

Scientific Collection and Research

Increasing demand by interstate and overseas scientists to collect Queensland fauna is causing some concern to the Service, members of the public and local scientists. Some applications are for high numbers of many species over wide areas. Rationalization of the need for research and the interim protection of species is another example of the fine-line decision-making

required in dealing with wildlife conservation.

Considerable bird-banding activity occurred over wide areas of the State. These activities are carried out in conjunction with the Commonwealth bird-banding scheme.

Permits Issued

Scientific permits to collect	35
Permits to take	69
Permits to band birds	23

Crops and Personal Damage

Provision under the Act exists to enable protected native fauna to be taken that is causing or likely to cause damage or injury. Because of staff shortages, authorities to issue permits for certain common species have been vested with several responsible organizations. Reports on the take are submitted periodically.

Forty-six individual crop damage permits were issued including 11 kangaroo and 20 wallaby, 12 duck, nine magpie geese, five brolgas and other for cockatoos, lorikeets, rosellas, deer, crows, currawong and ground rats.

Permits to take magpies approached 100 for the State, with Brisbane City (68) requiring the most. A brochure dealing with the biology of the Australian magpie, together with advice on the occasional seasonal attacks, was distributed to schools and to each applicant for a permit. Actual bodily attacks appeared to increase this season.

Species Report

Bridled Nail-tailed Wallaby (*Onychogalea frenata*)

The acquisition of Taunton Station (5 285 ha) (the last stronghold of this species), with the assistance of a \$200,000 Commonwealth grant, was completed. An interim management plan was drawn up, and a post graduate student commenced research into some aspects of the animal. The previous owner is phasing his cattle from the property and is

co-operating with management requirements.

Bent-winged Bat (*Miniopterus schreibersii*)

A major breeding site in south-east Queensland is under threat from mining of the high grade limestone forming the hill and cave area. Negotiations are continuing satisfactorily with the mining company so as not to disturb the breeding site in any future mining activities.

Queensland Hairy-nosed Wombat

(*Lasiorninus barnardi* (Longman))

Management of these wombats in their habitat in Epping Forest National Park is commencing. This species is very definitely in danger of extinction.

Pelican (*Pelicanus conspicillatus*)

Populations appear to have stabilized, and mass mortalities have not been reported as in the previous two years.

Cassowary (*Casuarius casuarius*)

Observations of cassowary nesting were made in late August until the hatching of three chicks took place in early October.

The fork-tailed kite, *Milvus migrans*, the square-tailed kite, *Lophoictinia isura*, the whistling Kite, *Haliastur spheurnus*, and the brown falcon, *Falco berigora* became abundant in the Cairns region during July and December, 1978. Significant mortalities of raptors and insectivores were experienced on a farm near Innot Hot Springs following an application of the insecticide OSODRIN to control a grass-hopper outbreak.

Three cases of snake bite occurred in the south-west region, and in each case the wildlife ranger was contacted to identify the snake.

Mutton birds—Heron Island



Law Enforcement

Fauna Squad

The two members of the Police Fauna Protection Squad are seconded for duty to the Service and work under Service direction whilst remaining under the control of the Commissioner of Police.

The Squad's progress during the year was one of steady consolidation in terms of the acquisition of vehicles and equipment and the definition of geographical areas of interest.

Structural facilities for the holding of seized fauna are in the course of erection. The imminent availability of these structures will provide the Squad with the necessary suitable accommodation required for the holding of faunal exhibits for court purposes. Two animal attendants have been employed to look after such fauna.

Throughout the year the squad operated in various parts of the State in co-operation with Wildlife Rangers; exemplified by a squad member functioning in north Queensland in conjunction with ranger staff for a six-week period.

The Squad was also involved in aspects of the enforcement of legislation relating to the kangaroo harvesting industry.

Another sphere of operation was to liaise with various wildlife organizations. At the request of the Service, the Officer in Charge of the Squad addressed public meetings held at Toowoomba, Bundaberg, Townsville, Proserpine and other centres.

The policy of the Service is to resolve minor infringements of the law through education, explanation and warnings. Most law enforcement duties involve these aspects and produce satisfactory results. Recommendations for prosecutions are generally made only when other methods fail or in serious, large scale, or persistent breaches. Lists of successful prosecutions do not necessarily indicate the total illegal activities or the ameliorating effects of the above policy.

A hand-out 'Queensland Wildlife Legislation' was revised and published in illustrated booklet form.

In October, 1978, the Service appointed a Clerk Prosecutions to be responsible for all correspondence relating to possible offences committed under the various Acts administered by the Service. Previously, in some cases, the time limit for prosecution expired before court action could be instituted.

Fifteen (15) prosecutions relating to birds, mammals and reptiles were successful. Fines and penalties imposed totalled \$3,828.

Two nets, two traps, 42 firearms, 85 birds and four snakes were forfeited to the Crown.

In some cases where prosecution was not deemed necessary, warning letters (16) were issued. There are still two cases pending.

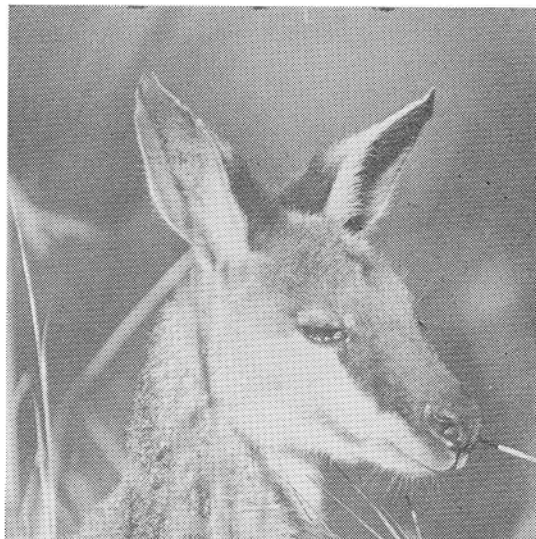
Parks and Reserves

Management Practices and Problems

An essential goal maintained by the Service in the management of Queensland's system of national parks is the provision of a range of recreational opportunities which are compatible with the primary objective of nature conservation. In the pursuit of this goal, development activity on any one national park is always the product of an exhaustive consideration of such parameters as the total physical and biological resource of the specific reserve and its consequent conservation value, the regional and local setting including the availability of other similar areas, and the recreational demand on the resource now and in the future. The production of a formally documented plan of management for each national park area is clearly an impractical and perhaps unnecessary task at this stage of the Service's development. However, this lack does not have the effect of compromising the diligent application of the appropriate management principles in the day-to-day decision-making process.

Following on from the initial development decision, the subsequent site-planning, construction and design considerations, and their implementation, planning needs always to be guided by a careful investigation of the particular development's function, environmental impact and aesthetics. Within this, the idea of environmental and social carrying capacities is always a problem, particularly since the establishment of any facility has been shown invariably to generate an increased demand for its use. Pressures from various quarters to 'over-develop' some areas beyond their environmental capabilities can be an immense problem for the Service.

The aim of providing for a range of recreational opportunities on national parks is, at certain development nodes, being replaced by one of maximizing use—an aim distinctly discordant with the precept of nature conservation. This problem



Whiptail Wallaby

is frequently experienced near areas with relatively high population densities. While the mobility of the private individual has been progressively increasing in recent times, there are now indications that this trend may be reversed as the free availability of energy decreases. This will compound the problem of escalated demand for recreational opportunities near urban areas, and will further precipitate the need for all public and private landholders to meet their social responsibility by rendering more open space available for recreational pursuits. Such pursuits need not conflict with the respective principal purposes for which such land is managed. This must particularly apply to those State Government agencies and Local Authorities who have land management responsibilities.

Planning for recreation on a regional base through co-operation between the various land management authorities is of increasing importance. This theme was adopted by Mr Mike Harris, a management officer with the Service, in speaking at a recreation seminar held in December, 1978, at the Bardon Professional Centre.

Throughout the past year, the Service has continued to establish and maintain a system of recreation facilities on national parks throughout the State. However, this activity continues to be constrained by limitations in manpower and financial resources. This is particularly significant in respect of the Revenue budget allocated to the Service. This fund is the sole contribution to visitor facility maintenance programmes throughout the State and without significant increases in this area, established facilities cannot be kept from the onset of deterioration. Also, much of the work undertaken by the Service in the construction of picnic facilities and walking tracks is labour-intensive, and the field staff restrictions which have beset the Service since its inception have made essential tasks difficult.

Most noteworthy in the area of major facility construction has been the completion and official opening of the visitor information centre at Coo'oolo (Lake Cootharaba). The building was named 'the Sir Thomas Hiley centre' to honour the concept the former State Treasurer had in making available the considerable funds of the Bird and Wildfowl Society (in excess of \$70,000) towards a Service project which would foster interest in waterbirds.

The building (illustrated in this report) was opened by the Hon. the Premier, and an honoured guest speaker was a founder member of the Society and former Governor of Queensland, Sir Henry Abel Smith. Adequate provision for face-to-face contact with the visiting public in national parks is one of the Service's major concerns and is an important facet of co-ordinated park management and interpretation activity. Environmental education and the fostering of environmental awareness together comprise a most significant social role accepted throughout the Service.



Special Leases on National Parks

The Service, with the Land Administration Commission as the leasing authority, administers a series of special (tourist) leases over certain areas of national park. Each of these leases is granted for purposes considered compatible with the management objectives of a particular national park and is intended to facilitate the public's enjoyment of that park without prejudicing its nature conservation value. Before such a special lease can be granted, a careful and comprehensive assessment is made of the implications of the proposed development in perpetuity, its environmental impact, the availability of alternative areas other than national parks for the proposed development, aesthetic considerations and its justification in terms of function and public need. The stringent constraints which must be applied in accordance with the true spirit of the statutory park management objectives dictate that most lease applications are not successful.

To date, such special leases have most frequently been associated with the provision of visitor accommodation on off-shore island national parks.

Another significant purpose for which special leases are granted is to enable the establishment of facilities for scientific research. In addition to the environmental constraints which are applied when the Service considers the granting of such a lease, appropriate scientific credentials, a comprehensive statement of intent, an assurance of funds and a lack of research facilities for similar purposes at another location are also essential prerequisites. This year, James Cook University in Townsville was successful in its application for a special lease to establish a marine research station at Orpheus Island. It is now in the process of constructing the facility to specifications which are the product of a thorough impact and feasibility study, both in office discussion and in joint on-site inspections between representatives of James Cook University and officers of the Service.

Fire Management on National Parks

This Service is currently in the process of reviewing its fire management policies for land under its control. As a part of this review, Technical Projects Officers are developing systems for more comprehensive reporting and recording of fire outbreaks on national parks in Queensland.

These systems include a map grid co-ordinate programme designed to permit rapid transmission of fire status information from field staff in the event of a major fire outbreak.

Equipment and staff capabilities are also being reviewed in conjunction with the Service's Fire Management policies with the object of achieving a more efficient distribution of resources.

A series of target dates is being considered for the implementation of the new policies and systems.

Search and Rescue

Following recent accidents involving death and injury to persons on Queensland national parks, the Service is examining ways to promote better co-ordination with emergency-service organizations during rescue operations conducted on Service-controlled land.

Close liaison between these emergency organizations and national park staff is necessary to ensure that searches and rescues carried out on national parks are effected as speedily and efficiently as possible.

There have been some examples of rescue attempts being prolonged because of the failure of some emergency organizations to contact Service personnel when a crisis first becomes known.

Accordingly, Technical Projects Officers are examining the means by which more satisfactory contact procedures may be created between the Service and emergency organizations and also the establishment of a mutual understanding of the other's capabilities and benefits in rescue situations.

It is envisaged that a series of liaison meetings will be held with these organizations in late 1979 to achieve our objectives.

Cliff Rescue Training Courses

A series of training sessions was held for national parks field officers from parks in the south-east management region covering techniques of cliff rescue.

Serious cliff rescues are not common, but do occur in this area, and it was considered that officers on national parks with cliff lines would benefit from a working knowledge of cliff rescue procedures. Even if field officers of this Service do not participate directly in any cliff rescue operations, by attending these courses they will at least be capable of anticipating the requirements of any such operations and could lend valuable assistance should circumstances demand their involvement.

Kinsba boardwalk



Sessions were held at Girraween National Park for staff from Girraween and Cunningham's Gap and at Mount French for officers from Binna Burra, Springbrook and Natural Bridge. Technical Projects Officers from Brisbane Head Office also attended the Mount French sessions to assess the value of the courses for park staff in other regions.

The groups were instructed by Robert Staszewski of the Maroon Outdoor Education Centre, and techniques practiced included rapelling and belaying, setting up and lowering ropes with belays and stretcher handling. The officers gained confidence in these techniques and a knowledge of the procedures necessary in the event of accidents in cliff areas.

Contact has also been made with Federated Mountain Rescue who frequently practice in national parks and who are called out by the Police in cases of search and rescue, including cliff rescue.

Regional Administration and Staffing

Further progress was made during the year toward the regionalization of park management and administration. Ordering systems have been modified to facilitate the purchase of goods within the regional infrastructure, and the allocation of funds has been dissected to a more regional level to enable the implementation of more reliable budget control procedures.

A major step has been the provision of suitable office accommodation at regional and subregional park management centres throughout the State. New office accommodation at Cairns was opened by the Minister, and office extensions at Townsville (Pallarenda) were made. Offices already exist at Rockhampton and Mackay. Establishment of further office accommodation at Maryborough, Gympie and Moggill completed the statewide administrative framework for park management. However, there is a desperate need for clerical, typing and general assistant staff to be appointed to these offices. The Service places great importance on the establishment of any medium which will facilitate contact with the public in both an official and an information-giving or interpretive capacity. These offices, if given adequate staff in the near future, provide one such medium to serve the public. Complete details of these park management regional centres are as follows:

Centre	Management staff	Address	Telephone
Brisbane	1 Regional Superintendent	55 Priors Pocket Road, Moggill,	07
	1 Regional Overseer	Brisbane	202 6676
Gympie	1 Ranger	Courthouse, 32 Channon Street,	071
	1 Regional Overseer	Gympie	82 4189
Maryborough	1 Regional Superintendent	Courthouse, Wharf Street,	071
	1 Regional Overseer	Maryborough	21 3171
Rockhampton	1 Regional Superintendent	Alstrand Building, 8 East Street,	079
	1 Regional Overseer	Rockhampton	27 6070
Mackay	1 Ranger	Victoria Street, Mackay	079
			57 6291
Townsville	2 Rangers	Marlow Street, Pallarenda,	077
		Townsville	74 1332
Cairns	1 Regional Superintendent	Moffat Street, Cairns	070
	1 Ranger		53 3531
	1 Regional Overseer		

Cairns Region

This year, the Cairns Region suffered substantial damage from three cyclones. Repairs to Service facilities and improvements cost in excess of \$22,000. Most repair work has been completed, and the major work to be done is the Mount Elliot access road which is being repaired for the Service by the local Shire Council.

A new regional administrative centre, in Cairns, which was constructed by Service staff was opened on 15th December, 1978, by the Hon. T. G. Newbery, Minister for Culture, National Parks and Recreation. The centre, built at a cost of \$22,650.00, will enable the Branch to make information more readily available to the public. Additionally, the centre provides accommodation for wildlife and research staff, thereby increasing the Service's efficiency in northern Queensland. Other much-needed facilities completed during the year include workshops at Chillagoe, Josephine Falls and Cardwell; offices at Magnetic Island and Cardwell; and a new amenities block at Mount Elliot.

Improvements to picnic facilities and camping areas in the region were constructed at Mount Spec, Mount Elliot, Jourama Falls, Brook Islands, Palmerston, Lake Eacham, Chillagoe, Mossman Gorge, Jardine River and Iron Range.

Vandalism remains a problem in many of these areas. However, it has been noted at Lake Eacham that since the lakeside has been re-developed, there has been a significant drop-off in the level of vandalism on that park.

The system of slashing and burning firebreaks on Magnetic Island continues to prove successful with no major fire problems encountered during the year on that island. Cairns Region staff have had discussions with the Rural Fires Board, other Government Departments and landholders on plans to co-ordinate hazard reduction burning on several parks.

Regional staff have been involved in giving talks, attending field meetings and serving on various

committees throughout the Region. In addition, Cairns Region staff have attended meetings of several Shire Councils throughout the Region. This continuing contact has led to the Regional staff becoming involved in proposed recreation developments within several Shires.

Again, with assistance from third Task Force R.A.R., walking tracks on Hinchinbrook Island and picnic facilities were constructed during the year. This Army unit was glad of such a practice area.

Management survey work on Cape York has continued during the year with valuable input from various Universities and the CSIRO. This survey work is designed to provide a reservoir of facts on visitor usage, potential development and management strategies. Well researched and documented management planning statements have been drafted on the following areas: Lake Eacham, Hinchinbrook Island, Porcupine Gorge, Mount Elliot, Edmund Kennedy, Magnetic Island and Mount Spec.

Red tailed tropic bird—Raine Island



Rockhampton Region

The ever-increasing visitation to the parks in the Rockhampton Region, including Eungella, Conway Range, Whitsunday Islands, Carnarvon and the Capricorn/Bunker group, has placed a heavy strain on the workforce and facilities provided. Major developments have, of necessity, been constructed at Carnarvon where an office/visitor information centre has been completed. During the Easter period this year, in excess of 1 200 campers visited the park. The recently constructed amenities block was able to cope; however, the ever-increasing number of campers indicate that some further development may be required.

Visitor facility developments have also been constructed on the more heavily visited parks in the northern area of the Rockhampton Region. New amenities blocks have been constructed at Eungella and on Whitsunday Island parks. Walking tracks on Conway Range have also been extended.

Closer to Rockhampton, facilities have also been developed in the form of a camping ground with amenities and water supply on Humpy Island in Keppel Bay and a picnic ground and walking tracks through a limestone cave at Fitzroy Caves.

Patrols of the off-shore island parks have increased, resulting in greater contact with campers and visitors and more effective maintenance of facilities. Islands of the Capricorn/Bunker group are receiving particular attention with the removal of decades of litter built up throughout these islands and more stringent management of those parks gazetted as Scientific Areas—Fairfax and Hoskyn Islands.

Gympie Region

During the year, a major portion of the Gympie Region's expenditure was directed to the development of facilities on Fraser Island and Cooloola National Park. Two houses to accommodate staff on Fraser Island have been completed. A third house is under construction. Associated with this development is the provision of water and power facilities. Two camping grounds are being established on Fraser Island providing toilets, showers and barbecues. A third camping ground is presently under consideration.

The funding to date for Fraser Island has been from a special Commonwealth disability grant.

To ensure the stability of the frontal sand dunes on the island and to provide for regulated use of off-road vehicles, a corduroy access ramp over the dunes was constructed. Further corduroy access ramps are planned. A large number of directional road and information signs have been constructed and erected by Gympie Region staff to assist park visitors. A store shed has also been constructed in Maryborough to store materials and the patrol boat M.V. 'Pelican'.

Several major plant items have been acquired for use in the continuing heavy development programme in the region. A new tractor, truck, generator and welding equipment are included in these items.

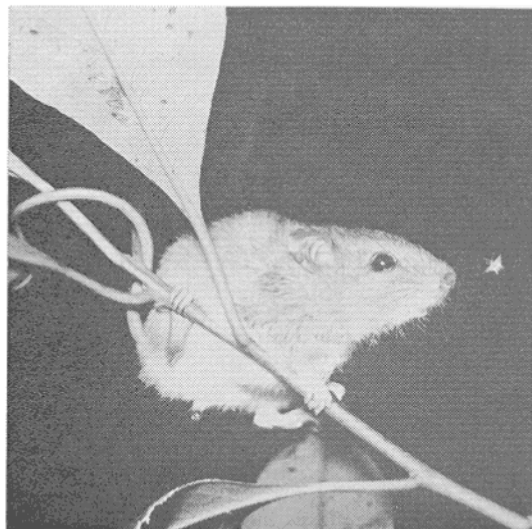
A major item of interest at Cooloola this year was the successful end to the protracted Court hearings dealing with the illegal huts which had been established within the park. In every case, the Court decision was in favour of the Service, and all huts are being progressively removed. The access road to the Freshwater camping grounds, previously only suitable for four-wheel drive vehicles, has been upgraded and is now being used by a considerable number of conventional vehicles. Resultant heavy visitation has placed a strain on available facilities and staff.

The recently opened visitor information centre and ranger office at Kinaba Island on the southern extremities of Cooloola National Park has proved very popular. A system of elevated board-walks through the tidal swamps and the construction of a bird hide near the Centre have attracted increasing numbers of visitors. An interpretive display has also been established at the Centre allowing more effective public contact. The Service patrol boat M.V. 'Darter' makes regular patrols of the lake and river system.

At Noosa National Park, a 'contact' station was opened during the year, at the entrance to the parking area.

Visitors are given information, and regulations are explained upon arrival at the parking area. This public contact has virtually eliminated the once major dog problem on the park. The park walking tracks have been re-surfaced, and a new self-guiding track has proved popular.

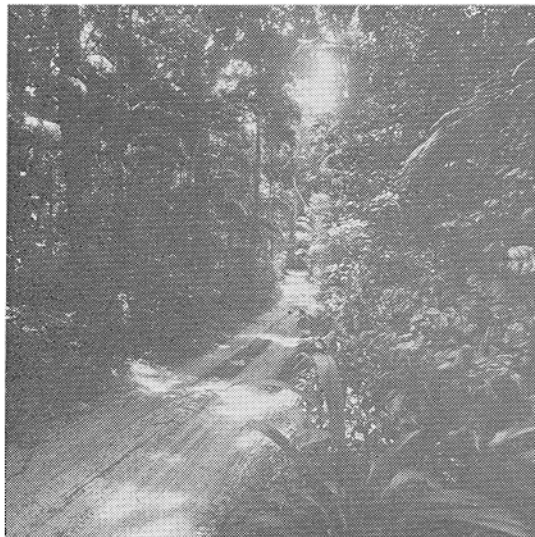
Mosaic tailed rat—moth chasing



Visitor facilities development has also taken place at Woodgate, Kondalilla, Mapleton Falls, Crows Nest and Ravensbourne.

Bunya Mountains National Park continues to attract large crowds during holiday periods. The Easter holiday period is the most popular and taxes staff and facilities to the limit.

Closed forest—Coo'oolo National Park



Brisbane Region

During the year, a major portion of the Brisbane Region's expenditure and staff efforts was directed towards upgrading visitor facilities on those parks which cater to the needs of the populous south-east Queensland area. Several of these parks have been the venue for the on-going Junior Ranger's programme, with local staff being actively involved.

Search and rescue operations have regrettably been required on Lamington and Cunningham's Gap National Parks. In each instance, local staff, assisted by volunteer groups, have performed the rescues, requiring dangerous rock climbing.

To ensure that key staff are well versed in rescue procedures, training courses have been conducted at both Lamington and Girraween National Parks as detailed elsewhere in this report.

During the year, the administrative centre for this Region was re-located at the Service's Moggill office. Although only a short distance from the Head Office, the re-located Brisbane Region office allows an easier contact with park staff, more efficient communication and more efficient forward planning of regional works programmes. It also establishes a regional identity.

To cope with the increasing popularity of parks in this region, new camping grounds are planned at Binna Burra and Green Mountains on Lamington National Park. The Green Mountains camping

ground will be the first to be completed and should be available for use in the near future.

At the Natural Bridge National Park, nearby land with improvements was acquired. These improvements will be renovated and eventually used as a visitor information centre.

The first stage of upgrading the Cedar Creek Falls national park camping area, at Tamborine, has been completed. This work comprised a new car park with improved access. The second stage will see the existing camping ground restored and rehabilitated.

New walking tracks have been constructed on Springbrook, Burleigh Heads and Maijala National Parks.

Girraween National Park continues to remain extremely popular, with advance bookings required to enable public camping during visitation periods. A new camping area and amenities block has been completed, but the demand for camping sites continues to increase. The present 'first in; best dressed' method of allocating spaces will shortly be discontinued and replaced by a ballot system giving all interested persons equal opportunity to visit Girraween. Liaison with Local Government Authorities within this Region increased during the year. Some Shire plant and staff were retained on a 'contract works' basis during park development works requiring the use of heavy equipment and plant.

Unfortunately, acts of vandalism and major breaches of park legislation were evident on several unstaffed parks within the region. These have been countered by increased patrols by nearby local staff on a regular basis.

Rocket frog—Cape York



Management Planning Section

The Management Planning Section was established in response to a public and political demand for the Service to prepare long-term management plans which would guide the Service's custodianship of the State's national and environmental parks.

This demand resulted from increased public visitations, significant major expansions of the Service's estate (including such areas as Cooloola) and the stimulus for nature conservation generated by the establishment of the National Parks and Wildlife Service in accordance with Government policy.

The Service estate has increased from 1 153 350 ha in 1975 to 2 179 938 ha in 1979. This rate of increase is expected to continue for several years.

The areas included in this expansion are presenting the Service with new problems, such as the physical size of new individual parks, the need to consider the validity of both new and previously unacceptable park activities particularly in the context of the new Cape York Reserves, and the initiation of new tourist ventures. This will necessitate the development of new and innovative approaches to park management which must take into account the history of previous land use, public expectations and the importance and possible ecological fragility of the park resource.

Each of the projects undertaken by the section has been of particular significance to the Service. As indicated in the previous annual report, the challenge of preparing management plans for the 321 national parks is formidable, yet urgent. While the staffing of the Section permits worthwhile work being done, much remains undone.

Management Planning seeks to establish guidelines for the decision making process at all levels—local, branch, Service and Government. It ensures that decisions at each administrative level are made within a common framework, thereby eliminating possible conflicts.

In addition to improving the quality of decision making, planning is of assistance in predicting financial and manpower requirements, it reduces unnecessary duplication of work and the performance of non-essential work and identifies management problems and their relative seriousness.

It will require considerable time and effort before all aspects of Service management are brought under the guidance of sound planning.

Staffing

The Section is staffed by the Management Planning Officer, two Management Officers, two Planning Projects Officers and two Aboriginal Site Conservation Officers. The Planning Projects Officers and Aboriginal Site Conservation Officers are wages employees.

Section Responsibilities

In addition to the primary purpose of preparing park management plans, the Section is now being involved in other areas of Service activity. It is estimated that 35 per cent of staff time is being expended on park acquisition work. This has come about by the adoption of a broader definition of management planning, the particular expertise of officers with the section and a recognition of the fact that new acquisitions will have far reaching effects on the existing components of the park system and Service management activities.

The Section has also had involvements with more general land use studies such as that carried out by the Interdepartmental Committee considering the future management of Pumicestone Passage.

The scope of any management planning system is always under scrutiny from many quarters. The previous annual report indicated that there was a need to prepare park management plans on a regional basis so that the relative function of each component of the park system can be readily appreciated and identified. This matter was further highlighted during the year and the point made that it may be desirable to prepare regional plans which would provide a framework for the management of all areas of Service responsibility.

Such plans would go beyond the management of particular reserves and would include the broader aspects of nature conservation on non-reserve land. Such planning would provide for an integrated approach to nature conservation by all sections of the Service. An important aspect to be considered are plans drawn up for wildlife and nature conservation for areas outside the reserve system.

Planning Procedures

The work of the section has been kept under constant review in an endeavour to determine the best means for co-ordinating the various inputs required for the preparation of a management plan. Two areas of concentration are necessary:—

- There is a need for the co-ordination of resource data input necessary for the preparation of a management plan and for the formulation and reviewing of management strategies. Input is often necessary from a number of different sources from within the Service and elsewhere.
- Public involvement at all stages of plan preparation can assist in providing resource data, making management suggestions, providing the planner with an understanding of the pressures of the resource and, if correctly handled, assist the Service in promoting a plan's acceptability to the public.

With these problems in mind, management planning is being co-ordinated by the section. Planning committees made up of representatives from each section of the Service are being established to ensure maximum involvement in planning by all sections of the Service. This will ensure that all sections are consulted throughout the planning process and that maximum opportunity exists for the requirements of each section to be considered from the outset of management planning. It will also provide a valuable avenue to facilitate liaison between the management planning body and the Service's various sections. The response from such an approach has been extremely pleasing. A process of public consultation will be implemented at the very beginning of the planning process. Submissions will be invited and meetings with various key individuals and groups organized.

While this will involve section officers in considerable amounts of additional work, it is anticipated that the effort will produce better plans which will be much more acceptable to the public while conforming to Service objectives. The public

consultation is seen to be a two-way process whereby the Service gains valuable insight and advice from the public while having an opportunity to promote a greater understanding of the Service's responsibilities.

Significant Problems

A number of problems may be identified as affecting the operation of the Section in producing well thought out plans of management. These have arisen as a result of the expansion of the Service estate, particularly in remote areas and the pending involvement in the management of the Saint Helena Island historic site.

The acquisition of large areas in the arid and tropical environments, such as Cape York, present unique problems of isolation and seasonal usage.

The Service is obliged to demonstrate that it can adequately provide these areas of international scenic and scientific significance with an international standard of management. These large areas represent a type of park which is new to the State and present management problems not previously encountered.

These problems lie in their size, their use which will be of a seasonal nature and their isolation in terms of administration and servicing. There are considerable visitor pressures on these areas at present and these will increase with time. These areas will play an important role in the State's tourist industry, and it is imperative that the Service should be in a position to take the initiative in developing these areas through management planning.

The need to prepare management plans for the older established parks, particularly in the State's more populated zones, is equally pressing. These areas, by virtue of their proximity to population centres invariably have to meet recreational demands which are not necessarily compatible with Service objectives. A major problem in





planning to meet these demands is the lack of information concerning the demands for outdoor recreation activity which exist within the general community.

The community recreation phenomena is poorly understood. Other agencies concerned with the provision of recreation facilities are in a similar unfortunate position. It should be remembered that the greatest single item of Service expenditure is associated with the provision of public recreation facilities. There is a need for basic research to determine factors which motivate people in their various pursuits of recreational activity. The Service shares this need for a greater understanding of the recreating public with a number of other Government Departments who are also involved in providing outdoor recreation opportunities. It would seem that there should be considerable ground for a joint departmental approach to obtaining the basic information which is needed for this important social service.

Pigweed—Cooloola



Projects

Cooloola National Park

This project was initiated during 1977–78 and over the past year the draft plan has been reviewed within the Service and subsequently by both Widgee and Noosa Shire Councils. The proposed management plan for Cooloola National Park has now been prepared for Ministerial consideration.

It is proposed that the Cooloola Management Plan be released for public review and comment before its final acceptance as Government policy. The Cooloola Management Plan was the first major management planning task undertaken by the Section. Consequently, the preparation of this plan has been the main vehicle through which the Section has developed its approach to management planning, refining established planning techniques to suit the Queensland situation.

Girraween-Sundown National Parks

Girraween is one of Queensland's best known and most popular national parks, and, like so many of the State's national parks, is subject to increasing pressure for visitor use. Sundown lies to the west of Girraween and comprises a very interesting and conservation worthy traprock landscape. Management planning for these two parks and also for Horan's Gorge Environmental Park (293 ha near Girraween) is being carried out concurrently.

The task is being carried out by the Management Planning Section with the assistance of an advisory committee set up within the Service. The Service has sought public submissions on the future management of these parks, and Service representatives have addressed meetings of interest groups. A continuing liaison has been established with the Stanthorpe Shire Council and New South Wales National Parks and Wildlife Service.

Pumicestone Passage and Bribie Island

The biological resources available for conservation and specifically the significance of remaining vegetation types were evaluated and the recreation and historical values reported on. A conservation planning strategy involving a Pumicestone Passage National Park, a Bribie Island Environmental Park, an open-space zoning for Local Authority action, and a historic site for listing by the National Trust were proposed. Management planning guidelines for the proposed parks were also formulated.

Information was drawn from this study for the Service's submission to the Pumicestone Passage Planning Committee.

Central Queensland Coast

Baffle Creek north of Bundaberg to Shoalwater Bay north of Rockhampton. This part of Queensland coast contains high nature conservation values, but a paucity of national parks. A large number of park proposals exist along this coastline, but many of these are in direct conflict with sand mining interests.

A study to rationalize nature conservation in relation to mining for the central Queensland coastal region as a whole, was initiated by the Service. This study assessed those areas of highest nature conservation value whilst being cognizant of sand mining interests and other land uses.

A number of trade-offs and compromises between nature conservation proposals and mining interests were recommended by the Service to the mining industry and the Department of Mines. It is thought that this initiative by the Service will alleviate the continuing conflict which has plagued both conservation and mining in southern Queensland and New South Wales over the years. The progress achieved in these studies has demonstrated the need for continued effort in conservation planning on a regional basis.

Central Highlands

Investigations in the sandstone area of the Central Highlands have highlighted the importance of this region for nature conservation, scenic preservation, recreation and cultural and historical values.

Eight national parks already exist in the region including the renowned Carnarvon National Park. During the year, a new park, N.P. 14 Marengo, was gazetted and Mount Moffat Holding was purchased by the Service as an important addition to Carnarvon.

Earlier investigations in the Robinson Gorge areas indicated the need for a regional review of management and acquisition in the sandstone belt. Accordingly, during the past year a study has been undertaken aimed at defining the areas of Service interest within the region and formulating management policies and guidelines for the development of the regional park system. This study is continuing.

Scenic Rim

The Management Planning Section recently commenced an investigation of all parks including Lamington, Springbrook, Mount Barney and Cunningham's Gap in and near the Scenic Rim. The Scenic Rim proposal envisages the reservation of lands for bushwalking along the crest of the Main and MacPherson Ranges. Bushwalkers and conservationists regard the Scenic Rim as the most significant remaining wilderness area in south-east Queensland.

Both the State Forestry Department and New South Wales National Park and Wildlife Service have indicated willingness to consult and co-operate with the Service in long-term planning for this region.

Grants Commission

A detailed submission was made to the Commonwealth Grants Commission based upon the Commission's new formulae which included such factors as eligible population, scale, dispersion and physical and economic environment in its assessment of the State's need for national parks and wildlife services.

Though the Commission's findings for 1976-77 assessed national park needs only under the category of 'Recreation', the Commission conceded at the December hearings, that a re-arrangement of classification of expenditures was desirable so that conservation and recreation components of national park expenditure could be assessed separately.

As nature conservation is the major function underlying the national park system, a methodology was developed to quantify the extra conservation task faced in Queensland over that in the standard States. As an example of the enormous conservation effort required in Queensland, it is to be appreciated that the State contains 80 per cent of Australia's bird species, 66 per cent of Australia's mammals and 57 per cent of Australia's reptiles, as well as over 10 000 species of vascular plants. Based on a CSIRO investigation of 'Australian Biophysical Regions' which identified the distinctive ecological regions throughout Australia, it was found that Queensland possessed 105 such regions compared with 63 and 24 for New South Wales and Victoria, respectively.

To conserve this ecological diversity contained in the State, it was submitted that when also taken into account other disabilities for Queensland considered in the previous year's submission, that the 'total assessed need' for national parks and for wildlife was \$3,748,080.

Green Island

In May, 1978, State Cabinet established the Green Island Management Committee to prepare a comprehensive management plan for Green Island and its reef and to advise those authorities involved in the island's day-to-day administration.

The National Parks and Wildlife Service, Queensland Fisheries Service, Department of Harbours and Marine, Lands, Tourism and Works, Cairns City Council and the private sector of the tourist industry in Cairns are represented on the Committee. The Director is Committee Chairman, and the Committee's activities are co-ordinated by the National Parks and Wildlife Service. Being responsible for this major multi-disciplinary and inter-governmental exercise has given the Service a further insight into the benefits of consulting and co-operating with other agencies.

It also highlighted the Service's major role in land use planning exercises in Queensland. The Management Committee met six times during the year to discuss matters relating to Green Island and its reef and to draw up a draft management plan. The committee assembled available data about the resources, use and development of Green Island and its reef.

Visitor surveys were undertaken to determine use patterns and submissions from the public solicited.

The Green Island Management Plan should rationalize and minimise the management problems facing the island's administrators and provide a framework for the future management and development of Green Island and its reef.

The experience gained from this exercise should greatly assist the Service in managing its other Great Barrier Reef reserves.

Statutory Planning

The Section has sought to comment upon draft town-planning schemes in order to enhance co-operation between Service park management planning and Local Government statutory planning. A joint submission was prepared by this Section and Technical Administration Section dealing with zoning proposals for Stanthorpe Shire. It is envisaged that comments will be prepared on each draft town-planning scheme as the opportunity arises.

Aboriginal Relics

With the assistance of a grant of \$20,200 from the Australian Institute of Aboriginal Studies, it has been possible to implement a 12-month project aimed at providing a broad understanding of the extent, values and conservational status of aboriginal relic sites present within areas of national park interest in the Central Highlands of the State. The results of this work will be used to assist the Service in formulating management strategies for the areas under its control and as an adjunct to its land acquisition programme.

The need for long-term management strategies for the protection of Aboriginal sites within the national park estate has been highlighted by the increasing public visitation to Carnarvon National Park and other national parks of the region where sites have been reported to have deteriorated through the effects of deliberate and unintentional vandalism and through natural rock weathering processes.



Conferences and Symposiums

The Section was represented at the Royal Australian Institute of Park and Recreation (R.A.I.P.R.) National Conference at Burnie, Tasmania, in October, 1978, and the Australian Council of National Trusts Landscape Conference at Adelaide in May, 1978.

The theme of the R.A.I.P.R. Conference was 'Land for Leisure'. Several papers were relevant to national park administration and attendance at this conference enabled an exchange of information and ideas with members of other national park services in Australia and the United States.

The aim of the Landscape Conference was to develop a uniform system of procedures for evaluating landscape to be used by National Trusts and other interested organizations throughout Australia. The Conference highlighted the need for continuing research to develop parametric methods for evaluating landscape quality.

Publications

Sattler, P. S. (1979)—Conservation Planning Strategy for Pumicestone Passage and Bribie Island. In 'Northern Moreton Bay Symposium' (R. Soc. Qd: Brisbane).

Elsol, J. A., and Sattler, P. S. (1979)—Moreton Region Vegetation Map Series: Caloundra. Botany Brch, Qd Dep. Prim. Inds, Brisbane.

Environmental Parks

Throughout the year, an extra eight environmental parks were gazetted, bringing the total number to 76, covering a total area of 34 731 ha. As many of these had been declared or assessed prior to the Service assuming control, efforts were made to carry out as many inspections as possible. A total of 70 gazetted environmental parks have now been inspected, together with 45 areas inspected for assessment as proposed parks during the year.

A particularly important gazettal was that of Mount Zamia near Springsure, and funds were immediately made available for the upgrading of the tourist road through the park. This work was carried out under contract by the Bauhinia Shire Council who are trustees of the park. Planning for the road and associated picnic facilities has been a joint exercise by the Shire, a local tourist promotion committee, and the Environmental Parks Officer.

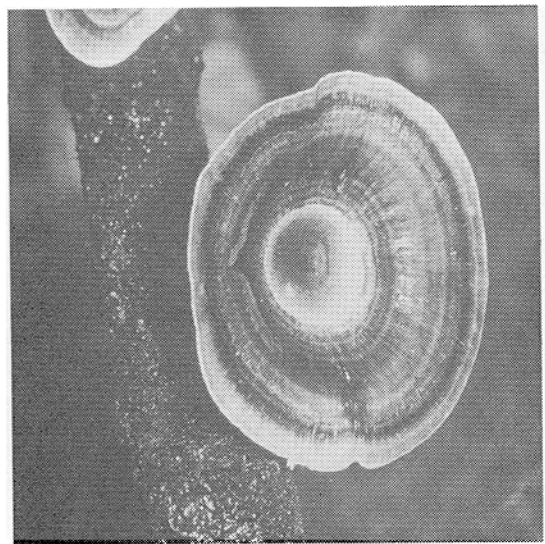
At North Tamborine Environmental Park, a proposed Children's Nature Activity Area has been planned jointly with Technical Services Section, Beaudesert Shire Council, local conservation groups and staff of the Queensland Agricultural College at Lawes. This is to be constructed later in 1979 by Wildlife Management students from Queensland Agricultural College. It will be the first interpretive system on a park designed specifically for children and will form part of the Service contribution to International Year of the Child.

An overseer has been appointed to manage the proposed environmental park at Lake Broadwater via Dalby, where the regional significance of the resource for waterbird conservation is complicated by its regional importance as a recreational resource for waterskiing. The Service is currently engaged in a co-operative management planning exercise for recreational use of the park, together with the Wambo Shire Council, Lake Broadwater Association, and other local groups and landholders. Interpretive and conservation management expertise will be provided by the Service to ensure that park users are provided with an experience of nature as well as recreational facilities.

Planning and design work by consultant architects, in close co-operation with the Queensland Museum, continued on a proposed shelter over the isolated dinosaur trackway at Lark Quarry south-west of Winton. A temporary cover of straw and 400 m² of plastic was placed over the site in November, 1978, to protect the fragile rock surface until the structure is completed in late 1979.

During the year, a brochure on Environmental Parks in Queensland was produced. This summarized information on each park and outlined the role and management of these reserves. The brochure will be updated and reprinted in the coming year.

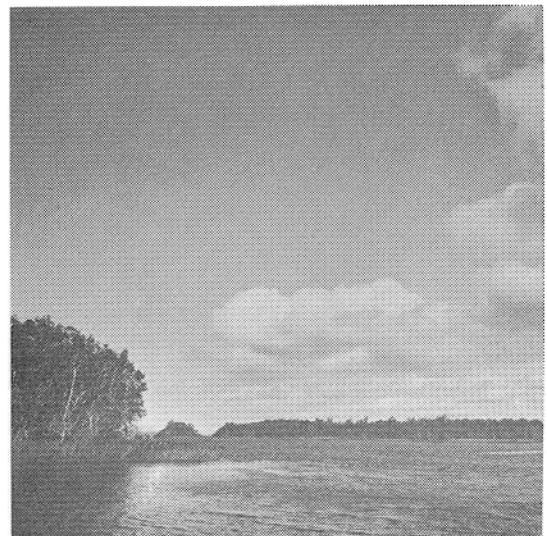
Major items of expenditure from the special environmental park allocation of \$150,000 included \$52,500 for the acquisition of environmental parks,



\$24,000 for the roadworks at Mount Zamia and \$17,500 for a new Service boat, the 'Cormorant', to help manage parks in Moreton Bay. A second smaller boat, the 'Egret' was also purchased for inspections and management of areas along creeks and for use on Lake Broadwater.

As evidenced by projects such as the above, the direction of environmental parks policy is gradually being formulated. Areas of local and regional significance for conservation and nature-based recreation are selected for gazettal, and this is followed by management planning with local involvement encouraged. Any recreational development approved is then constructed by the trustees to Service standards.

Lake Cootharaba—Cooloola National Park



Research and Planning

The Research and Planning Branch is responsible for scientific research and strategic planning in the field of nature conservation throughout Queensland. It is responsible for advising on matters associated with biological conservation on parks and with assessing the impact on the environment of major developments in Queensland.

During the year, staff centred at Brisbane, Hermitage, Rockhampton, Townsville and Cairns undertook research work at widespread and often remote areas of the State. The essentially long-term studies of populations and population behaviour of particular groups of species continue to expand our basic knowledge of Queensland flora, fauna and landforms. Apart from purely research activities, staff maintained their involvement with numerous technical and advisory committees of organizations involved in nature conservation. Staff also promoted Service concepts and endeavours through invited talks and lectures at various levels and through active participation in various societies. In addition, senior staff were committed to wider Service responsibilities in the planning, development and administration of Regional Centres.

The nature of the Branch's work has attracted interest from outside bodies and individuals, and a total of four projects are funded from outside resources. During the year, the World Wildlife Fund agreed to provide that body's first grant of \$46,300 to allow the commencement of research into Raine Island which is 100 kilometres east-north-east of Cape Grenville. It is recognized as the most outstanding sea bird rookery on the Great Barrier Reef. It is also a major nesting site for the green turtle which is on the international (Red Data Book) list of endangered species.

The Meakers Charities Trust has generously indicated its willingness to assist this programme with the establishment of a permanent endowment fund of \$350,000 (sterling) of which \$50,000

Beach stone curlew



(sterling) is tentatively set aside for the restoration of the sandstone block beacon built by convict labour in 1844.

Grants from the Australian National Parks and Wildlife Service have assisted with a turtle research programme and a fauna survey of the McIlwraith Range on Cape York Peninsula. The Australian Orchid Foundation assisted with funding for exploratory trips to locate scarce species of orchids on Cape York Peninsula.

Branch staff collaborated with the Australian Broadcasting Commission Natural History Unit to produce a widely-acclaimed series of six films with titles 'Life in the dark forest', 'The hidden coast', 'The bush', 'Land of the Bulloo', 'The journey to Mon Repos Beach' and 'Tracks to Raine Island'.

A book titled 'Exploration North', edited by the Branch Director, Dr H. J. Lavery, was published by Richmond Hill Press as a companion to the film series. The book contains chapters contributed by five branch officers on subjects associated with the book's subtitle, 'Australia's wildlife from desert to reef'.

Assistance with technical advice to outside bodies and other Government Departments has resulted in the preparation of 19 external and 17 internal reports and the assessment of many environmental impact statements. The staff has also published 26 scientific papers.



The Branch Director continues to serve on the Currumbin Bird Sanctuary Trust, and Mr J. S. McEvoy represents the Service on the Vermin Control Committee of the Stock Routes and Rural Lands Protection Board. Dr P. S. Lavarack was elected chairman of the Research Committee of the Australian Orchid Foundation for a two-year period. Dr T. H. Kirkpatrick continued to represent the Service on the CONCOM Working Group on Endangered Fauna.

The introduction of a Nature Reference Sites programme along the lines of the Victorian programme (*Reference Areas Act 1978*) has aroused national interest. The first site 'Mariala' has been acquired at Ambathala, and basic facilities established on the site by branch staff.

The Branch continues a programme of monitoring the kangaroo-harvesting industry to ensure that over-exploitation does not occur. The dramatic rise in meat prices led to an increase in demand for kangaroo meat and skins and an upsurge in harvesting levels followed.

Collections of heads from shooters revealed an obvious underharvest of kangaroos throughout the State. The sex ratio of the take was an overwhelming 82/18 in favour of male grey kangaroos, 76/24 for red kangaroos, and 96/4 for wallaroos. As the sex ratio in normal populations is 50/50, monitoring indicates that large numbers of males are readily available and shooters are ignoring females.

Four Sections within the Branch undertake investigations of the various facets of nature conservation, and details of their activities are listed below.

Field Studies

The section undertakes investigations of conservation problems, particularly with regard to species demanding extra attention if their survival in Queensland is to be assured.

Native Rodents

A study of rodent movements concentrating on the allied rat (*Rattus assimilis* (Gould)) was well in progress prior to the resignation of Mrs E. J. Gleeson late in the year.

This work centred on a study area in the Conondale Ranges and used radio telemetric methods to locate individual animals.

Population studies of the water rat (*Hydromys chrysogaster* (Geoffroy)) on the Darling Downs progressed well. The study area has been expanded to include a relatively undisturbed site at Rosenthal Creek where marking of a wild population was commenced. Routine collection of reproductive material for histological examination also began at the Condamine River study area.

Rainforest—Cooloola



Kangaroos and Wallabies

Continuing studies of kangaroo age, reproduction and population dynamics were centred at Hermitage and proceeded as their long-term nature dictates. Some captive animals are now in their 20th year.

Work on macropod tooth development proceeded and included publication of a paper dealing with the grey kangaroo. Reconstruction models of various developmental stages of teeth continued as a routine task.

At Townsville, bridled nail-tailed wallabies (*Onychogalea frenata* (Gould)) were bred in captivity for the first time. Work on the reproduction and ageing of pouch young proceeded at various stages on this species, the black-striped (*Macropus dorsalis* (Gray)), the spectacled hare (*Lagorchestes conspicillatus* (Gould)), and the whiptail (*Macropus parryi* (Bennett)) wallabies. Colonies of the purple-necked rock-wallaby (*Petrogale penicillata purpureicollis* (Le Souef)), Lumholtz' tree-kangaroo (*Hypsiprymnodon moschatus* (Ramsay)) were well established but not yet breeding. Joint work with Professor G. B. Sharman of Macquarie University on the taxonomic validity of the species *Bettongia tropica* Wakefield now indicates that the chromosomes of this rat-kangaroo are similar to those of the brush-tailed bettong (*Bettongia penicillata ogilbyi* (Waterhouse)). In addition, four papers were published dealing with husbandry, reproduction and status of several wallaby species.

Possums

Additional records on the distribution of rain forest mammals between Townsville and Cooktown were obtained as time permitted. This year, field work was concerned mainly with the Tully River valley and areas to the north of Townsville.

Good progress was made on feeding studies of the rainforest possums. Results so far indicate that there is very little overlap in the recorded diet of the four large herbivorous species. Meanwhile, work on the husbandry of the two races of the Herbert River ringtail (*Pseudocheirus herbertensis herbertensis* (Collett)) and (*Pseudocheirus herbertensis cinereus* (Tate)) continued at Townsville as a prelude to breeding in captivity. Preliminary results of chromosome work performed by workers at Macquarie University on behalf of the Service on these two races suggest that they may be separate species.

Waterbirds

Routine aerial survey was introduced as the basic survey technique for obtaining data on brolga (*Gus rubicundus* (Perry)) population size, dispersion and habitat utilization at coastal areas between Tully and Cape Upstart. Aerial surveys undertaken during the nesting season clearly demonstrated the difference in breeding dispersion of brolgas and magpie geese (*Anseranas semi-palmata* (Latham)) at several major breeding grounds. Subsequent surveys in the post-breeding period have provided extensive data on the population build-up at coastal areas and the response of brolgas and other waterbirds to gradual seasonal

changes in their habitat. Aerial photographic transects across entire swamps were established at Ingham, Townsville and Cromarty to measure seasonal changes in habitat components. Routine mapping of these transects continued on a monthly basis.

Comparative studies of the moult and growth of magpie geese and brolgas progress well, with completion of measurements of the magpie geese. The geese have been shown to undergo a continuous, protracted, symmetrical pattern of moult which does not affect flight. However, as birds become older, there is a gradual shift away from the basic moult sequence, and the timing of an individual's moult becomes increasingly out of the phase with other individuals of the same age. The pattern of moult in brolgas has yet to be fully determined but appears quite different from that of magpie geese.

Field work in the life history of the bulkuru sedge (*Eleocharis dulcis* (Burm.f. Trin.)), a major food of brolgas and magpie geese, was completed. The timing of shoot production, flowering, fruiting and tuber development has now been established. Core samples showed that feeding by both species had removed the majority of tubers from the swamp floor by the end of the dry season.

The aerial survey unit underwent considerable refinement of methods and equipment. As a result, the unit can now be considered as having progressed from an experimental to an operational capacity.

Crocodiles

Growth and movement studies of the freshwater crocodile (*Crocodylus johnstoni* (Kreft)) were concentrated along a 30 km stretch of the Lynd River at Mount Surprise. One hundred and fifty-three crocodiles (or about 60 per cent of the population at this site) have now been individually marked. In addition, 56 new-born crocodiles were caught and marked during the 1979 breeding season. Farther afield in the Gulf of Carpentaria, studies at five separate river systems indicate that net fishing has depleted crocodile numbers.

Sea turtles

The 1978-1979 turtle nesting season was the 11th season of continuous monitoring at Mon Repos and the 5th at Heron Island. In addition, six other rookeries were monitored. During the year, a further 2 400 turtles of five species were tagged and some 400 previously tagged turtles recaptured. Added to this, approximately 38 500 hatchling sea turtles were marked and released at Mon Repos and Heron Island. As in previous years, the participation of student and teacher volunteers was of major benefit to the turtle programme. A report summarizing results of the last three years was prepared for the Australian National Parks and Wildlife Service that funded much of the work.

Land Use Planning Section

The Section is concerned with surveying the natural resources of Queensland, with defining areas suitable for reserves or national parks, and with evaluating areas recommended by outside bodies for national park purposes. It is anticipated that an atlas of Queensland's natural resources will ultimately be available for use by both the Service and for interested organizations and institutions. The Section's major undertaking during 1979-1980 was the Wide Bay/Burnett regional resources study. The study is based on one of the natural regions of the State, each of which is characterized by attributes of major scientific or aesthetic value. The initial reports and maps for the study of the region have been submitted for collation.

The Wide Bay-Burnett Regional study identified 16 separate mainland areas which are the most important sites for flora conservation in that region. They were selected using criteria of naturalness, uniqueness, diversity of flora and size. Although some are existing national parks, each selected area was given a priority rating for acquisition. Steps are being taken to assess the possibilities of acquisition of these areas for national parks wherever this is reasonably possible. A comparable survey of the region's flora is to be undertaken in the near future, and a similar system of selecting priority areas will be followed, although it may be anticipated that the majority of the fauna priority areas will coincide with the areas selected on a floristic basis.

The Section also devoted a large portion of its time to examining the great number of areas proposed as national parks. In addition, at the request of the Department of Forestry, the vegetation patterns of Fraser Island were mapped.

A detailed evaluation was undertaken and a report submitted on the natural resources of the coastal dune areas extending from Curtis Island to Baffle Creek.

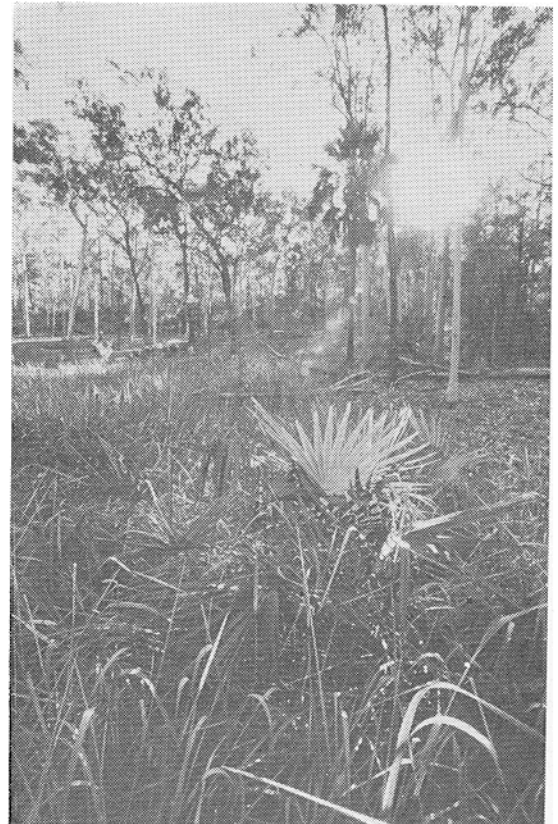
During the year, it was found necessary to divide the team engaged on the regional resources surveys to allow work to commence on both a Fitzroy Region Resources Study and a resources study of the Cape York Peninsula area. Emphasis in these studies will be placed on landform and botanical resources until such time as zoologists may be available to undertake surveys of the fauna.

Management Research Section

Throughout the year, the Management Research Section has continued a series of applied studies aimed at supplying sound advice to land managers on problems associated with the conservation and management of disturbed environments. Preliminary results available from several projects are most encouraging and indicate that staff of the Section have taken initiatives in many fields that will prove to be of great benefit to the Service.

The large acquisition programme of the past year has presented new challenges for staff, as the majority of newly declared parks were formerly grazing properties and were subject to management regimens which are likely to alter drastically while under the Service's control. A severe shortage of staff and equipment has limited endeavours in this area, but a start has been made on developing methodology for defining existing conditions and relevant parameters for predicting likely changes. The results of these investigations would be available to management and to non-Service landholders and should contribute to better management of the environment.

Open forest—Carnarvon National Park



Agriculture and Conservation

The impact of agricultural practices on quail populations in the Warwick District is being studied. Remarkable progress has been made in developing a technique for capturing and banding quail. Landholder interest and co-operation has been good and large numbers of quail have been banded. The project is being expanded to allow the collection of data on food, as this may prove to be the key to apparent cyclic fluctuations in quail numbers at particular localities.

Grazing and Conservation

A series of random plots has been established within enclosures on the Service land at Morgan Park near Warwick. Grazing of domestic stock is being permitted on the site and replicate enclosures have been established which (a) are fully grazed, (b) exclude stock but not fauna, (c) exclude both stock and fauna. Seasonal differences in plant species present and in the condition of the plots are being recorded and will be analysed to determine the impact of grazing on typical Darling Downs grasslands.

Forestry Conservation

1. A study of the survival of dry vine-forest fauna in scrub breaks using the green catbird *Ailuroedus crassirostris* (Paykull) as an indicator species is well under way. Information derived from 53 banded individuals reveals a strong affinity for a particular site with birds holding permanent territories, although excursions outside territories to take advantage of fruiting trees are common.

It appears that pairs also hold territories within scrub breaks but that overall territory size is a dominating factor and in the narrow scrub breaks the territory of a pair is extended in length. No evidence of general movements along strips has been encountered.

2. The survival of avian species in habitat isolates is also being studied. The avian fauna of a patch of rainforest, reduced to a small island isolated from other rainforests by clearing, is being studied. A system of mist netting and colour banding of birds on a fixed grid is well under-way. A number of species have been colour banded and nesting and territorial observations recorded. Future emphasis will be placed on one or two species which appear to be resident, and on establishing a similar study site in a second nearby scrub isolate to detect if migration occurs. The results of this study are expected to indicate minimum areas that have to be retained to ensure the continued survival of resident populations.



Effect of Rainforest Fruiting Phenology on Fruit Pigeon Abundance in the Conondale Region

The relative importance of the various rainforest types to fruit-eating pigeons is being assessed. Several study sites, including the Griffith Logging Area site of the *A. crassirostris* study, have been selected, and collections of fruiting tree samples for identification and observations of utilization of food resource by various species have commenced.

Exotic Animal Disturbance

The advent of a deer-farming industry and the availability of information on both red deer and fallow deer as a result of this project has highlighted the contribution of management research to Service management. Results of a deer-sampling programme have provided data on reproductive rates, sex ratios and longevity in red deer populations, and this information has had direct relevance to the regulation of the deer-farming industry.

Establishment of Environmental Management Practices for National Parks

An assessment of the existing vegetation patterns coupled with an attempt to relate these to the recent management practices of the former landholder and an establishment of vegetation/soil alliances is under way for a recently acquired property in Western Queensland. It is anticipated that the study will enable guidelines to be prepared for the future management of the property.

Nature Reference Sites Programme

A portion of the grazing property Ambathala was acquired during the year, and staff made two extended zoological and botanical survey trips to the site. A suitable demountable building for Ambathala was purchased and will be established on site during late 1979.

Data Bank Section

This Section functions to maintain and co-ordinate all field-data-collecting exercises. It has evolved from the increasing need to store material responsibly and to retrieve data effectively. Close liaison is maintained with the Queensland Museum and the Queensland Herbarium so that reliable identification may be maintained.

The small reference collections maintained by the Section have assisted with the identification of specimens taken during surveys.

Wombats

Blood samples taken from hairy-nosed wombats from a small colony in central Queensland have confirmed that they represent a separate species from the South Australian hairy-nosed wombats, and special effort will have to be devoted to the conservation of the Queensland colony.

Rodent Taxonomy

A major contribution to the classification of the native scale-tailed rats (*Melomys* species) was completed with the publication of research findings in a British journal. A further detailed paper on the group is to be prepared.

Orchids

Several excursions to the Cape York Peninsula area were undertaken in efforts to resolve taxonomic problems associated with the orchids of the region and to locate new species.

Services

Specimens collected in the McIlwraith Range, Dalrymple, Taroom and Mariala surveys have been identified. A list of Queensland birds has been prepared which employs vernacular names in accord with the latest Royal Australasian Ornithologists Union list. The checklist of Queensland bats has been updated with additions to the fauna and name changes derived from recent revisionary studies.

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The Premier Hon. J. Bjelke-Petersen with Research and Planning Staff on Iron Range National Park



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Appendix

Service Growth Since Establishment

Staffing	1975-76	1976-77	1977-78	1978-79
Salaried	87	95	96	119
Wages	44	102	122	138
Funding	\$	\$	\$	\$
Revenue	1,676,838	2,383,553	3,056,310	3,602,213
Loan	477,982	999,715	1,399,998	1,998,507
Trust	121,178	528,153	404,464	290,282
Receipts	206,918	332,271	302,348	528,819

Receipts

	\$	\$
Fauna Permit (kangaroo & duck)	78 293	
Sale of tags (kangaroo)	358 450	
Fauna Royalty	14 225	
Permit to Remove or Import	9 511	
Permit to Exhibit Live Fauna	1 800	
Permit to Keep Live Fauna	6 701	
Fauna Dealers Licence Class A	24 955	
Fauna Dealers Licence Class B and C	13 081	
Registration of aviary	1 692	
Publications	1 755	
Miscellaneous—Sale of maps, grazing permits, permits (Scientific), fines, rent, etc.	18 356	528 819

Scale of Fees for Permits and Licences as at 30-6-79

	\$
Open season fauna permit (personal use)	10.00
Open season fauna permit (taking for sale)	30.00
Kangaroo and Wallaby tags (each)	0.30
Fauna Dealer's Licence	30.00
Registration of each fauna dealer premises—Class A	160.00
Registration of each fauna dealer premises—Class B	160.00
Registration of an aviary	10.00
Permit to keep fauna under Part IX—not for exhibition	5.00
Permit to keep fauna under Part IX—for exhibition by a person other than the Brisbane City Council or a Local Authority	300.00
Permit to take fauna under Part IX	10.00
Permit to remove fauna from any place in Queensland to another place or to move fauna from a place outside Queensland to any place in Queensland—	
Birds (including aviary birds interstate) per bird (minimum \$1.00)	0.20
Other fauna	4.00

Expenditure

Revenue Fund

	\$	\$
Salaries		1 476 537
Contingencies		
● Wages, travelling expenses, maintenance and incidentals	1 900 288	
● Cash Equivalent of Long Service Leave	29 388	
Environmental parks and reserves	150 000	
Maintenance and incidentals—Kinaba Island Wildlife Refuge	46 000	2 125 676
		<u>\$3 602 213</u>

Loan Fund

Capital works and development on national parks	854 366	
Capital works and development on Regional Centres	329 141	
Acquisition of national parks	<u>815 000</u>	
		<u>\$1 998 507</u>

Trust Funds

Commonwealth Grants for national parks and Wildlife Services Fund— Acquisition, research, surveys, etc.	218 488
National Parks and Wildlife Service Grants Fund—Research, development, etc.	71 794
	<u>\$290 282</u>

Development and Maintenance Works Programme 1978-79

Overall Distribution of Expenditure was as follows:

Management Unit	Maintenance	Development
Management and Operations Branch (including Wildlife Section)	\$	\$
Administrative and operating costs	348,270	148,678
Brisbane Region		
Lamington	80,896	56,264
Springbrook	29,861	10,910
Tamborine	36,156	11,410
Natural Bridge	9,169	3,881
Burleigh Heads	8,755	11,332
Mount Glorious	26,210	7,453
Mount French	1,517	—
Cunningham's Gap	26,985	9,350
Queen Mary Falls	2,257	124
Girraween	55,870	12,557
Regional Costs—not allocated to individual parks	329	3,275
Mount Barney Management Area	128	—
Sundown Management Area	159	—
Moreton Bay Management Area	—	124
Total	\$278,292	\$126,680
Gympie Region		
Bunya Mountains	47,483	12,198
Crow's Nest and The Palms	10,081	16,214
Ravensbourne	12,373	2,979
Mapleton	6,614	5,068
Kondalilla	15,908	4,995
Noosa Heads	30,908	19,982
Cooloola	16,608	101,442
Fraser Island	325	25
Woodgate	8,590	4,921
Robinson Gorge	806	1,555
Regional Costs—not allocated to individual parks	4,137	8,026
Woody Island Management Area	24	32
Isla Gorge Management Area	16	—
Total	\$153,873	\$177,437

Rockhampton Region

Whitsunday Management Area (Island Park Gloucester to Pentecost Island)	226	711
Conway	40,199	25,792
Cumberland/Newry Management Area (Island Parks Lindeman, Brampton and Newry Group)	1,097	2,387
Seaforth	32,984	8,577
Eungella	22,490	30,053
Cape Palmerston	161	—
Yeppoon and Islands	19,211	15,588
Heron Island (Heron Island, Capricorn and Bunker Groups)	17	11
Carnarvon	46,355	37,647
Fitzroy Caves	271	1,499
Regional Cost—not allocated to individual parks	4,782	7,138
Eurimbula	3,480	1,486
Jim Crow Management Area	—	38
Total	\$171,273	\$130,927

Cairns Region

Chillagoe	33,586	40,129
Eacham	18,630	61,593
Barron	3,160	6,731
Green Island	1,268	—
Mount Spec	13,632	13,217
Palmerston	18,123	28,112
Jourama	7,234	4,450
Ravenshoe	584	217
Wallaman Falls	6,472	3,921
Magnetic Island	16,138	8,316
Cardwell	24,935	39,904
Lizard Island	60	1,364
Regional Cost—not allocated to individual parks	13,809	42,070
Mount Elliot	20,261	17,320
Lakefield	—	3,300
Total	\$177,892	\$270,644

Management and Operations Branch

1,129,600	854,366	Total
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Management Unit	Maintenance	Development
Regional Centres	\$	\$
Brisbane		
• Head Office—Development of photographic services (Technical Services Branch)		113,440
• Research Programme (Research and Planning Branch)		62,128
• Administration development		8,499
Moggill —Minor works		10,449
Pallarenda (Townsville) Equipment, landscaping and development		127,643
Hermitage (Warwick) Equipment and minor works		5,329
Rockhampton (Regional development)		1,560
Cairns (Regional development)		93
		<u>329,141</u>
General Expenditure		
Administration		
Administrative and operating costs	509,685	—
Cash equivalent of Long Service Leave	29,388	—
Technical Services		
Administrative and operating costs	95,075	—
Research and Planning		
Administrative and operating costs	165,928	—
Acquisition of national parks		
Cost of land	—	804,577
Search and legal costs	—	10,423
		<u>815,000</u>
Total	\$1,929,676	\$1,998,507

Trust Fund Expenditure for 1978-79

Research and Planning Branch

Orchid Survey of North Queensland	812
Queensland Sea Turtle Project	24,144
Red Kangaroo Survey—Arid Zone Investigations	7,651
McIlwraith Range Survey	10,260
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	42,867

Management and Operations Branch

Fraser Island Grant	172,655
Aboriginal Sites on national parks	3,778
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	176,433

Administration Branch

General Trust Fund	70,982
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	70,982

Total Trust Fund	290,282
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Ghost crab—Coolooloia

