

**SECOND ANNUAL REPORT
1976-77**



**NATIONAL PARKS
AND WILDLIFE
SERVICE**

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**NATIONAL PARKS
AND WILDLIFE
SERVICE**

138 Albert Street
Brisbane
Australia
Telephone (07) 221 6111

12 January, 1978.

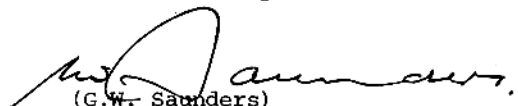
The Honourable T.G. Newbery, M.L.A.,
Minister for Culture, National Parks
and Recreation,
BRISBANE

Sir,

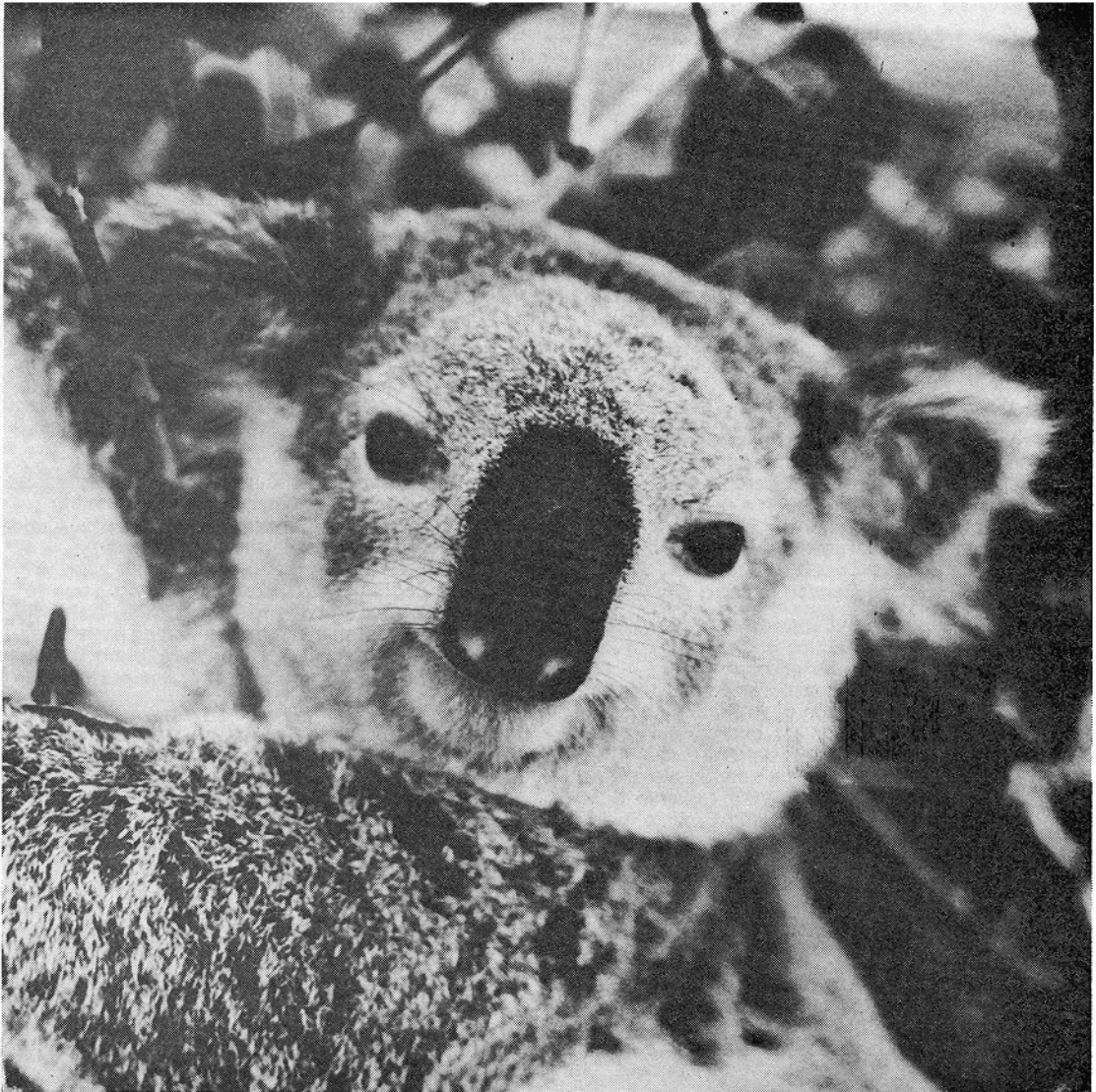
I have the honour to submit to you for
presentation to the Parliament the Second Annual
Report of the National Parks and Wildlife Service.

This Report covers the operations of the
Service during the year ended 30 June, 1977.

Yours faithfully,


(G.W. Saunders)
DIRECTOR

Introduction



Progress of the Service

The following pages detail the progress and achievements of the National Parks and Wildlife Service of Queensland in the twelve months to the end of June 1977. They also dwell on the frustrations and problems the Service has encountered during this period, and project future trends and Service needs to satisfy demands on the State's nature resource while protecting the integrity of this resource—the landscape, its flora and fauna.

It has been a very crowded year as the Service continues to consolidate and find its identity while keeping day to day matters going. References are made to staff and funding shortages, and the inhibiting effects these have on the quality and amount of service which can be given to the public and to the cause of nature conservation.

The decision to have a no-growth public service situation has been accepted with fortitude by all officers. The Public Service Board has been appreciative of the fact that such a decision hits a newly established and relatively small organisation harder than it does a larger longer-established one, and within the limited room it had to move, has done what it can to help the Service in crisis situations.

A recurring topic of public interest has been the kangaroo industry. The ethics and morality of the State's nature conservation authority being associated with managing a commercial industry based on harvesting a group of wild animals, are frequently raised. The facts are that certain species have been advantaged and certain species disadvantaged as a result of the coming of western man to Australia. The equilibrium of millenia was disturbed in a massive way and adjustments have occurred. Even within an allied group of species—in this case the macropods—the effects were not uniform. While the bridled nail-tailed wallaby has been driven to the brink of extinction after two centuries, the red and grey kangaroos and certain wallabies have thrived in the altered environments.

What is to be done with the increased numbers of native animal species which has resulted? The Service plays two major roles. It regulates the industry established over a century ago to crop those native fauna species which have thrived.

Where harvesting is not possible, it allows on application destruction legally if damage to crops is shown to be excessive and threatening a farmer's livelihood.

I have every confidence that its scientifically based monitoring programme evolving from two decades of field work will continue to ensure the means of adequate survival of all species involved. There is very effective liaison between field researchers and wildlife rangers.

At the present time, the depressed state of the industry, plus a succession of favourable seasons have led to enormous increases in numbers. There is no doubt that when a succession of drought years comes numbers will drop as dramatically, as has happened cyclically often before. Meantime well-meaning people even take the Service to task over the numbers of roadkills of native animals!

A small newspaper item during the year holds great significance for the Service as well as for other Government agencies involved in outdoor recreation. The statement was made that sales of camp equipment were rising at 30 per cent per year. If the trend continues it is likely to put enormous pressures on the Service estate and it is vital that we plan for it. A management planning team has been formed to prepare management plans for some of the parks already under heavy user pressures.

I am pleased with the developing Service identity among officers at all levels, both salaried and on wages staff. I have fostered the holding of conferences within the various branches and sections; as well as general senior staff meetings. It is vital that in a Service which by its charter has people all over the State, we give every officer regular access to head office, and let country officers discuss parallel problems among themselves from time to time.

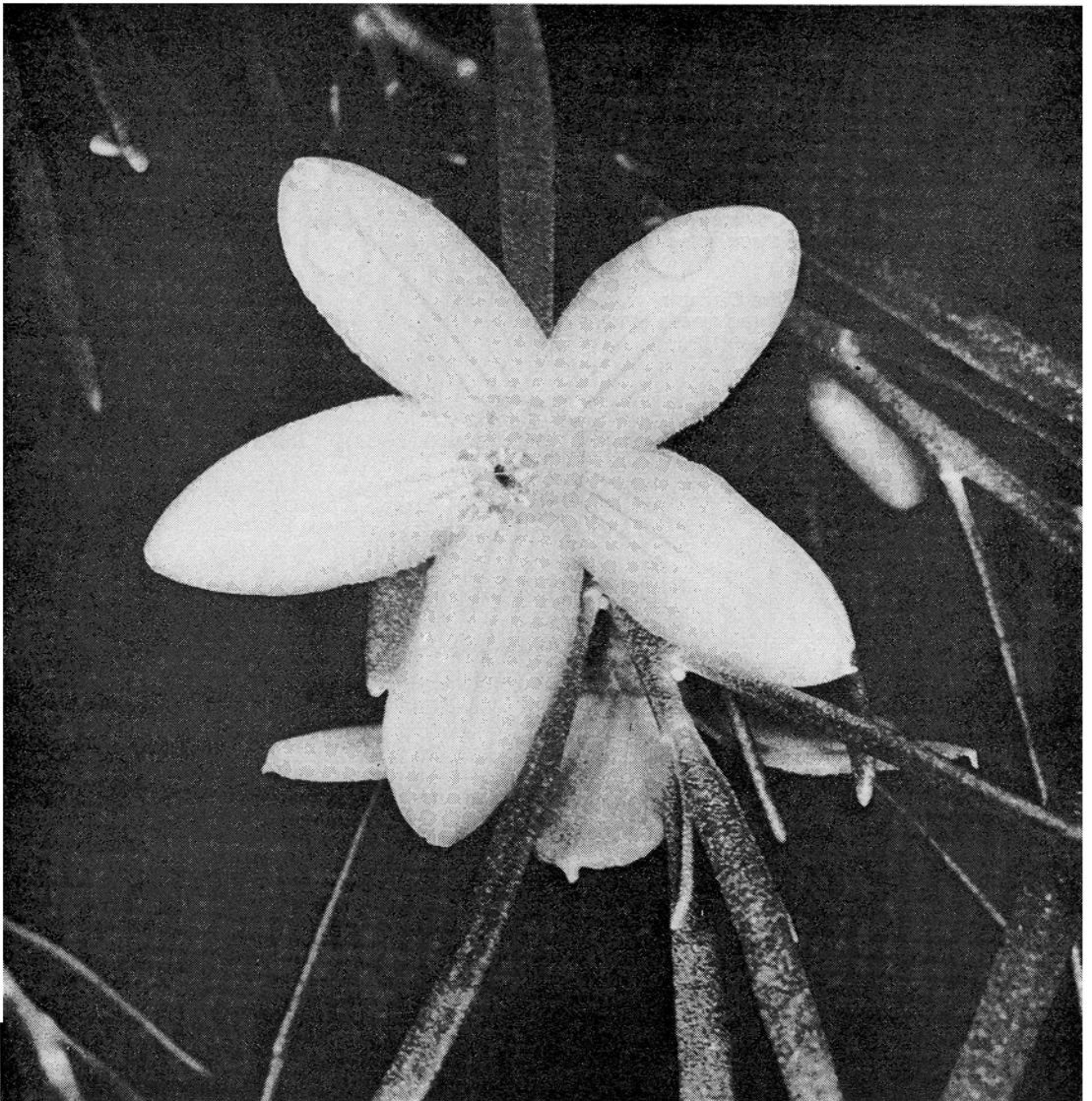
The staff has responded very well; and it has been an exciting and rewarding experience to have worked with such a loyal and dedicated team for a second year. I express my appreciation to my officers.

International Recognition

The Director represented Queensland at the 13th (Extraordinary) General Assembly of the International Union for the Conservation of Nature and Natural Resources at Geneva, Switzerland, 19-21 April, 1977. The Service is an agency member of IUCN. A significant achievement was the adoption of a statute giving agency members in a federal State such as the Commonwealth of Australia a share of one of the three votes allocated to a nation State member.

Following the above meeting the Director undertook a highly successful three weeks study tour of nature conservation in Great Britain.

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, and interprets the service to the public.

Clerical and General

This section is responsible for secretarial and accounting services, records, despatch and stores. Its staff—clerks, typists, stenographers and telephonists—are distributed throughout the Service.

The current year has seen an expansion of clerical activity within the Administration Branch of the Service, as administrative functions have been taken over from other Departments. A resultant continuing heavy workload has been imposed on staff as the Service achieves a greater self-sufficiency of operation.

Once again the administration of the Service has had to cope with the increased activity without any substantial increase in clerical or typing staff. The Service, because of the staff freeze applied to all government departments, has received only a minimal increase in its establishment strength.

The situation has been partially relieved by secondment to the Service of nine staff from Main Roads Department. These officers have been invaluable since their arrival two months before the close of the financial year. They have been allocated to management and operations (3), stores (1), records (2), technical services (1), and administration (2).

Recently the popularity of nature conservation with the general public has caused the workload on administration to increase out of all proportion to the size of the department. Overtime is worked consistently in order to meet the demand; some officers have had to work an average of nine hours overtime per week.

On the credit side, it is pleasing to report that the installation of an electronic ledger machine in Accounts section has been completed and has enabled receipts and expenditure to be recorded for the financial year 1976-77. Relevant statistics

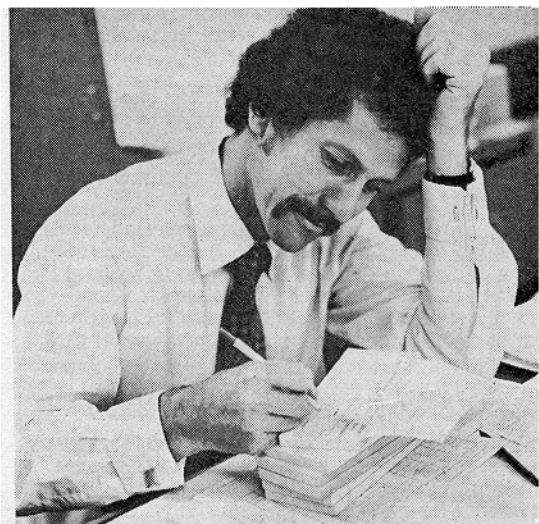
and dissections now available have facilitated budget control and the preparation of financial estimates. The increased accounting detail available for this year's report reflects the worth of this machine.

The Service now pays all its wages staff from Brisbane, the last of these pays being taken over from Forestry Department some months ago.

Appreciation is expressed to the Department of Forestry for their assistance in payment of wages to Service staff in north Queensland until May this year, and to the Department of Lands for processing collections until January 1977.

The year saw the issue of a Service telephone directory covering Statewide operations; this has been favourably received within the Service.

The number of permits issued for the various activities administered by the Service continues to increase and although many of these are revenue earning, they contribute to an increase in the general workload.



Accounts—a vital part of the Services administration



The library now subscribes to over 160 journals

A senior clerical officer has been made available for the last eight months of the year to deal with the considerable volume of ministerial correspondence directed to the Service.

The Regional centres in Cairns, Townsville, Rockhampton and Warwick continue to function without clerical and typing staff, thereby involving scientific and ranger staff in considerable clerical work. It is nevertheless necessary to establish a further Regional Administration Centre at Gympie when office accommodation becomes available.

Lack of suitable office accommodation in country areas resulted in many officers operating from their homes; this is unsatisfactory. However, the Service was successful in obtaining old business premises at 1 Lake Street, Cairns, from which the Service now operates. The use of local Department of Primary Industries office facilities by the wildlife ranger until the shift is gratefully acknowledged.

Interest in the Service as a career has led to a considerable volume of requests for career opportunities and vocational guidance from students and others who aspire to the ideals of the Service.

Owing to increasing public awareness of the need to preserve those parts of the State which retain a natural environment, it seems most likely that the volume of correspondence and other clerical activity involving the Service will continue to increase.

The heavy volume of clerical work referred to previously is only able to be dealt with because of the dedication of the staff in all branches and sections of the Service. I wish to express not only my appreciation of their efforts and loyalty but that of my executive and senior management staff.

Acquisitions and Gazettals

This section administers reserve acquisitions and processes these through to gazettal. It also sees to the gazettal of other items such as appointment of honoraries and fauna matters. In an expanding

Service such as this, the processes are on-going and at critical stages complex. Work involves extensive negotiations with other government instrumentalities and private bodies and individuals. Land dealing by its nature is both lengthy and time-consuming. The end-product as seen at gazettal gives no real indication of the workload involved.

With the continued addition of new proposals to the present list, and with more information being obtained on various areas throughout the State by a wide range of individuals and organisations, the Service's estate evaluation commitment will continue to expand.

The aim of the Service in its range of reservation options is to provide in perpetuity, firstly, a viable sampling of all the major ecological units within the natural environment and preservation of outstanding natural features; secondly, reservation of areas sufficiently large to cater for the range of outdoor recreation activities based on appreciation of the natural environment; and thirdly, preservation of areas containing high historic and sociological importance with respect to the natural environment and its inter-relationship with man at all stages of his development.

While it is true that preserving the habitat (environment) goes far towards conserving fauna, the Service cannot hope to fulfill its total nature conservation role by conserving fauna only on lands it controls directly. The gazettal of sanctuaries is a function of the section; and potential fauna sanctuary areas are examined regularly by investigation officers of this section and of other branches.

The concept of multi-purpose parks is also being developed. These are envisaged as a mixture of tenures of government-owned lands, to cater for situations where there is a requirement for nature-oriented recreation pursuits. The first evidence of this concept may be seen in a Forest Park near Brisbane.

While section activities are State-wide, priority at this juncture is being given to areas closer to the major centres of population, and to areas under more immediate threat of development (such as along the coastline).

The present Service estate is tabulated in detail elsewhere in this Report, and includes the current year's gazettals. There are, as at 30 June, 1977, 305 national parks covering 1 171 000 hectares.

National Parks

Six new national parks were gazetted covering 15 833.5 ha.

National Park 1117—Parish of Tamborine (gazetted 24-7-76) contains one of the few remaining areas of undisturbed rainforest in the Tamborine area. The land was generously donated by Miss J. E. Dunlop. The Service is grateful to those people who show an empathy with the environment in this most practical way. The area involved in this gift is 2.5 ha.

National Park 801—Parish of Mount Funnel (gazetted 2-10-76) contains wetlands and the surrounding catchment area. Also contained in the park are areas of scenic coastline and sand dunes with associated natural vegetation. Cape Palmerston forms part of this park. The area originally comprised Cape Palmerston Pastoral Holding and

part of an adjoining Grazing Selection which was surrendered to the Crown (7 160 ha).

National Park 383—Parish of Molle (gazetted 13-11-76), being the northern half of Repulse Island No. 2, is situated south of Cape Conway and west of the Cumberland Islands. Repulse Islands Nos. 1 and 3 were declared national parks in 1938. The park is well grassed with black spear grass but is otherwise mainly bare of vegetation; the coastline is rocky. (Limestone deposits are situated on the south-west portion of the island excluded from the park.) The area now within the park, previously vacant Crown land, is 42 ha.

National Park 191—Parish of Mingoola (gazetted 26-2-77) lies mainly in the watercourse of the Severn River which provides scenery quite unusual in Queensland. The river has a large flow by State standards and is perennial, with clear water. The backdrop to the river is colourful, the steep slopes of the gorge being covered by a dense forest of cypress pines and eucalypts, the blueish-green foliage of which contrasts remarkably with extensive patches of bare rock. Away from the main gorge, a number of "side" gorges occur and in two of these are spectacular falls. This park comprises leasehold land acquired by the Crown for park purposes (3 542 ha).

National Park 278—Parish of Eurimbula (gazetted 5-3-77) allows for the reservation in perpetuity of a viable and compact unit of coastal lowland type country. The area also has a high potential for recreation, being situated near Gladstone. The park comprises the former "Eurimbula Pastoral Holding" exclusive of the beach frontage along Bustard Bay which is subject to sand mining interests (5 050 ha).

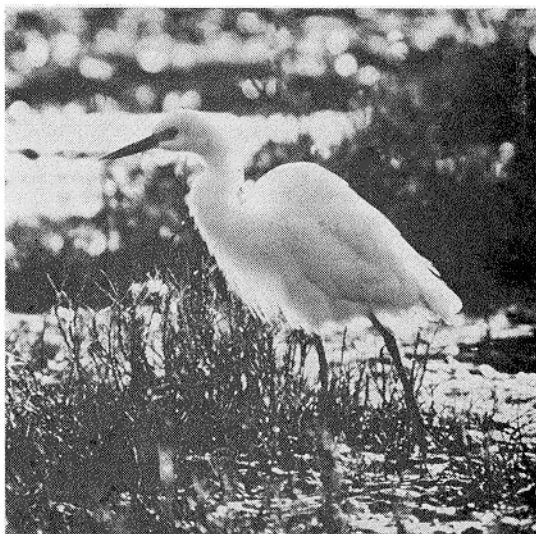
National Park 1421—Parish of Bartle Frere (gazetted 21-5-77) consists of a natural rain forest growing on the deep basalts of the Glen Allyn-Lamins Hill Blow-Outs and will mostly provide for future scientific purposes. It would also provide a haven for local indigenous native fauna (37 ha).

On 11 existing national parks, additions were gazetted which totalled 1 776 ha.

National Park 846—Parish of Fitzroy (gazetted 24-7-76). This area added to the Limestone Ridge National Park offers a spectacular change from the surrounding terrain; it contains some unusual flora. The caves within this area support large bat colonies, while marsupials, birds and reptiles are numerous on the slopes of the ridge. This extension formerly was a recreation reserve (area 83 ha).

National Park 150—Parish of Whyanbeel (gazetted 24-7-76). This area amalgamated with the existing national park comprises mainly steep rain forest country unsuitable for agricultural or pastoral pursuits and is now included in the Dagmar Range National Park. The extension to this park was formerly vacant Crown land (area 147 ha, but recalculation of the total area reduces the net gain to 118 ha).

National Park 331—Parish of O'Connell (gazetted 2-10-76). This addition to Castle Tower National Park consists of samples of vegetation developed on limestone and includes Mount Stanley, one of the dominant features of the Many Peaks Range. The area was formerly vacant Crown land and parts of grazing selections surrendered for park purposes (area 919 ha).



Egret—Townsville town common

National Park 1445—Parish of Hull (gazetted 2-10-76). An area of predominantly mangrove swamp bordered and bisected by tidal creeks and now added to Maria Creek National Park provides a diversity of habitat types particularly for species of waterfowl. The extension to this park was formerly vacant Crown land (area 197 ha, but recalculation of total area reduces the net gain to 184 ha).

National Park 274—Parish of Shaw (gazetted 2-10-76). This is Lindeman Island National Park and its overall area was increased with the inclusion of the closed esplanade (area 79 ha, but recalculation of total area results in a loss of 110 ha).

National Park 796—Parish of Samsonvale (gazetted 13-11-76). Maiala National Park has been increased by an area of steep rugged mountainous country falling to the southern boundary, intersected by gullies heavily timbered with hardwoods and scrubwoods. The extension, formerly freehold land, was purchased with Service funds provided by Commonwealth Government in 1975-76 year (area 50 ha).

National Park 1334—Parish of Gladly (gazetted 5-2-77). The area amalgamated with Eubenangee Swamp National Park is valuable in assuring the continued existence of the swamp in its natural state. The north-eastern additions of the park control the main drainage area and contain waterbird habitat, particularly during extended dry seasons. The extension, formerly freehold and leasehold land, was purchased with funds furnished by the Commonwealth Government in 1975-76 year (area 286 ha).

National Park 1072—Parish of Dayman (gazetted 26-2-77). Little Woody Island was included with the existing Woody Island National Park. The island is situated in the Great Sandy Strait and is covered by kangaroo grass, species of ironbark, red bloodwood and brush box. There are three different species of mangrove on the island. This extension to the park was formerly vacant Crown land (area 20 ha, but recalculation of total area results in a loss of 48.2 ha).

National Park 760—Parish of Melcombe (gazetted 19-3-77). An elongated area was added to Lamington National Park and from its location on an elevated ridge provides for an excellent view of the surrounding area. This strip of land runs adjacent to the Binna Burra road for approximately 3.5 km, and was previously vacant Crown land (area 24.3 ha, but recalculation of total area results in a loss of 151 ha).

National Park 752—Parish of Numinbah (gazetted 2-4-77). This extension of Natural Bridge National Park encompasses a small running creek and its watershed. Preservation and protection of such a system, plus the rainforest cover on the slopes of the watershed, is an important addition to the park. This addition provides walking access from Numinbah Valley to Springbrook plateau, and was formerly vacant Crown land (area 13 ha).

National Park 796—Parish of Samsonvale (gazetted 2-4-77). This extension to Maiala National Park of an area of 100 ha comprises mixed eucalypt/rainforest communities on the upper slopes merging to pure rainforest in the valley and the creek flats. Creeks through the area are permanent and comprised of cascades, rock pools, and small waterfalls. The overall quality of the area is superior to that presently in the existing park. This was an area of freehold land purchased with Service funds.

Environmental Parks

Seven environmental parks were gazetted, and details of the parks, totalling 5 734 ha, are given below.

Environmental Park 1207—Parish of Tallebudgera (gazetted 13-11-76) adjoins the MacPherson Range and was transferred to the Crown by Mrs D. J. Hilder upon subdivision of adjoining land. Although small, it is considered to be an integral part of the Scenic Rim walking trail and provides access to spectacular views across the Tweed River (area 3 ha). Again the Service expresses special thanks to Mrs D. J. Hilder for her generous gift.

Environmental Park 1250—Parish of Beauaraba (gazetted 13-11-76) is situated about 16 km north-west of Pittsworth. Extensive clearing has been carried out on surrounding properties while

the proposed park has substantial stands of brigalow-belah scrub. This area was purchased by the Service (area 29 ha).

Environmental Park 832—Parish of Hector (gazetted 2-4-77) situated about 15 km south-east from the City of Mackay. The area consists of one rocky knoll sloping steeply to a rock platform on the eastern side; it is more gradually sloping on the west, being intersected by several small gullies. There are excellent land and sea views available from Mount Hector while many decorative patterns are weathered in the sandstone rock formations. This area was formerly held as a reserve under the Land Act (area 15 ha).

Environmental Park 2696—Parish of Caboolture (gazetted 2-4-77) is situated about 9 km south-west from the town of Caboolture. The ground is generally level to undulating, being timbered with cabbage gum, blue gum and wattle, while water supplies are available from Sheep Station Creek. This area was formerly a reserve under the Land Act (area 231 ha).

Environmental Park 1054—Parish of Mooloolah (gazetted 7-5-77) is situated in the Buderim area and in a westerly direction from the town of Maroochydore. This area was donated by Maroochydore Shire Council to which the Service expresses its thanks (area 3 ha).

Environmental Park 5—Parish of Wilandspey (gazetted 21-5-77) formerly part of "Wilandspey Preferential Pastoral Holding", is situated about 120 km north-west of the town of Clermont and within the Belyando Basin. The area comprises extremely dense and almost pure gidyea scrub inhabited by a variety of birdlife. The Trustees are the neighbouring landholders Mr and Mrs E. S. Martell who are keen naturalists. The Service appreciates their willingness to tend this reserve which is large by environmental park standards (area 5 200 ha).

Environmental Park 384—Parish of Dryander (gazetted 11-6-77) is situated about 4.8 kilometres north of Proserpine and consists of a steep mountain which rises to a height of 300 metres and is covered by dense rainforest. The area was originally vacant Crown land (area 253.5 ha).



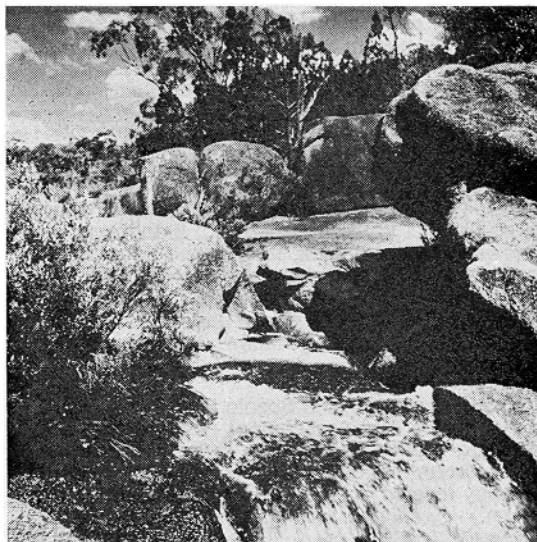
Brolgas over the Townsville town common

Land Acquisitions

The funding for land acquisition in the current year at \$300 000, far exceeded that for the previous year (itself a record). During the early years of the Service major efforts are being made to increase its estate. While many areas come from expired government leaseholdings and further areas can be negotiated with other departments (notably Forestry Department), private lands at times are available and those deemed worthy of purchase must be bought at current market value. The relatively large amounts of money now being made available for land acquisitions in comparison with past years indicated Government approval of the Service's requirements as a user of land, and confidence in the Service's selection of land for nature conservation.

In negotiations, the co-operation given by officers of the Department of Lands has been of great assistance.

Purchases during the present financial year are presented below:



Bald Rock Creek—Girraween National Park

Portion	Parish	Area (ha)	Purchase Price	Purpose
			\$	
Freehold 139 (part)	Tenterfield	147	18 000	Extensions to Girraween National Park
Freehold 92	Tenterfield	108	52 956	
Freehold 107				
Sub. 1 of por. 55v				
AF3315	Folkestone	135	17 000	
por. 199				
Freehold 89	Tenterfield	348	41 000	
Freehold 84	Tenterfield	110	8 800	Extensions to Mount Barney National Park
Freehold 85	Tenterfield	118	9 500	
Freehold 128	Tenterfield	261	Certain moneys paid to Department of Lands in trust but finality not yet reached.	
and por. 127		371		
Freehold 40, 49, 79v, 97v	Melcombe	395	35 000	Extensions to Mount Barney National Park
Freehold resub. 49 of sub. 17 of resub. 7 of sub. 2 of por. 185	Samsonvale	110	60 000	Extension to Maiala National Park

The major acquisition effort has been in purchase of land for addition to Girraween National Park. This was the situation also in 1975-76 year and purchase actions are still incomplete. The acquisition of the areas at Girraween is part of a major park extension to the New South Wales border and will connect with the Bald Rock National Park in that State.

Further purchase acquisitions currently nearing completion covered freehold portion 27v, parish of Crows Nest, freehold sub. 1 of portion 176 and portion 177, parish of Numinbah, and various freehold and leasehold lands at Cape Cleveland near Townsville. These were all financed under the States Grants (Nature Conservation) Act, which is a Commonwealth Government Act for the purpose of acquiring lands for nature conservation by the States. Finality on gazettal of these areas is anticipated to be completed with the year 1977-78; the \$400 000 grant has already been paid over. The Service is appreciative of the efforts of officers in

the Commonwealth Department of Environment, Housing and Community Development in processing this major grant. Unfortunately, indications at year's close are that this useful source of funding could cease in 1977-78.

Many of the existing national parks throughout the State have inholdings and a large number also have unmanageable and unrealistic boundaries. Acquisition of adjoining land, often at relatively high values, is needed to provide the State with a system of parks that will exist in perpetuity, and the Acquisitions and Gazettals Section will serve a major role in achieving this objective.

Park Proposals

As at 30 June, 1977, some 714 proposals cover areas of possible interest to the Service. This compares with 586 at the start of the year. These proposals have been recommended by Service officers, officers of Forestry Department, Lands

Department and Department of Primary Industries, conservation bodies and private individuals. The proposals are either under evaluation or being developed and processed by the Service.

Detailed below are some of the areas of current major interest for which reservation moves are active:

(a) Cape Cleveland (Townsville), (b) Scenic Rim, Mount Mistake to Point Danger, (c) Extensions to Girraween National Park, (d) lowland swamps, Kennedy area, (e) Blackdown Tableland, (f) extension to Bunya Mountains, (h) Central Highlands extension, (i) some Cape York Peninsula proposals, e.g. McIlwraith Range and Jardine River.

One major proposal, the Scenic Rim (formulated by the Scenic Rim Association) covers land extending from Mount Mistake to Point Danger and incorporates many existing national parks presently located on this spectacular coastal range system.

Fauna Sanctuaries

Two Fauna Sanctuaries have been declared on private lands, as detailed below:

Sanctuary	Parish	Area (ha)	Date of Gazettal
Vybowen Hill	Tenterfield	40	2-4-77
Glenlyon Dam	Aitkins Flat Claremont Glenlyon Mingoola	abt. 2 960	14-5-77

Technical Services

It has long been recognized that if both management and research objectives are to be achieved then these must be interpreted. Indeed it has been said of the American Park System that by 1990 interpretation will be the main function being undertaken. All material produced by this section is based on six basic principles of interpretation as outlined by Freeman Tilden in his book "Interpreting Our Heritage" (North Carolina Press 1951).

I. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.

II. Information, as such, is not interpretation. Interpretation is revelation based on information. But they are entirely different things. However, all interpretation includes information.

III. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical or architectural. Any art is in some degree teachable.

IV. The chief aim of interpretation is not instruction, but provocation.

V. Interpretation should aim to present a whole rather than a part, and must address itself to the whole man rather than any phase.

VI. Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program.

With these six principles in mind, the Service has proceeded to provide answers for the hundreds of requests for information received each week. The task is endless, never dull, and often rewarding. It is hoped to have a series of four national park map/brochures covering the main regions of the State produced by Christmas 1977. Work is well under way on a series of brochures on individual parks throughout the State.

Interpretive Facilities

With the commencement of construction on the Girraween and Carnarvon National Parks information centres, work is underway to provide interpretive facilities such as displays, slide shows and herbaria. Requests from other Branches for projection equipment will shortly necessitate an increase in the number of units available for this purpose.

Interpretive Programs

Throughout this year nine large interpretive programs have been conducted on national parks such as Lamington and Bunya Mountains in south-east Queensland. More than 4 600 people took part in these. Most of the staffing has been



The RNA show exhibit featured the Herbert River ringtail possum

provided by the Natural History Associations in these parks. These honorary officers donate their time and skill to help people discover more about the parks, and their participation is most appreciated. Few Service staff can be spared for involvement in these activities, and unless the Service can give the lead in the field on a full-time basis, the continued success of these programs must remain the subject of concern.

Brochures

During the year the following printed matter was produced to meet the public demand for written material on national parks and wildlife:

Title	Number
Rainforest Self Guiding Nature Walk—Maiala National Park	10 000
Bunya Bunya Self Guiding Nature Walk—Bunya Mountains National Park	2 000
Cedar Block Self Guiding Nature Walk—Ravensbourne National Park	2 000
Exploring the Royal Arch Caves, Chillagoe—Mungana National Park	5 000
National Parks of the Atherton Tableland	5 000
National Parks of the Townsville Region	5 000
Walking at Girraween National Park	5 000
Cape Hillsborough National Park Bird List	1 000
Bunya Mountains National Park Bird List	1 000
Girraween National Park Bird List	1 000
Eungella National Park Bird List	1 000
Carnarvon National Park Bird List	1 000
Lamington Guide Vol 2 No. 2	10 000
Lamington Guide Vol 2 No. 3	10 000
Lamington Guide Vol 3 No. 1	10 000
Tamborine Guide Vol 1 No. 1	10 000
Lamington—Junior Ranger Material	3 000
Maiala—Junior Ranger Material	3 000
Bunya Mountains—Junior Ranger Material	3 000
Tamborine Mountain—Junior Ranger Material	3 000
Rain Game	500
Possum Sticker	100 000
Iron-on Transfer	100 000
Possum Brochure	50 000
Possum Folder	5 000
Spider Poster	50 000

A series of map brochures to cover all parks in Queensland is presently being prepared. Individual park brochures are being produced also and the first of both series will be available early in the next financial year. The Service also plans to enter into poster production.

Publications

Technical and natural history papers published during the year 1976-77 by officers of the Technical Services Section were:

- Carter, R. W. (1976) In Search of a Symbol. *Wildlife in Australia* 13:116-120.
- Carter, R. W. (1977) In Search of a Symbol. *Panorama* 19:4.
- Mackness, B. S. (1976) White-throated tree-creeper roosting in a cave. *Sunbird* 7:48.

Mackness, B. S. (1976) A helper at the nest of the brown warbler. *Sunbird* 7:79.

Mackness, B. S. (1977) Infestation of the pheasant coucal by the acanthocephalan *Porrochis hylae* (Edmonds). 77:39.

Ogilvie, P. S. (1977) A slice of history in a loaf of nature. *National Trust of Queensland Journal* April: 5-8.

Van Dyck, S. and Ogilvie, P. S. (1977) *Antechinus swainsonii* (Waterhouse 1840), the dusky marsupial mouse, an addition to the mammal fauna of Queensland. *Mem. Qd. Mus.* 18:69-73.

Photographic Library

During the year, the Service photographer (Mr S. Parish) undertook several field trips to places such as Bulloo Shire, Lizard Island and Heron Island, and Cape York Peninsula to record as much of the wildlife of the State on film as possible. The trips were in conjunction with an Australian Broadcasting Commission series of wildlife films. The Service now has an extensive and valuable wildlife photographic library. These photographs are also presently being used regularly in brochures and displays.

As the Service gains experience, transparencies will be used in audio-visual production for both Service staff and schools.

Environmental Education

With the increasing awareness of the environment by the public, environmental education has become an important part of this Section's work. The Officer in Charge of Technical Services Section (Mr P. S. Ogilvie) represents the Service on the Education Department's Co-ordinating Committee on Environmental Education. The Service has also continued to support the Moreton Regional Environmental Education Council and was involved in a planning session at Camp Duckadang (near Moore) to formulate details of a workshop on environmental education in the Moreton Region.

Plans were made to hold a National Conference on Environmental Education to be held in July 1977 in Brisbane.

The Service has established a close liaison with the Education Department and Service officers lecture at in-service training programs run by that Department.

The Interpretive Officer (Mr W. Carter) has conducted a series of orientation programs for teachers intending to make use of the Environmental Studies Centre at Lamington National Park.

Lectures and Talks

Officers of the Technical Services Section have been required to speak to various organisations and schools. This is becoming unmanageable because of staffing difficulties and this area of public contact may consequently suffer. A total of 72 talks and lectures were given to an estimated 1 492 people.

The Senior Technical Services officer was invited to lecture at Griffith University on national parks as a form of land use. Mr B. Mackness, who is

co-ordinating the Junior Ranger Program, appeared on the Channel O program "A Crook Affair" and outlined Service activities in this field. This single appearance created considerable interest in the community emphasising the value of television as a medium for interpretation.

World Environment Day

The Service assisted in the celebration of World Environment Day (4 June) by presenting a puppet show entitled "Matt the Feral Cat" in King George Square. This was designed to illustrate the problems of domestic animals being "dumped" on national parks. It proved a great success with many children returning for all three shows. It is hoped that this interpretive activity can be expanded to supply the ever-increasing requests from schools and associated organizations.

Displays

During this year four displays have been prepared for exhibition by the Service. At the 1976 Royal National Association Show the Service mounted a display in the Government Pavilion to launch the new symbol of the Service. The display was basically a photographic presentation and was well accepted by the public. A brochure, poster, sticker and iron-on transfer were produced and distributed.

In conjunction with the Anthropology Museum at the University of Queensland and with numerous other government departments, the Service prepared a display on Fraser Island.

A photographic essay on the natural resources managed by the Service entitled "From the Coast, across the Divide, into the Far West" was prepared and is already committed for extensive use. To date this display has been used as part of the Education 77 display at the National Conference on Environmental Education. The R.N.A. display is being used in the Binna Burra and Canungra Information Centres. The demand for displays from field staff necessitates greater emphasis on this aspect in the future, budget allocations permitting.

Junior Rangers

During the 1976-77 period the junior ranger program expanded and consolidated at four national parks. Originating at Lamington National Park, the program was designed to introduce children between the ages of 6 and 12 to the natural environment by performing "fun" outdoor activities. It is now offered at Lamington, Tamborine Mountain, Maiala (Near Mount Glorious) and Bunya Mountains National Parks, and as the Service grows will be extended to central and northern regions of the State.

Junior Ranger Program	Dates Conducted
Maiala	First Saturday in each month
Bunya Mountains	All Holiday periods
Lamington	Most Holiday periods
Tamborine	Last week in January



The Junior Ranger program—a fun activity

The program now includes more "living history" activities, and junior rangers are taught how to throw boomerangs, how to make aboriginal meals, and other activities.

Several issues of "The Possum", the junior ranger newsletter, were produced. The mailing list has increased considerably, with more than 1 100 members.

There has been an overwhelming demand not only to expand the junior ranger program but also to design a new program for youngsters in the 13-20 age range. Investigations are now underway to assess the feasibility of a program similar in content to the American Youth Conservation Corps; if this program is to be successful it has to involve other Queensland Government Departments as well as several interstate Departments.

Plans are well underway to produce a long-playing record of children's songs written in conjunction with the junior ranger program: Songs like "The Leech", "Olly Octopus" and "Matt the Feral Cat" are included.

Honorary Protectors

The system of appointing honorary protectors to aid field staff and to help in interpretive programs has been undergoing major re-organisation. The backlog of applications has been processed and a system of records instituted. The lack of these has caused confusion in the past. Instead of being appointed on an *ad hoc* basis as before,

honorary protectors are now appointed on the basis of a need for interpretive duties or assistance to field staff in park and wildlife management. This new system will form a basis for the proposed new legislation.

Honorary protectors throughout the State are being encouraged to form regional groups, corresponding to Management and Operations regional areas. The formation of these groups will facilitate training and other support services, and will also provide "feed-back" to the Service. They will reduce the isolation of honorary protectors, and regional groups will enable honorary protectors to resolve any problems they may have with others having similar problems in the same region. These groups will allow co-ordination of honorary protectors to supplement paid staff more effectively and more efficiently.

Gazettals of Honorary Protectors

With the passing of the enabling legislation, all honoraries are now known as honorary protectors. This serves to bring all honoraries under one name, although they still have powers under the fragmented previous legislation. The enactment of consolidated legislation will considerably reduce the problems of appointing honorary protectors.

The following have been appointed during the year:

Christopher Ernest Arnott, Charles Willie Ayles, Francis Bailey, Robert John Baade, William James Bailey, Sidney John Balma, David Henry Barry, Thomas George William Beal, Keith Arthur Boon, Bernard Henry Booker, Colin Frederick Bryant, Leonard Thomas Burgess, Graham Peter Burst, Edmund Joseph Camenzino, James Dalziel Campbell, Douglas James Church, Joan Margaret Clay, Phillip Henry Thornton Clay, Anthony Douglas Cook, Gordon Alfred Martin Coutts, William Frank Crowther, George Albert Christie, Alan Erskine Cummins, Barry William Duncan, David Maxwell Diehm, George Robert Evans, Charles Rex Faine, Neville Thomas Hammond, Geoffrey Clyde Hannant, Paul Elmer Hansen, Leonard Samuel Harris, Christopher John Heath, Raymond Douglas Humphreys, Thomas Harold Humphreys, Peter Ross Huthwaite, Graeme Paul Jacklin, Isabella Lucy Jones, Gerard John Kearns, Albert Otto Koehler, Lila Welbiene Koehler, Colin Terrence Kratzman, John Barry Laver, Terence Daniel Leahy, Joan Rose Ludke, Hector John Mackay, Graham Leicester Macfarlane, Barry Victor Masters, Roderick Heydn Blair May, Phillip Byrne Maynes, Peter Alexander McKenzie, David John McRae, Victor Charles Mobb, Martin John Moesker, Ross Charles Newman, Michael Francis Olsen, John William O'Sullivan, Paul Dudley Parkinson, Ronald Henry Pattle, Robert Arthur Patton, Desmond Roy Plate, Edward Donald Plum, George Edmund Scholes, Eric James Spann, Bruce Stoff, Gordon Charles Stone, Anton Strasser, Edward Stanley Thompson, Henricus Antonius Verroen, Suzanne Marilyn Verroen, Leslie Ronald Walker, David Ramsay Warne, Kenneth Roy Werner, James Edward Williams, Jean Rhonda Williams, Estelle Blanche Woodhouse.

The Service extends its sincere thanks to the honorary rangers and protectors already appointed for the work they have done; this willing assistance has been invaluable in extending the aims of the Service into areas which would otherwise have remained unstaffed and unprotected.

Co-operating Associations

Since the first Natural History Association in Queensland was formed at Lamington National Park in conjunction with the National Parks and Wildlife Service, four additional Associations have been founded, each with the aim of encouraging the park visitors to understand their environment and to make the most of a park visit.

With a membership drawn from the public, Natural History Associations are able to contribute a diversity of skills and knowledge to the Service's interpretation programs. By encouraging activities amongst members of the community, the Natural History Associations are invaluable in assisting the Service to bring about a public enthusiasm for park objectives through community involvement.

The Service acknowledges the assistance provided by these Associations, in particular their co-operation in running Junior Ranger programs and other interpretive activities.

Library

In the past year the size of the Service's library and the facilities it provides to both Service officers and the public has increased markedly. The officer temporarily handling this facility may shortly be required to handle interlibrary loans which number between 600 to 1 000 a year at present.

More than 160 journals and abstract subscriptions were received by the Service and some 50 per cent of these were new subscriptions. Content pages of journals were sent to parks, regional centres and Service officers who requested them; photocopies of articles the officers wished to see were provided.

Over 40 rare or out-of-print and valuable volumes were purchased through a special bequest fund. Over 75 other titles were purchased for the library and for use in parks and other centres. Books and many journals were obtained from other libraries which offered these on duplicate lists.

The cost of books has risen greatly and the library still has a long-standing backlog of requests for books pending available funds.

Librarians from the Forestry Department Library catalogued all books held by the library at Head Office in December 1975 and January 1976. This assistance was greatly appreciated.

Ninety books were bought for Carnarvon and Girraween Information Centres; these parks thus have good facilities for answering environmental enquiries.

Publications received by the library are increasing in number. Some 24 are being received each month.

Churchill Fellowship

This year the Service's Interpretive Officer Mr R. W. Carter received a Churchill Fellowship tenable in 1978 to study overseas developments in national park interpretation with particular reference to environmental education in U.S.A., Canada, East Africa and United Kingdom.



Interest in the Service's activities is continuing to increase

Training

Five training programs were undertaken for both park rangers and honorary protectors, and interpretive staff lectured at these training days. A member of the drafting group, Mr I. Grayson, lectured on map use at an honorary protector training day at Maiala. Other aspects covered during this training course were guided walks and junior rangers.

Field staff are finding their services in demand for guiding visitors through the park and talking to interested organisations. There is a need to establish a training section within the Service to organise and co-ordinate these activities.

Drafting and Mapping

As the Service entered its second year, it became apparent that the role of the Drafting and Mapping Section would be to function in three main areas:

1. Map compilation
2. Graphic art work and
3. Illustrating lithographs.

Map Compilation

Compilation is proceeding on a series of 1:1 000 000 scale maps to accompany a set of 5 new State-wide brochures. Being multi-colour productions, the punch-registering facilities of the Department of Mapping and Surveying have been used, which in conjunction with the use of modern drafting materials and techniques will ensure reproductions of the highest quality.

Several smaller one-colour and two-colour maps for brochures of individual parks also have been compiled.

Detailed mapping of individual parks cannot be considered while staff remains at its present level and until survey gangs are appointed in the field.

Graphic Art Work

During the period, the constant stream of publications being produced by both Technical Services Section and Research and Planning Branch have created a heavy demand for graphic art work.

The Service is fortunate to have a Drawing Office Aide on its staff who has had training in the graphic arts field, and this officer is occupied full-time on this type of work. A full-time graphic designer is required.

Illustrating Lithographs

With more than 700 areas to be investigated for park suitability, and with each area requiring several illustrating lithographs, this aspect of the work is increasing.

Miscellaneous

Some compass and chain survey work has been performed by Drafting personnel when it has become necessary to accurately map a walking track. An aerial photo library has been established with its accompanying recording system. Photographs are in regular use by officers undertaking field studies and research programs. The drafting and mapping group has been made responsible for keeping the register of "The Estate of the National Parks and Wildlife Service." This involves both mapping and tabulated records of all national parks, fauna reserves, environmental parks and fauna sanctuaries. During the year more than 1 800 national park maps were purchased by the public from Service outlets. Appreciation is again expressed to the Department of Forestry for their willing co-operation in making available the facilities of their varityper and offset-printing press.

Management and Operations



This Branch is responsible for tactical planning and implementation of policy in relation to the management of parks, reserves and wildlife.

Wildlife

In general, overall seasonal weather has continued to provide favourable conditions for wildlife.

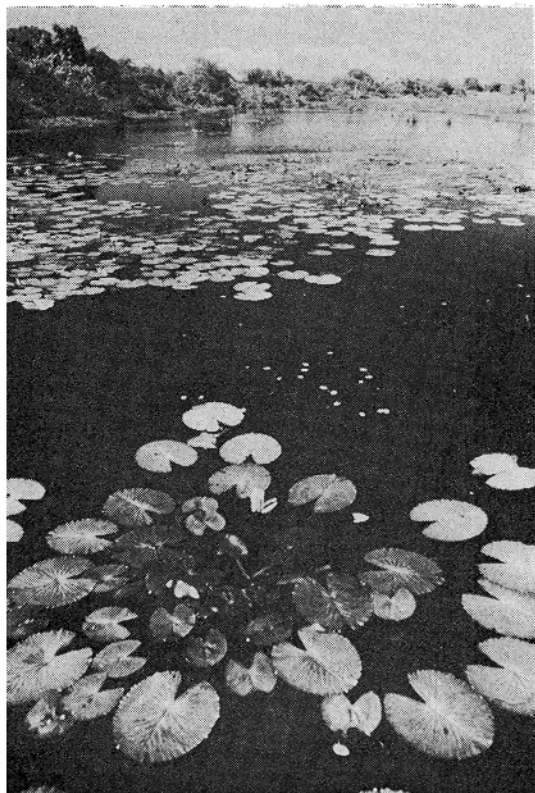
The conservation legislation aims at protection for Queensland's 251 species of reptiles, 556 species of birds and 149 species of mammals. This represents over one-half of all Australia's different species of reptiles, four-fifths of the birds and two-thirds of the mammals.

The Service has direct jurisdiction over less than 10 per cent of the State's land even to the level of sanctuary. The responsibility of looking to the well-being of fauna on the remaining 90 per cent of the State rests largely with a small team of wildlife rangers. It follows that this vital section of the Management and Operations Branch has had a full year of activities covering a wide range of responsibilities.

Rangers are centred in Brisbane (3), Charleville (1), Rockhampton (1), and Cairns (1) with the State divided broadly into three administrative districts. The southern district is administered by officers from Brisbane and Charleville, the central district from Rockhampton and the northern district from Cairns. Regions of responsibility allocated to each ranger are excessively large and the section has little hope of effectively controlling illegal wildlife activities whilst current staffing rates prevail.

Enormous efforts are being made by rangers to provide a reasonable servicing of massive areas of responsibilities. Because as stated elsewhere, country officers lack supportive clerical staff, an increasing office commitment—processing permits and correspondence generally, together with a proliferating public demand for information concerning wildlife—has imposed constraints on what should be the main work of a wildlife ranger—fieldwork. For instance, one wildlife ranger collected some \$37 000 in fees in one quarter. Because most transactions involve sums

of less than \$100, the routine office work is formidable and time-consuming. Despite this, major field trips were undertaken by all rangers in their respective districts, e.g. Cape York Peninsula, Gulf of Carpentaria, Lower Burdekin, Paroo, Bulloo, Diamantina, Winton and Boulia, together with most major towns of coastal and near coastal Queensland.



Cooloolo National Park—a habitat for water birds

Kangaroo Industry

The Service, through its Wildlife Management Section, is responsible for administering the kangaroo meat and skin industry under the *Fauna Conservation Act 1974-1976*, which requires shooters and dealers to be registered. Control is maintained by restricting the number of premises at which kangaroo products may be processed, and by the overall quota imposed by the Commonwealth Government.

In 1977 the number of units of premises (chiller boxes) registered was reduced from 80 to 76 and localities were reviewed; previously too many registered premises were unused. This prevented others obtaining licenses once the 80 quota was reached and it was reasoned that new, active premises should restimulate the industry with additional finance and new initiatives.

Harvests by calendar years for the last five years are presented below:

Year	Harvest
1972	421 959
1973	457 720
1974	317 479
1975	524 526
1976	620 555

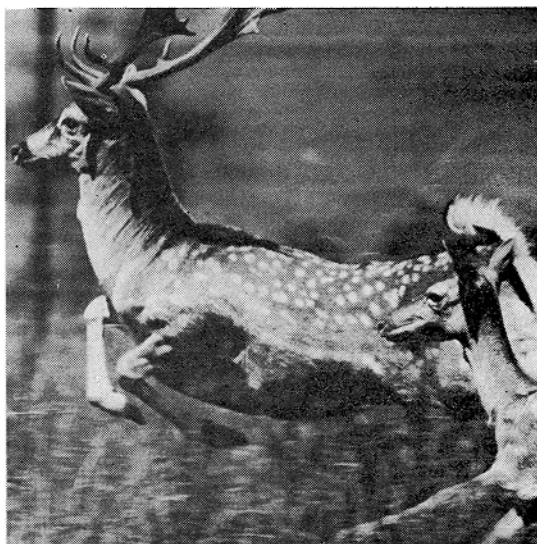
Fauna in Captivity

The retention of native fauna in captivity for public exhibition is contentious and requires attention under the fauna legislation. Zoo-keeping, like most other commercial activities, is complex and specialised. There are 20 licensed fauna premises (zoos) in the State. The licences are issued to enable the travelling public, particularly interstate and international tourists, to view this State's fauna.

Conditions under which fauna is retained captive for public exhibition are monitored by wildlife rangers. Two aspects are involved; firstly to ensure that premises are maintained adequately in relation to the welfare of the animals, and secondly, that a satisfactory tourist facility is available for public viewing and education. Most proprietors of fauna exhibitions do their best; but as retention of captive fauna is costly and difficult, some proprietors require additional stimulation and surveillance.

Some public premises, in addition to providing an educational facility, are used for research. As an example, venomous reptiles from some Queensland premises are made available for their venom to be "milked" and subsequently used for anti-venene. This has resulted in a number of snake-bite victims recovering who may otherwise have died.

While requests to exhibit well maintained and well displayed fauna are encouraged, as evidenced by the number of licences issued, exploitation by trading in native fauna interstate and internationally is firmly discouraged. The Service finds that encouraging such trading eventually means encouraging trapping; and in view of the lucrative illicit market for scarce fauna, strict monitoring of activity by rangers is necessary.



Red deer in captivity for research

Sport Hunting

There is no doubt that moral and philosophical arguments touching on "man the hunter" will exist as long as man exists. Well managed sport (and for that matter commercial) hunting in fact can be less environmentally damaging than many other accepted leisure activities.

Certainly, the value of sport hunting in Queensland is considerable, and has been estimated at some \$500 000 annually. Thus, money invested by hunters on camping equipment, vehicles, fuel and food, plus ancillary costs, make a significant contribution to industry. Some species of wild ducks, as well as quail and snipe, are hunted as game species.

The following are details of sport hunting permits issued.

Sport Hunting Permits

	Centre	No. Issued	Fees Collected
Waterfowl*	Brisbane	849	4 245
	Charleville	12	60
	Rockhampton	820	4 100
	Cairns	1 065	5 325
		Sub-total	\$13 730
Kangaroost	Brisbane	282	1 410
		Sub-total	\$1 410
		1976 Total	\$15 140

* Including quails and snipe.

† Personal Use Only—grey kangaroo, red kangaroo, wallaroo, whiptail wallaby, red-necked wallaby, swamp wallaby, sandy wallaby, black-striped wallaby.

The following are details of open season dates.

Open Season Dates

	Open Season Dates	Zone Numbers
Waterfowl		
Ducks and quails	5 June—28 August	1 & 4
Ducks and quails	3 July—25 September	2, 3, 5 & 6
Snipe	7 February—27 March	1
Snipe	4 Sept.—30 October	1
Kangaroos		
Grey Kangaroo	1 Jan.—31 December	1, 2, 3, 4, 5, 6
Red Kangaroo		2, 4, 5, 6
Wallaroo		1, 2, 3, 4, 5, 6
Whiptail Wallaby		1, 2, 3
Red-necked Wallaby		1, 2, 4
Black-striped Wallaby		1, 2, 3, 4, 5
Swamp Wallaby		1, 2, 3, 4, 5, 6
Sandy Wallaby		1, 2, 3, 6

Subject to adequate populations of the relevant species, open seasons are usually declared annually. The Service depends heavily for information on populations of game on its honorary protectors as well as its field staff and other Government field officers. Though more detailed information is always desirable, safety checks are such that all game species are being effectively conserved.

Following on representations from shooters' associations whose members claimed that many duck shooters did not seek licences or abide by bag limits, the Service undertook helicopter patrols from the Rosewood-Gatton area to Goomeri. Patrols commenced at first light, and all waterfowl areas were checked. Ground patrols also were carried out. No illegal shooting was detected.

1976 Deer Open Season

A red deer season was opened during the 1975-76 year and the following statistics have been compiled subsequently.

There were 211 permits issued and 263 tags (limited to maximum of 2 tags to each permit holder). As at 16 November 1976, 158 cards had been returned indicating that 88 deer were taken of which 81 were male animals.

Successful hunters were asked to forward jawbones to the Service for age estimation, and 24 were received. Estimated age distribution was as follows:

Age (in years): 1 2 3 4 5 6 7 8 9 10

No. in class: 1 - 4 5 5 2 1 3 1 2

Reports of antler quality give the following:

No. of points:

2 3 4 5 6 7 8 9 10 11 12 13 14 15

No. in class:

11 1 1 - 6 5 16 6 15 7 5 3 1 1

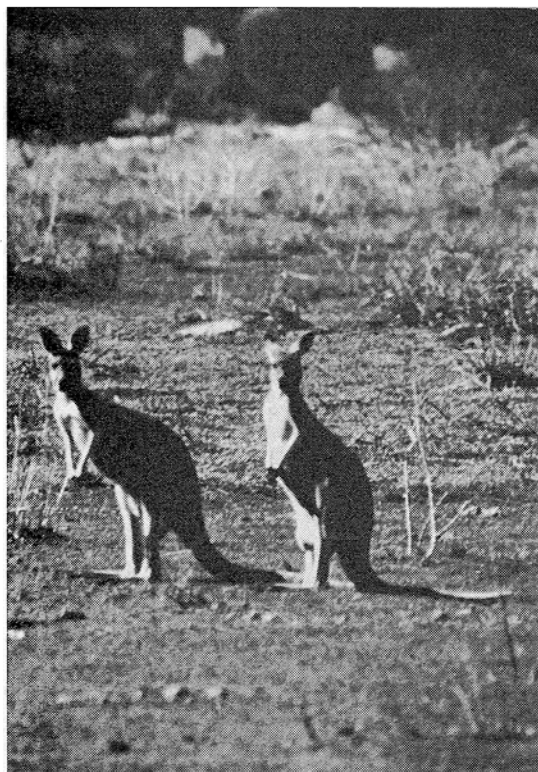
No relationship between estimated age and number of points was apparent from the returns received. The 15-point stag was estimated to be 5 years old and the two oldest animals (10 years) each had 8 points.

Because of the small total take there is no concern about the imbalance between sexes taken. A significant number of hunters took small-antlered stags which indicates that they were shooting for meat. Hunters can be encouraged to take females for meat should there be future open seasons where the total take is substantially larger.

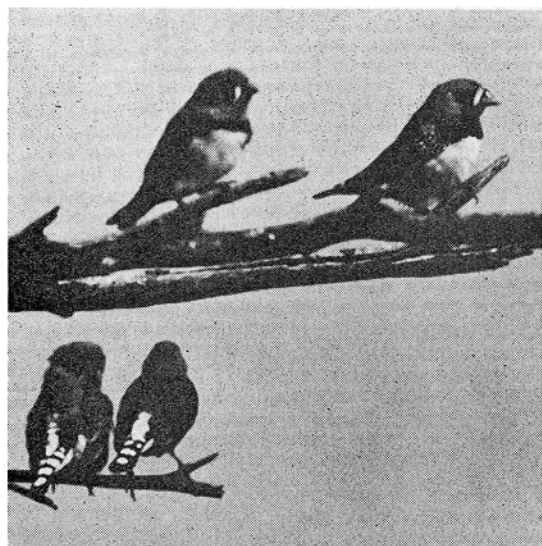
Despite some controversy, the Service regarded it as a successful exercise to control a hitherto illegal sport.

The landholders concerned were initially opposed to the season; it is possible that, when their fears of wholesale shooting on their properties were not realised, they now view the open season concept as an effective means of reducing shooting pressures.

Subsequently the Service has had reports that illegal hunting with its attendant activities of fence-cutting and slaughter of occasional domestic stock has been the pattern for 1977 when no open season was declared and prosecutions for some offences are pending.



Red kangaroo—south western Queensland



Zebra finches—popular aviary birds

Aviculture

Like sport hunting, aviculture is a controversial pursuit. The Service's task is to see that the welfare and numbers of species affected are not in jeopardy.

As with sport hunting, "hobby" aviculture is a considerable commercial activity in the State. Cages and enclosures, veterinary medicines, bird food, agricultural show exhibits, vehicles, fuel and not to mention the birds, are costly.

To minimize illegal trapping and trafficking in scarce birds, the maximum penalty under the fauna conservation legislation was increased to \$10 000 and/or 2 years' imprisonment. Since this increase, the Wildlife Management Section has been inundated with enquiries from aviculturists, many desiring the Service to regularise what in most instances constitute minor breaches. Staff shortages make it difficult to rectify these matters quickly. On the other hand, there are some serious offences involving the illegal collection, keeping and trading of fauna that are receiving more detailed enquiry.

Already some prosecutions have occurred and significant penalties obtained, mostly facilitated by co-operation from the Police Department.

During the year, 174 aviaries were registered.

Wildlife Ranger Research and Extension Work

In conjunction with routine field visits several rangers have undertaken field projects in their own right or working with officers from Research and Planning Branch.

Two papers have been published as follows:

- Weaver, C. M. (1977) Birds of the Cairns foreshore. *Operculum* 3:119-124
- Johnson, P. M. (1977) and Bradshaw, I. R. (1977) Rufous rat-kangaroo in Queensland. *Qd. Agric. J.* 103:181-183.

Currently a field study on wedge-tailed eagles in south-western Queensland is being conducted by the ranger at Charleville.

The following activities are extracted in summary from a typical quarterly report of one of the rangers; these indicate the style of extension work being done: Visiting and lecturing schools; discussions with graziers and graingrowers associations; lectures to the Institute of Technology; film shows to high schools; consultations with Department of Primary Industries officers; consultations with local police.

The Service appreciates the versatility successfully demanded of these officers and the long additional hours volunteered by them to achieve results.

Legislation

Important amendments to the *Fauna Conservation Act* 1974-1976 were made during 1976-77. These increased the maximum penalty for an offence to \$10 000, or two years imprisonment, or both, and gave wildlife rangers power to arrest.

Now, upon sufficient evidence being available, major smugglers of native fauna can be arrested and court proceedings implemented immediately.

These two new enactments have strengthened the deterrent capability of the Wildlife Management Section. A specially designed training seminar was organised by the Queensland Police Department at the Queensland Police Academy, Oxley, where rangers were instructed on the use of arrest powers. All rangers attended.

The co-operation that the Service has received from Commissioner and staff actively associated with this instruction was exemplary, and gratitude is expressed for this.

The bridled nail-tailed wallaby, rediscovered since earlier legislation, was placed on the permanently protected fauna list.

Royalties on fauna were upgraded to levels more in proportion with present day selling values.

Offences

While it would be the Service's desire only to educate and remonstrate, certain offences occur which are judged to warrant prosecution.

The following details show results of this law enforcement role for the year:

Taking protected fauna	13
Keeping protected fauna	7
Illegal movement of fauna	2
Shooting in a sanctuary	3
Illegal dealing in fauna	1
Total	26

Action taken as follows:

Prosecution	10
(Fines \$1 410—Royalty \$290)	
Forfeiture of rifles, etc.	2
Warnings	7
Pending	7
Total	26

Parks and Reserves

The philosophy behind the concept of a national park in America has been well expressed by Freeman Tilden—"It is the management of the land for the perpetuation of the country's natural and historic heritages untarnished by invasion or depletion other than that of invincible time".

There is a unique quality in this philosophy which represents one of mankind's most noble and unselfish concepts. The Secretary for Public Instruction, speaking in the Queensland Legislative Council on 29 November, 1906, in a debate to provide for national parks said: "This measure simply follows in the wake of the southern States and the United States of America in attempting to create a national park".

In the 1972 annual report of the United States council on environmental quality it is expressed thus: "The national park idea is considered unique not for the objects preserved but for the concept that a nation would decide that it is in common interest of all its citizens to set aside millions of acres for their natural and cultural worth, excluding industrial, agricultural or residential developments that might impair continuance of the areas in or near their original state".

From this flows the most important principle of national park management—the permanent preservation of the natural condition (as it states in the Queensland legislation) so that the parks remain unimpaired for future generations to enjoy.

The implementation of this principle is difficult. Those whose vision and foresight led to the promulgation of the legislation or the dedication of a particular park do not remain to protect it. The Service inherits this trust and the responsibility to represent the interests of all future generations as well as those presently using the park. Conflict of interests arise and, where a proposed use seems likely to impair the natural values of the park for future users, the decision must be made in accordance with the principle of preserving the park. It can be difficult, however, to persuade someone who can see immediate benefit that a national park is indeed a place where present profit must be foregone in the interests of preserving for the future.

Problems also arise where legitimate and normally-accepted uses begin to impair the natural values merely through the amount of use. This is a problem facing all park authorities today and it is especially serious in Queensland because of the limitation of available funds for park maintenance.

Visitor Facilities and Recreation

The Service is responsible for the day to day management of national parks, environmental parks and fauna reserves. National and environmental parks are managed so as to preserve their natural condition while providing recreational opportunities that are environmentally compatible with the park resources and which reflect sound management policies. The management of these areas constitutes the greatest single item of Service expenditure with the greater proportion of this being concerned with the provision and maintenance of visitor facilities.

In deciding what facilities should be provided and how funds should be allocated throughout the State, the Service is mindful of changing public

demands for outdoor recreation. In recent years there has been a rapid increase in the use of camping facilities on the national parks. Facilities at Carnarvon and Girraween National Parks are being upgraded and consideration is being given to formalising camping at Mount Elliot National Park. However, it is unlikely that the reserves controlled by the Service will be able to meet the full demand for this activity. It has been the experience of this Service's officers that many of the people wishing to camp on national parks do not necessarily require the special values of undisturbed nature and would be well satisfied with simple facilities provided on areas which may have been subjected to some considerable disturbance and yet still retain a rural or bushland character. While the Service has an important role to play in providing country camping facilities it is inevitable that much of the demand will have to be met by other landholders. Private properties have an unrealised and profitable role to play in this regard.

Because of its involvement in outdoor recreation, the Service is also aware of major problems associated with the provision of a satisfactory and comprehensive range of recreational opportunities. It has been requested by Local Government Authorities to provide recreational facilities where these will mainly be used by people residing outside the particular Shire. Shires are reluctant to bear the cost of recreational developments for non-Shire residents. However, outdoor recreation requires regional planning and financing as for other major services (such as transport, water supply and power reticulation). The National Parks and Wildlife Service can continue to assist by providing some form of State and regional overview but greater co-operation between Local Authorities and the various State Government Departments concerned with recreational planning and services needs to be fostered.

Construction and Maintenance

The Service faces a critical and deepening problem with respect to the programming of works on national parks in the State. As a logical progression, and in response to public demand and pressure, the Service has continued development works (Loan Funds) through the construction of new visitor facilities as extensions to those existing, or in new areas where their provision is considered necessary. However, with the completion of each new development project, there is an on-going maintenance cost (Revenue Fund) which must be met if the standard and condition of facilities are not to decline.

Although budget restrictions have historically been a problem, a high standard of visitor facilities is now demanded for the public enjoyment of numerous national parks throughout the State. These facilities range from the mere provision of a receptacle for rubbish to major projects such as the construction of information centres and bitumen road access. Each facility is carefully designed for maximum public utility and minimum impact on the natural environment.

In meeting the high cost of providing and maintaining these facilities, the Service aims to enhance the accessibility of the natural environment to all mankind, both present and future, thereby contributing to a universal understanding and appreciation of nature.

The following is a list of facilities established on national parks to 30 June, 1977.

Brisbane Region Parks

In this region the problem of inadequate revenue funds for maintenance work was most evident. The region includes many long-established parks which attract ever-increasing visitation from the large population of south-eastern Queensland. Parks such as Cedar Creek Falls at Tamborine Mountain suffered appreciable deterioration from heavy public use during the year. In particular, a major problem on most parks is maintenance of minimum acceptable track standards.

The most significant project in the region was the completion of an office and visitor information centre at Girraween. This will certainly improve the administrative arrangements at the park and will also allow display material and brochures to be housed within easy access of the public. An additional campground has been provided and an amenities block constructed in an attempt to alleviate the visitor pressure being placed on the existing campground.

Picnic facilities were improved at Springbrook and Cunningham's Gap, and the construction of a formal car parking area is proceeding at Queen Mary Falls. The Service was fortunate in acquiring the old Springbrook school which adjoins the national park. It is being progressively modified to make it suitable for a "school group" environmental study centre.

A regional staff conference was held at Warwick on 24-25 November, 1976 and was attended by all park overseers, as well as the Regional Superintendent and the Branch Director. This was a benefit to all and will be the first of an on-going series of similar regional meetings.

Vandalism and reported serious breaches remain minimal throughout the region, considering the large numbers of people visiting the parks. A big factor in this is undoubtedly the high standard of facilities provided and the prompt attention given to repairing any damage which is caused.

The biggest problem is that of enforcing the prohibition of dogs and other domestic animals in line with the policy adopted throughout Australia for national parks.

Facilities provided on the national parks of the Brisbane region are as follows:

Maiala: 2 ha picnic area with toilets, tables, shelter sheds and water. 7 km track.

Jolly's Lookout: Toilets, tables, shelter sheds and water.

Boombana: 0.5 ha picnic area with toilets, tables, shelter sheds and water. 14 km track.

Manorina: Picnic area of 1 ha which includes toilets, tables and water. 3 km track.

Binna Burra (Lamington): Picnic area with shelter shed, toilets, picnic shed, tables and barbecue. 108 km track (Lamington total).

Burleigh Heads: Toilets and lookout. 3-8 km track.

Natural Bridge: Two picnic areas with picnic tables and fireplaces. One area contains toilets, a shelter shed and water. 2 km of walking track with one 100 m creek walk extension.

Springbrook, Warrie, Gwongorella Border Parks: 4 picnic areas with shelter sheds, septic toilets, picnic tables, fireplaces, water and lookouts.

McDonald (Tamborine): Small picnic area, tables, shelter shed, water and barbecue. 1.5 km track.

Witches Falls (Tamborine): Facilities in this area are toilets, shelter shed, water and barbecues. 5 km track.

Cedar Creek Falls (Tamborine): 2 ha picnic area which includes barbecues, tables, toilets, shelter shed and water. 5 km track.

Macrozamia Grove (Tamborine): Picnic area 0.25 ha.

Palm Grove (Tamborine): 0.5 ha picnic area, tables and water. 10 km track.

Joalah (Tamborine): 3 km walking track. Pit toilets.

The Knoll (Tamborine): 1 ha picnic area with barbecue, toilets, shelter shed and water. 3-2 km track.

Mount French: 0.25 ha picnic ground with toilets, tables, fireplaces and water. 1 km track.

Mount Barney: Pit toilets and 1 hiker's hut.

Girraween: Picnic area of approximately 5 ha with water, toilets, barbecue, tables and dressing sheds. 13 km of graded walking track. 5 ha camp grounds with amenities block.

Cunningham's Gap: Picnic area of approximately 2 ha with toilets, shelter shed, and fireplaces. Camp ground 2 ha. 10 km graded walking track.

Queen Mary Falls: 1 ha picnic area with shelter shed, toilets, tables and fireplaces. 3 km graded walking track.



Walking tracks take visitors to many spectacular features of national parks

Gympie Region Parks

The region has seen considerable activity during the year. A special Commonwealth compensation grant has been allocated for the development of facilities on Fraser Island National Park to total \$500 000 over four years. Substantial effort has been deployed toward ensuring that these monies are spent in accordance with sound management objectives.

Visitor pressure is escalating rapidly at Cooloola, and this is another area where efforts are continuing with the aim of arriving at a suitable plan of management. Improvements were made to the existing campground at Freshwater Creek, and considerable progress was made on campground and general facility development at Double Island Point in conjunction with the phasing out of illegal huts in the area. Rehabilitation will need to be one of the major management activities at Cooloola for some considerable period of time.

Noosa National Park, another coastal park only a short distance from Brisbane, suffers considerably from over-use and maintenance expenditure is necessarily high. Major roadworks completed this year comprised a vehicle park with a sealed circulation road to alleviate the high maintenance commitment needed for the old car-park.

Picnic facilities were improved at Kondalilla, Mapleton Falls, The Palms, Crows Nest, and the Bunya Mountains.

An office/storeshed was constructed and a ranger's residence is near completion at Woodgate. This will greatly improve administrative and public access problems at this park which increases in popularity each year.

A co-operative venture between the Service and the Mundubbera Shire Council saw facilities constructed and road access improved to the Auburn River Falls National Park. This park is remote from the general deployment of Service field staff and the Shire Council's help in establishing a picnic ground and a walking track is most welcome.

Facilities provided on the national parks of the Gympie Region are as follows:

Cooloola: 0.5 ha picnic ground with toilets, garbage bins, barbecues and water. 1.5 ha camping ground with toilets, garbage bins.

Noosa: 0.5 ha picnic area at Main Gate. Barbecue, tables, seats, rubbish bins, toilets, dressing shed. 0.3 ha picnic ground at Tea Tree Bay—barbecues, rubbish bins, seats, toilets, tables. 0.3 ha picnic area at Laguna Lookout—rubbish bin, shelter shed. 11 km track.

Kondalilla: Picnic area 0.7 ha with tables, fireplaces, seats, pit toilets and shelter shed. Approximately 5 km of graded walking track.

Mapleton Falls: 1 ha picnic area with shelter shed, tables, barbecues, pit toilets and 1.4 km track.

Bunya Mountains: Dandabah picnic area 3 ha with toilets, tables, barbecues and water. Paradise picnic area 0.1 ha with tables. Westcott picnic area 0.3 ha with tables and barbecues. Cherry Plain picnic area 0.3 ha with tables. Koonawarra picnic ground 0.6 ha with toilets and tables. Dalby Road picnic ground 0.2 ha with tables and barbecues. Dandabah camping area 1.2 ha with

toilets, showers, barbecues and water. Koonawarra camp ground 0.4 ha with barbecues, water and toilets. 20 km of walking track.

Ravensbourne: 1 ha picnic area (north-western corner) with toilets, tables and barbecues. 2 ha picnic area (south-western corner) with shelter shed.

Crows Nest Falls: 2 ha with fireplace, barbecue and tables. Camping ground combined with picnic area. 3.0 km walking track.

The Palms: 0.2 ha picnic ground with fireplace, barbecue, water and toilets with a walking track of 0.7 km.

Rockhampton Region Parks

Despite abnormally lengthy periods of poor weather, there was substantial visitation to all parks in this region. An extensive works programme is planned for Carnarvon, including an office/visitor information centre, a ranger's residence, and worker's barrack accommodation. Wet weather and delays in the supply of materials have inhibited progress.

Projected works on other parks in the region progressed well during the year. Off-shore island national parks received considerable attention.

Toilets were constructed at Sawmill Bay on Whitsunday Island. Other work included track construction, development of picnic grounds and the erection of signs. Islands included South Molle, Brampton, Gloucester, Shute, Long, Lindeman, the Capricorn/Bunker Group and Newry Island and the Keppel Islands. The M.V. Shearwater which patrols the islands in the southern portion of the region out of Rosslyn Bay underwent a major engine overhaul and was out of service for a time. Otherwise regular patrols of all islands have been increased and will continue.

On Conway Range National Park, improvements to the camping area, including access, were effected and further work was undertaken on walking tracks. This park is becoming increasingly important as the Service's "gateway" to Shute Harbour and the Whitsunday Islands. Eungella experienced increased visitation, and substantial work was carried out to improve camping and picnic facilities. All parks had maintenance problems and Eungella was an area where this was most pronounced. Limited maintenance funds, coupled with commitment to a full development works programme, resulted in less than adequate maintenance. Significant lengths of graded walking track, the subject of expenditure on past development programmes, are now badly deteriorating. Costs to rehabilitate some lengths will be high.

Picnic facilities were improved at both Bluff Point and Cape Hillsborough with further walking track extensions realised at the latter. It was projected to install a store shed and office at Seaforth; however, this has had to be carried over to the next financial year because of land acquisition problems.

Eungella: Five picnic grounds. Broken River 3 ha with toilets, tables, barbecue and bins. Sky Window 0.5 ha with barbecue, shelter shed, bins and table. Poineer Valley 0.5 ha with table and bin. Pease's Lookout with toilets, tables, barbecue and bin. Finch Hatton Gorge 0.5 ha with toilets, tables and barbecue. There are also two camping grounds—Broken River 0.75 ha with toilets,

fireplaces, tables and bins; Crediton Creek 0.25 ha. Length of graded walking track 26 km.

Conway Range: Picnic ground 0.5 ha with tables, bins, barbeque and water. Camp ground 1.2 ha with water, showers, barbeque, bins and tables. 4 km of graded walking track.

South Molle Island: Picnic ground at Paddle Bay 2 ha with barbeque, fireplace, tables and bins. 12 km track.

Long Island: 10 km graded walking track.

Brampton Island: Picnic ground 0.2 ha with tables. 10 km track.

Lindeman Island and Little Lindeman Island: There are four picnic grounds about 0.1 ha in area. Two of these have tables. Length of walking tracks 10 km.

Whitsunday Island: Sawmill Bay picnic area 0.1 ha with tables, barbeque, bins and water. Also a 0.1 ha camping ground with tables, bins and water.

Shute Island: Picnic ground (100 m of shoreline) with table, barbeque and bins.

Seaforth Island: Picnic ground 0.1 ha with table and fireplace. Length of graded walking track 0.8 km.

Cape Hillsborough: Two picnic areas. One is 1.5 ha in size with water, toilets, barbeques, tables and bins. The other (Hidden Valley) is 0.3 ha in size with tables and barbeques. Length of graded walking track 5.5 km.

Newry Island: Picnic ground at south-western corner is about 0.5 ha in size and has tables, barbeque, water and bins. Length of graded walking track is about 1.5 km.

Rabbit Island: Two areas are used as both picnic and camping areas. These are about 0.2 ha each with barbeques and bins.

Bluff Point: Picnic area about 2 ha in size with tables, barbeques, water and 2 km track.

Pinnacle Point: Picnic area about 1 ha in size with litter bins and barbeque.

Double Head: Litter bins.

Heron Island: 3 km graded walking track.

Carnarvon: Picnic area close to natural swimming pool; waste bins. Camp ground 4.5 ha in size with toilets, cold showers, wash tubs, boilers, fireplaces and tables. Length of walking track 16.5 km.

Lonesome: Picnic area 0.2 ha with shelter shed, table and toilets.

Cairns Region Parks

A new regional office was established at 1 Lake Street, Cairns, in mid-June after a full year in which the Regional Superintendent had to work from his private residence. This change has alleviated many of the administrative and public access problems which had previously existed, but the lack of clerical and typing assistance persists.

Development work in the region has progressed satisfactorily although with the increase in material costs and restrictions in funds several projects had to be carried over to the next financial year. A ranger's residence was completed at Mount Elliot

in June and should be occupied in early July. This will greatly assist in the management of the area along with the additional facilities established there, including the installation of a water supply for campers and the erection of a store shed. A lookout platform and picnic facilities were established at Barron Falls National Park.

Significant track work was carried out on Hinchinbrook Island with the valued assistance of the 3rd Task Force, R.A.R. This track construction comprised a timber boardwalk through a mangrove community which allows easy public access with minimum undesirable effects on the environment.

A temporary office was established in the town of Chillagoe to act as a reception and information area for visitors to the caves. Further cave access work was carried out including the installation of steel ladders, safety rails, concrete paths and steps, and electric illumination to enhance the visual experience available in these cave systems.

Improvements to worker's accommodation were carried out at Palmerston and Chillagoe, and a new set of barracks was completed at Mount Spec. The water supply at Jourama Falls was extended, and picnic facilities were improved or extended at Mossman Gorge, Donna Cave (Chillagoe), Mount Spec, Hinchinbrook Island, and Wallaman Falls. Further walking tracks were constructed at Mount Spec, Magnetic Island and Hinchinbrook Island.

Essential maintenance was carried out to facilities on most parks although staff and fund shortages found the Region's resources spread thinly.

The region suffered from excessive wet weather conditions during January and February and considerable damage occurred. Most of the damage was subsequently repaired although the access road to Mount Elliott still remains in bad condition.

The incidence of vandalism has been high, and has included theft of 55 m of safety railing from Crystal Creek, damage to toilets at Jourama Falls and Palmerston, theft and damage to fireplaces and tables at Mount Elliot, damage to picnic facilities at Davies Creek, Josephine Falls, Mossman Gorge, and Palmerston, damage to unprotected caves at Chillagoe and Mungana, and damage to landings at Lake Eacham and Lake Barrine. The problem of vandalism in the region seems insoluble; detection of offenders is difficult unless by chance they are seen at the time of the offence. In one such instance, the penalty awarded was \$250 fine plus \$250 cost of restitution.

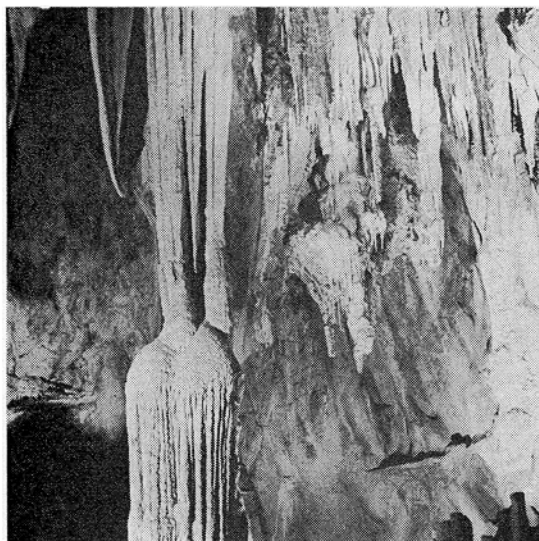
Fire continues to be a management problem, particularly on Magnetic Island and Mount Elliot. Firebreaks are prepared where possible, but lack of suitable equipment is a barrier to proper control.

Encroachment over park boundaries by surrounding landholders represents a major problem for the region as pressures on the land resource increase.

Magnetic Island: Picnic areas at Balding Bay and Arthur Bay with tables, barbeques and bins.

Mount Elliot: Alligator Creek picnic area and camping area with tables, barbeques, fireplaces, toilets, shelter shed and swimming area.

Mount Spec: Paluma picnic area with fireplaces, barbeques, tables, shelter shed, toilets, walking tracks and lookouts. Little Crystal Creek picnic area with tables, barbeques, toilets, walking tracks and swimming area.



The Donna Cave—recently lit with electric lighting

Jourama Falls: Picnic grounds and camp grounds are combined in an area of about 2 ha with tables, shelter shed, toilets and barbecues.

Wallaman Falls: Picnic area (about 1.5 ha) with shed, tables and barbecues. Camp grounds cover an area of about 1 ha with water provided. Lookout and walking track.

Lake Eacham: Picnic area about 0.5 ha with tables, taps, barbecue, toilets, shelter sheds, bathing shed and swimming facilities. Track around lake.

Davies Creek: Picnic area on south side of Davies Creek.

Mossman Gorge: Picnic area (about 0.5 ha) with tables, fireplaces, water, pit toilets and lookout. Short walking track.

Mount Hypipamee: Picnic area (approx 0.5 ha) with toilets, tables, fireplaces and water. Walking track.

Lake Barrine: Picnic area with toilets, tables and a jetty. Walking track.

Palmerston: Picnic area with tables, fireplaces and toilets. Length of track 11 km. Camp grounds.

Green Island: Beach side areas and tables. Walking track.

Josephine Falls: Small picnic area. Walking track.

Forty Mile Scrub: Roadside area. Table and fireplaces.

Barron Falls: Lookout.

Millstream Falls: Shelter shed, tables, fireplace and toilets. Walking track.

Chillagoe Caves: Two parking areas and toilets. Extensively developed cave access and lighting.

Hinchinbrook Island, Dunk Island, Wheeler Island, Coomb Island, Smith Island, Bowden Island, Hudson Island, Gould Island, North Brook Island, Tween Island, Mid Island, Purtohoi Island, Kumboola Island: Facilities on islands include barbecues and tables. 10 km track on Dunk Island. 4 km track on Bicton Hill, Clump Point.

Fire Control

The Service has accepted its responsibilities in controlling fires on its estate and assisting with fire control on adjacent areas. Since its inception the Service has been fortunate in that it has not been required to contend with serious bush fire seasons characterised by heavy commitment of manpower and other resources normally required for day to day running of the park. Subject to limitations of finance, attempts are being made to provide adequate fire-fighting equipment at each administrative centre, but it is anticipated that this objective will be achieved only after a period of two years. In the meantime, a series of serious fire outbreaks could strain Service resources to the utmost and subject the Service to justifiable public criticism. A calculated risk has been taken deliberately: that is, to spread the load of developing fire control ability over several years (hoping that no major fire season occurs in the meantime) rather than divert manpower and funds immediately which would have resulted in significant deterioration of other services.

Productive co-operation with the Department of Forestry in control burning on some coastal parks was carried out.

Search and Rescue

During the past year 15 people, in four separate incidents, have become lost in the southern end of Lamington National Park. These incidents attracted considerable public attention and involved participation of private citizen volunteers, the police force and the Army who gave of their time and effort.

These incidents should be seen in relation to the total number of people who have visited this park, estimated to be in excess of 45 000 people per annum and in relation to a long-established policy of management for Lamington. The administration of this park is based on two major management zones. The first of these comprising the northern section of the park, has been provided with a 150 km system of walking tracks that are evenly graded and well maintained, and this area is used by most park visitors. The southern section of the park which has been managed as a wilderness area to provide recreational opportunity for those people who wish to experience nature on nature's terms, free from the influences of contemporary man. This is where people have got lost, but investigation of each of the incidents reveals that the main contributing factors were inexperience and foolhardiness.

There is a small but significant group of people who enjoy the challenge of bushwalking in such wilderness areas and who are entirely competent to do so. Problems arise when others less competent attempt the same walks. To develop the southern part of Lamington with constructed tracks and sign posts would result in the problem being transferred elsewhere, as bushwalkers seek other areas to provide a wilderness experience and ill-trained people follow.

The Service believes that there is merit in continuing to manage the southern part of Lamington National Park as a wilderness area and is now taking measures which seek to educate visitors about the potential risks of entering the area unprepared and without experienced leadership. It is anticipated that publicity given to these incidents will assist in discouraging irrational use of this park.



The green ringtail—Atherton Tableland

Management and Planning

The Service is aware of the need to develop management plans to guide the long-term development and use of the State's parks and reserves. Park planning involves the identification of problems and the gathering of information about resources which leads to the recognition of park values, the description of management objectives, and the development of strategies so as to provide for the best future for the parks. Management plans provide a long-term co-ordinated framework for decision making which can be understood by the public and by management staff. Past and (predominantly) present management decisions have of necessity been made on an *ad hoc* basis, though in accordance with sound management theories tempered by a sympathetic understanding of the requirements of a particular park. However, in the face of the increasing and changing demands that are being made on the parks, the increasing areas requiring active management, and increased staff, many of whom do not yet have a long-term experience of the problems of the parks under their control, it is increasingly important to prepare sound management plans.

Plans currently in preparation are for Cooloolo National Park, Whitsunday Islands and Fraser Island National Park.

Regional Administration and Staffing

At the second of the bi-annual regional superintendent's conferences in May 1977, discussions were held to consolidate boundaries for regions in Brisbane, Gympie, Rockhampton and Cairns.

While the only office actually established at the present time is Cairns, it is envisaged that the Rockhampton superintendent will be in an office shortly. The Brisbane and Gympie offices are scheduled for completion in 12-18 months' time.

While these senior officers, each with the responsibility of one quarter of the Service estate in Queensland, are progressing steadily in the regionalisation programme, the lack of any clerical assistance is slowing the programme.

As at 30 June, 1977, the national parks field staff comprised:

- 4 regional superintendent rangers
- 4 district rangers
- 39 ranger overseers
- 47 gangers and ranger workmen
- 2 launch skippers
- 1 electrician.

National Park Rangers

Each of the four regional superintendent rangers has a district ranger to assist in the work of the region. These rangers will be stationed in areas apart from the superintendent and specifically as follows:

- Cairns Region—Atherton
- Rockhampton—Mackay
- Gympie—Maryborough
- Brisbane Region—Binna Burra,

Wages Staff

Despite increasing visitation pressure and a general public expectation for better facilities in national park areas, there has been little increase in wages staff in the last 12 months.

There are two launch masters, located in the Cairns and Rockhampton regions. A qualified electrician is employed for the work of illuminating limestone caves at Chillagoe.

The loss of Forestry Department equipment and expertise, especially in road maintenance capability and emergency services such as fire-fighting, is being felt increasingly as roads deteriorate and bushfire loads increase in numerous park areas.

Law Enforcement

During the year 48 apparent breaches of the regulations were reported mostly involving interference with vegetation. There were three prosecutions, while 41 warning letters were sent and action is pending on the remaining matters.

A continuing problem is that of unauthorised structures on national parks. There have been a number of illegal huts on Cooloolo National Park, and while some have been removed following demands from the Service, others still remain. The legal procedure where the owner of such a structure is unknown is complex, and this is holding up demolition or removal of the remaining structures.

Meetings and Conferences

Branch officers attended the following meetings during the year:

Seminar on "Forests and People: Management for Recreation and Aesthetics". University of New England, Armidale (Mr M. Harris). The principal lecturer of this school, Mr R. M. Sidaway, Head of Recreation Information Branch of the Countryside Commission of Great Britain, lectured to senior officers on his return to Queensland, before departing for England.

Fire Management Conference, Adelaide (Mr P. Ingram).

Research and Planning



The Research and Planning Branch is responsible for scientific research and strategic planning. It provides the bulk of the technical input on the qualities and the quantities of the native fauna and flora and the natural landforms of Queensland and on methods of conservation of these natural resources.

Base facilities from which to conduct the widespread field work are established at Townsville and Warwick; additional facilities will need to be provided in outer Brisbane if the normal expansion of effort, presently centred on Yeerongpilly, is to proceed. In the meantime, emphasis is being given to construction of ancillary research facilities. Enclosures for experimental purposes, and workshops, are now properly established at Pallarenda in Townsville, and those at Hermitage near Warwick are being improved.

The staff of 43 Branch officers utilize other Service facilities, notably at Emerald in central Queensland, in the course of protracted field work that provides current information on the State's natural resources.

Funds have been augmented by external grants-in-aid that are designed to provide more information than would otherwise be possible. Thus seven major programs have been expedited through substantial grants; these cover continuing fauna surveys in south-eastern and south-western Queensland, and a new fauna survey in this series based on McIlwraith Range on Cape York Peninsula, and continuing long-term studies on sea turtles, red kangaroos and native orchids.

In consequence, twelve scientific papers appeared in print during the year and some 14 others were submitted for publication; furthermore, 17 special reports were prepared for general use. More than a dozen additional papers were refereed for personnel outside the Branch.

The Branch Director, Dr H. J. Lavery, was elected President of the Royal Society of Queensland for 1977-78. Mr C. J. Limpus, Zoologist, undertook an official tour of U.S.A., West Indies and Costa Rica during July-September 1976 to study sea turtle and alligator research programs; during the visit he also presented on invitation two papers to the Fifth International Symposium on Animal, Plant and

Microbial Toxins held at San Jose on 8-13 August. Mr W. J. F. McDonald, Botanist, was awarded the degree of Master of Agricultural Science from the University of Queensland.

Branch officers continued to present Service technical advice to instrumentalities and organisations whose participation is an integral part of nature conservation in this State. Such bodies included State Government Departments (e.g. the Coastal Management Investigation Innisfail-Mossman Steering Committee of the Co-ordinator-General's Department), Commonwealth Government Departments and Agencies (e.g. as Consultant to the Australian National Parks and Wildlife Service), Local Government authorities (e.g. Beaudesert Shire Council Land Use Planning Study), educational institutions (e.g. Queensland Institute of Technology Advisory Committee on Applied Biology), scientific societies (e.g. Royal Society of Queensland Brisbane River Symposium Committee), private institutions (e.g. Royal Australian Ornithologists Union 1976 Annual Congress Organizing Committee). During much of the period 11 October-17 December, one officer



ABC film crew in action

was involved in the Committee of Enquiry into the Future of Moreton Island.

A review of Branch activities to date has endorsed the functional value of the 4 Sections established. Details of their activities are given below.

Field Studies

The purpose of this Section is to obtain a comprehensive, fundamental knowledge of the "pristine" situations presently applying to the native fauna and flora and the natural landforms of Queensland. Investigations are of two types—comprehensive surveys, and autecological/synecological studies of species or forms warranting more detailed attention. All biological studies are related to populations and population behaviour and thus tend to be long-term.

Surveys

Fauna

The series of exhaustive fauna surveys of Queensland proceeded satisfactorily. Substantial progress was made in the year through completion of the Bulloo Shire (arid zone), Central Highlands, and the Kilcoy Shire (closed forest) surveys. The former survey, in particular, has provided much new information on species distribution in this State. Surveys continued in Taroom Shire, Charters Towers District and upper Mitchell River. Another projected survey—McIlwraith Range (closed forest) was commenced, the fourteenth in this series, while successful exploratory visits were made to the Diamantina Shire (including Simpson Desert National Park).

Flora

Vegetation and floristic surveys continued principally in the Moreton Region, where field work was completed for the production (in conjunction with the Queensland Herbarium) of a detailed 1:100 000 map based on the Murwillumbah sheet containing Lamington National Park and others. Much attention was given to proposals to assess flora resources in the context of proposed legislation; this perspective has received scant attention in Australia.

Landforms

Classification and mapping of the landforms that constitute the landscape and scenery of Queensland proceeded with several pilot exercises—Wide Bay/Burnett Region as an exercise at an appropriate scale, and Fraser Island as a specific, detailed project. This work should gather impetus with the appointment of appropriately trained staff. In the meantime, techniques involving Landsat imagery and low-altitude aerial photography continue to be investigated in collaboration with other authorities.

Specific Investigations

Particular studies are still concerned more with fauna than with flora or landforms; again, only acquisition of properly trained staff can provide a balance of sound knowledge in these latter areas. Examples of comprehensive investigations in progress during the year are given below.

Kangaroos

Major emphasis is on monitoring populations of the grey kangaroo (*Macropus giganteus* (Shaw)); a routine schedule of skull-collecting from shooters has been implemented, and payment made for the services provided, so that a uniform input effort can be anticipated regardless of seasonal conditions. Current results clearly reflect sound populations, with a high selectivity for males. On the longer term, the effects of the major 1965 drought on populations is still readily discernable through the absence of appropriate age classes. Farther west, greater account is being taken of movements of kangaroos; some 700 red kangaroos (*Megaleia rufa* (Desmarest)) have now been marked individually with collars, and these are being followed through the contiguous arid regions of central Australia. Field studies take special account also of the other 22 species of kangaroos occurring in Queensland; enclosure colonies of many of these continue to be maintained. Results of note were presented for the yellow-footed rock wallaby (*Petrogale xanthopus* Gray) and the red Stradbroke wallaby (*Macropus welsbyi* (Longman)). The material was provided towards the resolution of the species of rock wallaby (*Petrogale* sp.) occurring near Proserpine.

Possums and the Koala

Detailed field studies of the species of possums inhabiting the closed forests between Townsville and Cooktown proceeded; interesting records included some 15 observations of the long-tailed pygmy possum (*Cercartetus caudatus* (Milne-Edwards)) feeding on white apple *Eugenia cormiflora* F. v. M. on Atherton Tableland, and the occurrence of this little-known species as far south as Mount Spec. Enclosures to keep all species at Pallarenda were constructed.

Radiotelemetry work on the koala commenced during the year; six animals were tracked with radioreceivers and much valuable new information on diet and movements was gathered.

Rodents

Field investigations of the population behaviour of the water rat (*Hydromys chrysogaster* (Geoffroy)) proceeded on the Darling Downs. Plans were made to extend the work into central coastal Queensland. Studies of other species (*Melomys* and *Rattus* species) extended to consideration of new "remote sensing" techniques whereby plotting of movements could proceed without disturbing the animals; initial examination of the theory is promising.

Waterbirds

Superficial monitoring of water-bird populations continued, with large populations of such game birds as the black duck (*Anas superciliosa* Gmelin) clearly in evidence. The more detailed appreciation of the population behaviour of the brolga (*Grus rubicundus* (Perry)) proceeded to give results of importance to the understanding of wetland habitat in north-eastern Australia. At the same time, data on the growth and moulting habits of the ecologically-similar magpie goose (*Anseranas semipalmata* (Latham)) provided comparable material towards knowledge for the management of these wetland resources.

Turtles

The 1976-77 turtle nesting season was the ninth successive year of monitoring at Mon Repos rookery, the largest on mainland Australia.

Rookeries elsewhere throughout north-eastern Australia, to Crab Island in the Gulf of Carpentaria, also were visited. A total of 29 027 turtles—green turtles (*Chelonia mydas* (L.)), loggerhead turtles (*Caretta caretta* (L.)), flatback turtles (*Chelonia depressa* Garman), leatherback turtles (*Dermochelys coriacea* (L.)) and hawksbill turtles (*Eretmochelys imbricata* (L.))—were tagged; this included 2 416 green turtles marked during a 4-day visit to Raine Island, the foremost rookery of the green turtle in Australian waters. Recoveries and recaptures throughout the Indo-Pacific region were made.

Crocodiles

In contrast with the regular sightings of freshwater crocodiles (*Crocodylus johnstoni* (Kreff)) at the Lynd River study area (96 animals in 19 kilometres of river), few have been located in study sections of Walsh, Mitchell and Scrutton Rivers (59 animals in 35 kilometres of rivers and lagoons). Animals continued to be marked throughout and recapture data are beginning to accumulate.

Data Bank

This Section functions to maintain and co-ordinate all field data-collecting exercises. It has evolved from the increasingly evident need to store material responsibly and to retrieve data, including from the literature, effectively.

Liaison was maintained with the Australian Ecological Survey (C.S.I.R.O.) and the Australian Biological Resources Study (Commonwealth Department of Science) and all field survey data were stored according to the standards prescribed by the latter Study. Retrieval trials based on bats and frogs continued to be tested.

A major requirement of the Section concerns taxonomy and nomenclature; close liaison is maintained with the Queensland Herbarium and the Queensland Museum so that reliable identification services may be maintained. Reference zoological and botanical collections were developed further and provided the means of compiling lists specifically for Service purposes e.g. of plants of Bunya Mountains National Park. Some 100 specimens recorded at Simpson Desert National Park included four species previously not known for Queensland—

Dicrastylis costelloi Bailey (a vervain),
Newcastlia spodioptricha F. v. M. (a vervain),
Senecio cunninghamii DC (a groundsel), and
Grevillea nematophylla F. v. M. (water bush).

A zoologist and a botanist serve as professional taxonomists and their projects illustrate topics of general concern.

Bats

Morphological studies—in the first instance of the species of *Tadarida* (mastiff bats)—were advanced in an attempt to substantiate information within a group of mammals comprising some one-quarter of all the continental mammalian fauna.

Orchids

During the course of a joint National Parks and Wildlife Service—Australian Orchid Foundation survey of Cape York Peninsula in September 1976, sixty-six species of orchids were recorded including, importantly, *Eulophia pulchra* (Thou.) Lindl., *Pomatocalpa marsupiale* (Kraenzl.) J. J. Sm.,



Variegated gecko

Taeniophyllum malianum Schltr., *Thelasis carinata* Bl., and *Dendrobium canaliculatum* var. *nigrescens* Nich. x *D. johannis* Reichb. f. (natural hybrid). A substantial proportion (27 per cent) of these is restricted in distribution within Australia to the area between Coen and the Pascoe River.

Land-use Planning

The objective of this experienced group of officers is to examine all field data to constitute appropriate nature conservation land-use plans.

Techniques are being developed along two lines. Firstly, a systematic study of all lands in a region—Wide Bay/Burnett—has been commenced; mapping of landforms has been almost completed, and plotting of vegetation themes and fauna habitat types developed. Following this, an analysis of land systems is being undertaken so that capabilities of the land for alternative purposes can be adequately appreciated. The long-term objective is to provide a set of substantiated maps of the major natural resources of each region of Queensland, and to allocate priorities to the reservation and management of these "pro national parks".

A second, concurrent approach is to examine the numerous *ad hoc* reservation proposals as these appear before the Service. When desirable, officers of the Management and Operations branch also help with the work. The following table sets out

the state of these proposals as at 30 June, 1977; it still remains too early to establish the comparative success of the recommendations made in this way. It is obvious, however, that some have little more than "rest area" potential; and the Service is becoming more selective as its officers gain experience in field assessment. It will be seen that the work is expanding compared with the 1975-76 figures (parenthesised), though some of the original back log has been taken up.

State of proposal	No. (1975-76)	Per cent (1975-76)
Inherited by National Parks and Wildlife Service as already evaluated but not yet gazetted reservations	115 (179)	17.1 (30.6)
Evaluated by Research and Planning Branch field staff	178 (73)	26.4 (12.4)
Presently being evaluated by Research and Planning Branch field staff	139 (65)	20.7 (11.1)
Still to be evaluated	241 (269)	35.8 (45.9)
Total	673 (586)	100.0 (100.0)

In a similar manner, assessments of areas subject to proposed environmental impact by development have been made and technical advice to minimize effects offered on projects ranging from the effects of mining and mineral processing, to those of power transmission lines, urban development and sewage disposal.

Management Research

The recognition and reservation of natural ecosystems is technically less demanding than the prescription of methods to maintain these in the face of man and his activities. A series of complex projects, requiring the development of new approaches and new techniques, has now been implemented; the following are some examples.

Introduced Animals

Data on both fallow deer (*Dama dama* (L.)) and red deer (*Cervus elaphus* (L.)) continued to be collected, with an extensive collection of female red deer as the current major activity. Results so far indicate that most adult female deer calved last year and are pregnant again this year (contrary to local folklore). A start was made to study effects of cattle grazing on natural environment with an introductory report covering Mazeppa National Park.

Fire

A further evaluation of the effects of fire on a wildlife population was conducted in the arid lands of central Australia, and results are being analysed for publication.

Farming Disturbance

A set of farms on the eastern Darling Downs was established as an intensive study area to examine effects of agriculture principally on the game species of stubble quail (*Coturnix pectoralis* Gould) and brown quail (*C. ypsilophorus* Bosc.); the importance of roadsides, fencelines and headlands in retaining perennial populations already is evident.

Forestry Disturbance

The effects of land clearing and pine plantations, and selective logging and silvicultural treatments, are being studied on some spurs of the southern Great Dividing Range. Appreciation of the effects of the activities, and determination of the means of minimizing these, was greatly aided by the attachment of Forestry Department zoologists to this Section. Collaborative projects and interpretation of data based on wider experience will provide sound management formulae.



Turtle research at Heron Island

People

A pilot trial was begun with the aid of a post-graduate student of Geography Department, University of Queensland, into the biological, economic and social viability of the small nature conservation reservations in the Moreton Region. Because there are many of these small areas in this heavily populated region, the results of this work are awaited with interest.

Branch Extension

It is necessary that scientific staff relate results not only in precise technical terms but also in broader fashion for general Service uses. Natural history articles were prepared. A film "Following the Fallow" was issued about the life of the fallow deer in the Stanthorpe area. Three documentary films of a 6-film series presently being made in collaboration with the Australian Broadcasting Commission were completed; release of the series is scheduled for mid 1978. An introduction was made to a series of reference audio-visuals proposed to illustrate all aspects of Branch research and planning activities.

At the individual level, in the turtle research program alone some 40 students and teachers participated in the field to the extent of 77 person-weeks, an estimated 11 000 visitors observed the field research at Mon Repos, and lectures were given also in the course of this field work at Heron Island.

Conferences of technical staff were held at Hermitage and Brisbane from 16-20 May (rangers), and at Brisbane from 30-31 May (senior Branch officers).

Outside the Service, officers attended a range of technical meetings, symposia and workshops, as follows: "Focus on our northern Heritage" Wildlife Preservation Society of Queensland, Cairns, 5-7 July; Meeting of Australian Systematic Botany Society, Brisbane, 12 August; Annual Congress of the Royal Australian Ornithologists Union, Brisbane, 20-23 August; "Science museums and the future", Australian National Commission for UNESCO, Brisbane, 16-19 November; "Development of criteria



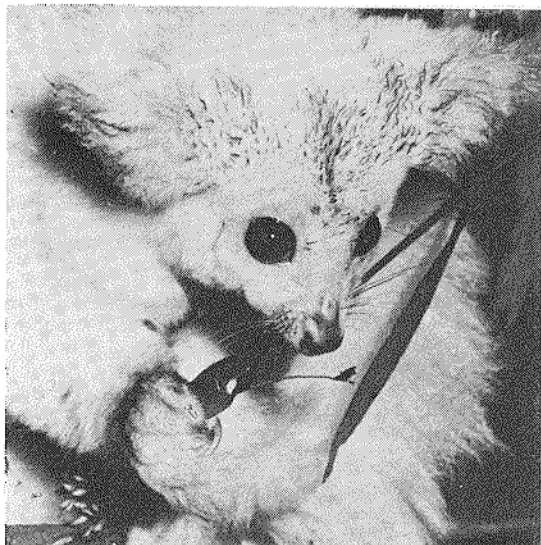
Population study of bro'gas on the Townsville town common

for selection of national parks and nature reserves", C.S.I.R.O. and Universities of Queensland and North Queensland, Brisbane, 26-27 January; "Aerial monitoring of fauna populations", Australian National Parks and Wildlife Service, Canberra, 23-25 February; Meeting of Great Barrier Reef Marine Park Authority Consultative Committee, Heron Island, 29 March; Annual General Meeting of Australian Mammal Society, Sydney, 19-21 May; and a "Workshop on the effects of logging on all values of rainforests in north Queensland", C.S.I.R.O. Atherton, 7-9 June.

Officers presented reports following participation also in the CONCOM Working Groups on the National Wetlands Survey, on Endangered Flora, on Endangered Fauna, on Kangaroo Conservation and Management, and on Birds.

Official visits were made additionally by staff during the year to the Australian Museum, Mitchell Library, and the National Parks and Wildlife Service in New South Wales, to C.S.I.R.O. Division of Wildlife Research in A.C.T., to La Trobe Library and Fisheries and Wildlife Division in Victoria, and to the National Parks and Wildlife Service in South Australia.

A number of overseas and interstate research workers visited Branch staff in various parts of Queensland; the following are some of these—P. Bayliss, A. Floyd, G. Robertson and N. Shepherd (N.S.W. National Parks and Wildlife Service); T. Bergin and D. Butcher (Taronga Park Zoo and Western Plains Zoo, N.S.W.); G. Campbell and J. Grant (University of New South Wales); K. Davies (Newcastle University); Dr M. Griffiths (C.S.I.R.O. Division of Wildlife Research); R. Horne and K. Taylor (A.B.C. Natural History Film Unit); R. Longmore (Australian National Parks and Wildlife Service); Dr J. Nelson (Monash University); C. Parsons and J. Sparkes (B.B.C. Natural History Film Unit); Dr R. Primac (Canterbury University); R. Rose (University of Tasmania); Professor B. Tomlinson (Harvard University); Dr M. J. Tyler (Adelaide University); and R. Williams (C.S.I.R.O. Division of Land Research).



Greater glider—southern Queensland

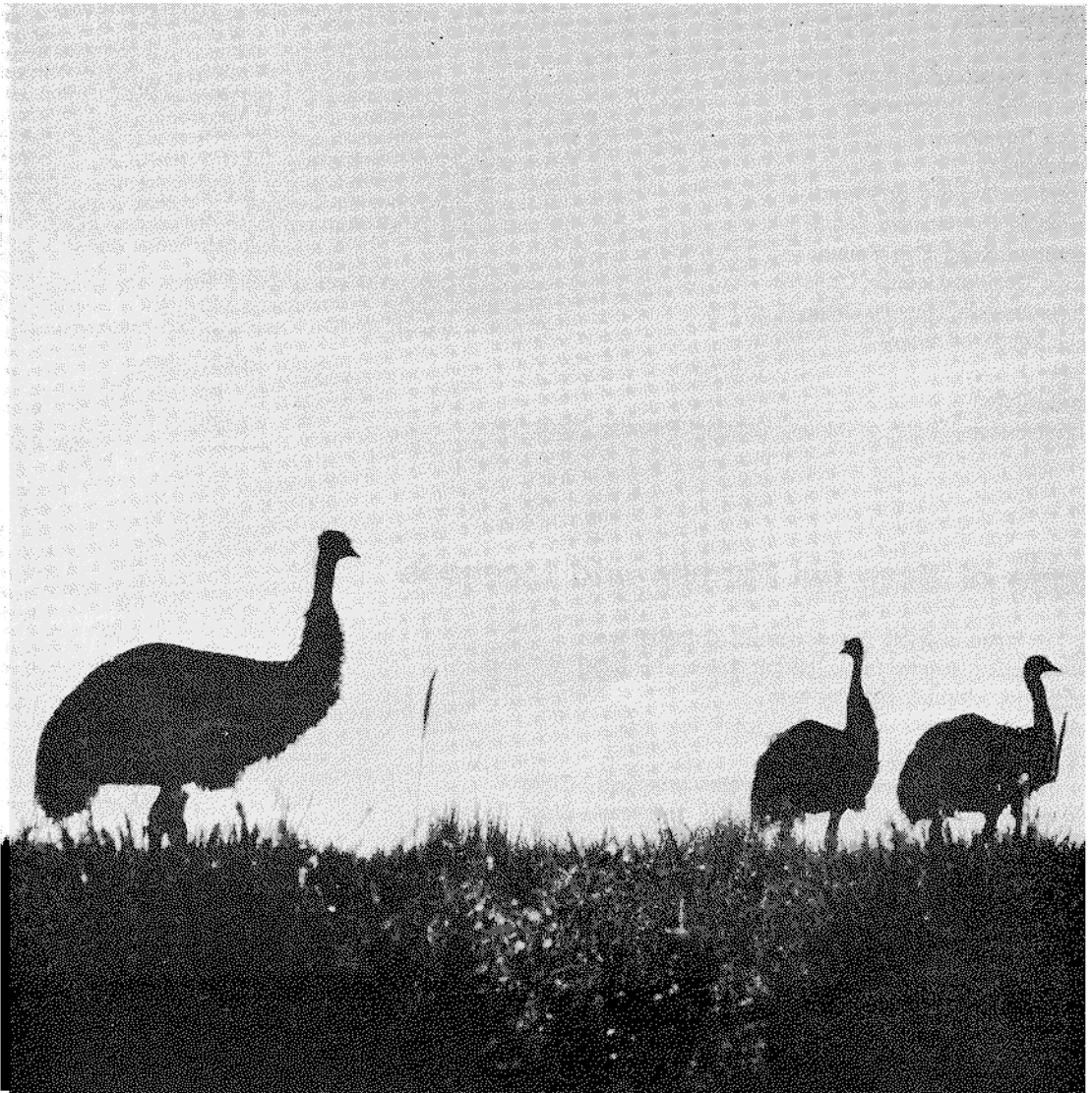
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Appendix



Receipts

	\$	\$
Fauna Permit (Kangaroo and duck)	49 541	
Sale of Tags (Kangaroo)	192 896	
Fauna Royalty	207	
Skin Royalty	52 078	
Permit to Remove or Import	4 356	
Permit to Exhibit Live Fauna	638	
Permit to Keep Live Fauna	5 810	
Fauna Dealers Licence Class A	15 588	
Fauna Dealers Licence Class B and C	1 440	
Registration of Aviary	886	
Fines	1 601	
Publications	80	
Miscellaneous—Sale of Maps, Grazing Permits (Scientific)	7 150	
		332 271

Scale of Fees for Permits and Licences

	\$
For an open season fauna permit (personal use)	5.00
For an open season fauna permit (taking for sale)	25.00
Kangaroo, whiptail, wallaby tags	each .10
Other open season wallaby species	each .30
For a fauna dealer's licence	5.00
For registration of each fauna dealer premises—Class A	100.00
For registration of each fauna dealer premises—Class B	100.00
For registration of an aviary	2.00
For a permit to keep fauna under Part IX—not for exhibition	5.00
For a permit to keep fauna under Part IX—for exhibition by a person other than the Brisbane City Council or a Local Authority	200.00
For a permit to take fauna under Part IX	5.00
For a permit to remove fauna from any place in Queensland to another place or for a permit to move fauna from a place outside Queensland to any place in Queensland—	
Birds (including aviary birds interstate) per bird	.10
Other fauna	2.00

Expenditure

Revenue Fund

Salaries	\$	\$
Contingencies—		1 066 921
Wages, Travelling expenses, maintenance and incidentals	1 271 506	
Fares, Printing, Mapping, Stores etc.	41 536	
Cash equivalent of long service leave	3 590	*1 316 632
		<u>\$2 383 553</u>

Loan Fund

Capital Works and Development on National Parks	\$	\$
Capital Works and Development on Regional Centres	599 715	
Acquisition of National Parks	100 000	
	300 000	
		<u>*\$999 715</u>

Trust Funds

Commonwealth Grants for National Parks and Wildlife Purposes Fund—	\$	
Acquisition, research, surveys etc.		525 698
National Parks and Wildlife Service Grants Fund—		
Research, Development etc.		2 455
		<u>*\$528 153</u>

* Details of expenditure shown on pages 38-40.

Development and Maintenance Works Programmes 1976-77

Overall Distribution of Expenditure

Management Unit	Maintenance	Development
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General Expenditure

Administration		
Administrative and operating costs	359 491	
Fares, Printing, Mapping, Stores	41 536	
Cash equivalent of Long Service Leave	3 590	
Technical Services		
Administrative and operating costs	49 434	
Research and Planning		
Administrative and operating costs	133 159	

Acquisition of National Parks

Cost of Land		294 678
Search and legal costs		5 322
		<u>\$300 000</u>

Management Unit	Maintenance	Development
	\$	\$
Management and Operations Branch (including Wildlife Section)		
Administrative and Operating Costs	147 064	41 816
National Parks		
Brisbane Region		
Lamington	60 341	31 333
Springbrook	24 973	10 970
Tamborine	30 185	6 507
Natural Bridge	10 142	2 692
Burleigh Heads	10 761	8 041
Mount Glorious	24 848	6 910
Mount French	—	5 872
Cunninghams Gap	18 591	1 126
Queen Mary Falls	493	7 687
Girraween	34 247	37 347
Southwood	2	—
Regional Costs—not allocated to individual parks	1 470	28 614
Brisbane Region Total	\$216 053	\$147 099
Gympie Region		
Bunya Mountains	40 780	17 616
Crows Nest	112	1 187
Ravensbourne	18 135	7 246
The Palms	181	8
Montville/Mapleton	19 699	26 587
Noosa Heads	32 425	35 092
Cooloola	2 999	11 652
Fraser Island	3 101	—
Woodgate	7 368	49 900
Robinson Gorge	41	337
Auburn River	—	3 024
Gympie Region Total	\$124 841	\$152 649
Rockhampton Region		
Brampton Island	70	—
Coway Range	14 897	15 068
South Molle Island	32	—
Long Island	30	61
Lindeman Island	39	37
Whitsunday Island	41	2 206
Newry Island	163	853
Seaforth	15 443	1 388
Eungella	6 690	7 660
Yeppoon	17 478	4 982
Keppel Island	41	124
Carnarvon	38 149	20 471
Dipperu	40	—
Heron Island	30	108
Regional costs not allocated to individual parks	237	2 125
*Mackay District Wages	29 742	18 888
Rockhampton Region Total	\$123 122	\$73 971

Management Unit	Maintenance	Development
	\$	\$
Cairns Region		
Chillagoe Caves	5 669	22 163
Eacham	6 707	7 741
Barron	869	2 800
Green Island	1 175	—
Mount Spec	6 258	9 643
Palmerston	2 537	1 524
Jourama	4 497	1 583
Ravenshoe	352	423
Mossman Gorge	150	—
Wallaman Falls	4 405	935
Magnetic Island	4 999	3 760
Mount Elliot	5 836	67 972
Cardwell	6 783	13 338
Regional costs not allocated to individual parks	350	3 357
*Ingham District Wages	24 594	20 355
*Atherton District Wages	43 201	28 586
Cairns Region Total	\$118 342	\$184 180
Management and Operations Branch—Total	\$729 422	\$599 715
Regional Centres		
Brisbane—Head Office—Photographic Library		38 407
Head Office—Aerial Photographic Library		8 304
Yeerongpilly and Moggill—Minor Works		5 153
		51 864
Pallarenda (Townsville)		
Equipment, landscaping and development of new centre		30 374
Hermitage (Warwick)		
Equipment and minor works		17 762
		\$100 000
Total	\$1 316 632	\$999 715

*Wages paid on behalf of National Parks and Wildlife Service by the Department of Forestry. Dissections to individual parks not available.

Trust Funds Expenditure for 1976-1977

Research and Planning Branch

	\$
Orchid Survey of North Queensland	1 075
Fauna Survey—Kilcoy Shire	6 081
Fauna Survey—Bulloo Shire	6 281
Queensland Sea Turtle Project	23 062
Red Kangaroo Survey—Arid Zone Investigations	8 772
Study of Bridled Nail-Tailed Wallaby in Queensland	3 702
National Wetlands Survey	826
	<hr/>
	\$49 799

Management and Operations Branch

Carnarvon Tourist Project	22 762
Girraween Tourist Project	50 309
Fraser Island Grant	3 903
	<hr/>
	\$76 974

Administration Branch

Land acquisition under the Commonwealth-State Grants (Nature Conservation) Act	400 000
Library Bequest—Estate of late W. J. R. Morris	1 380
	<hr/>
	\$401 380

Total Trust Funds	\$528 153
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