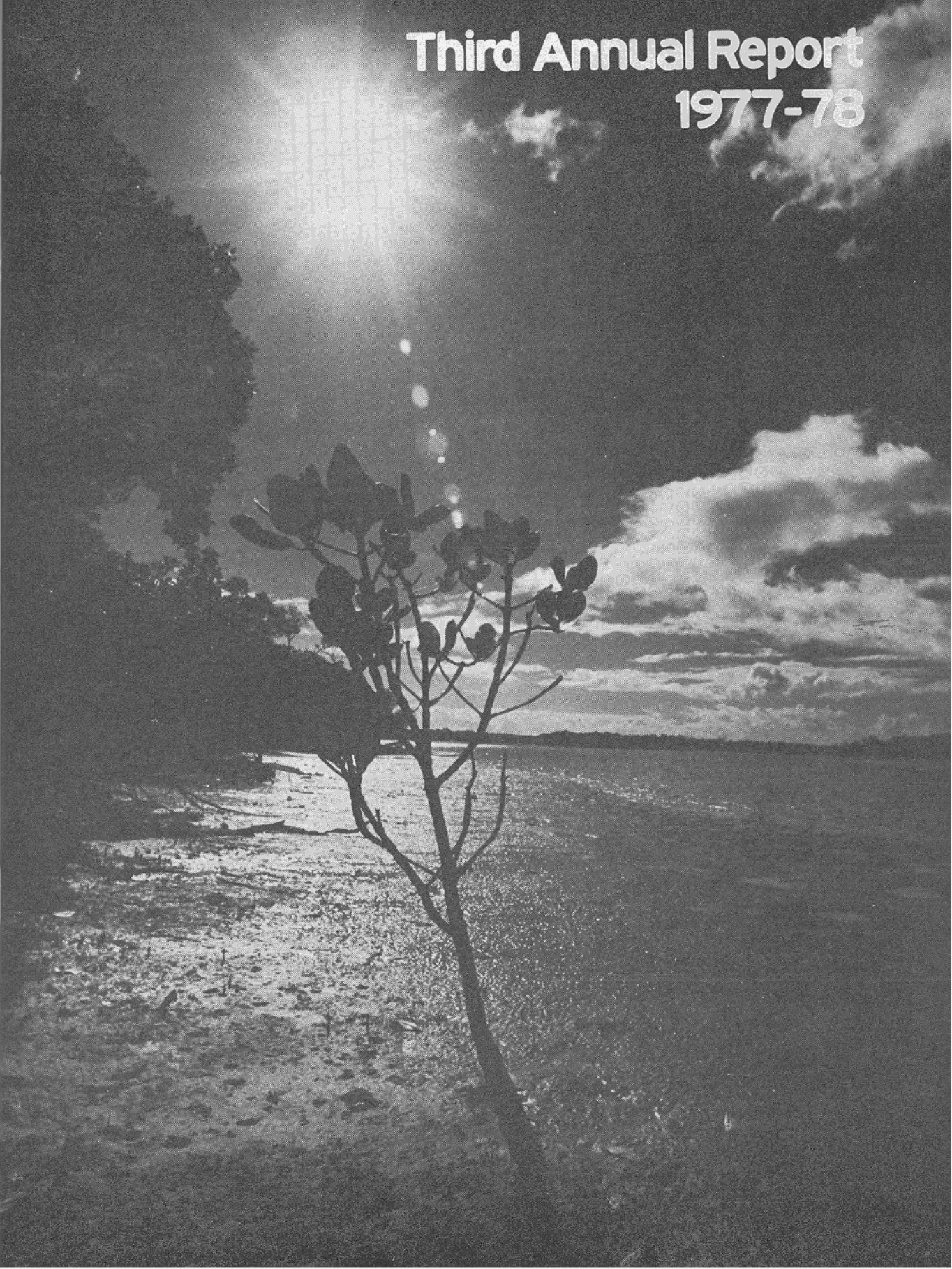


Third Annual Report 1977-78



QUEENSLAND
NATIONAL PARKS
AND WILDLIFE
SERVICE

Third Annual Report 1977-78





QUEENSLAND
NATIONAL PARKS
AND WILDLIFE
SERVICE

Dr G W Saunders,
Director

138 Albert Street
Brisbane
Australia
Telephone (07) 221 6111

13 March, 1979.


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 Third Annual Report of the National Parks and Wildlife Service.

This Report covers the operations of the Service during the year ended 30 June, 1978.

Yours faithfully,


(G.W. Saunders)
DIRECTOR

Brisbane North Quay 4000
PO Box 190



Introduction

In the Service's third year, crowded (as the earlier years have been) with events, it is easy to nominate the most outstanding one. The momentous leap in acquisition of land—almost doubling the Service estate—was undoubtedly the highlight of the year.

Many proposals, chiefly in Cape York, came to fruition over a very short span of time. Some such as Jardine River of about a quarter million hectares and the Staaten River of nearly half a million hectares, are great wilderness areas. Yet an historian would regard the 500 ha Possession Island as the major acquisition, because of its being the island from which Captain Cook took formal possession of the eastern mainland.

Details of new gazettals of national and environmental parks are listed elsewhere in this report, and the histogram on page 8 illustrates dramatically the growth pattern. I express on behalf of the Service appreciation to Cabinet and to Ministers and officers of other departments who supported major Service proposals. Many of the tenures were complex and successful gazettal is due particularly to the hard-working co-operative efforts of appropriate Service and Lands Department officers.

One of the most heartening factors in nature conservation work is the increasing awareness that to conserve a species we must conserve its habitat. This is nowhere better illustrated than by the purchase of Taunton, a property near the town of Dingo which is the prime remaining habitat of the rare bridled nail tailed wallaby.

Though it has not yet been gazetted and is thus not yet under Service management control, the purchase of the property has secured the habitat. I express appreciation of the real help given by the Commonwealth Government for the acquisition. Under the appropriate Act,

\$200 000 was given towards this purchase at a time when Service acquisition funds of about half a million dollars had been fully committed on other worthy land.

The Technical Services Section has embarked on fitting out a caravan to permit manned displays, information and educational material to be taken further afield as needed.

The Research and Planning Branch is well into the production with the ABC of a series of natural history films for television; and a book will be issued at the same time which will publicize the Service's wildlife research work. The major development in national park administrative centres has been at Lake Eacham, where on land acquired from the local authority, new accommodation and workshops have been built. The work is the first part of a major reconstruction in this area to meet increasing visitor usage.

The first buildings—two storage sheds—have been erected on Service land gifted by Miss Jessie McGilchrist at Moggill. Another major building has been started at the southern end of Cooloola National Park. This was made possible by generous funding by the Bird and Wildfowl Society, a founding member of which the Honourable Sir Thomas Hiley, M.B.E., has been the prime mover of the project.

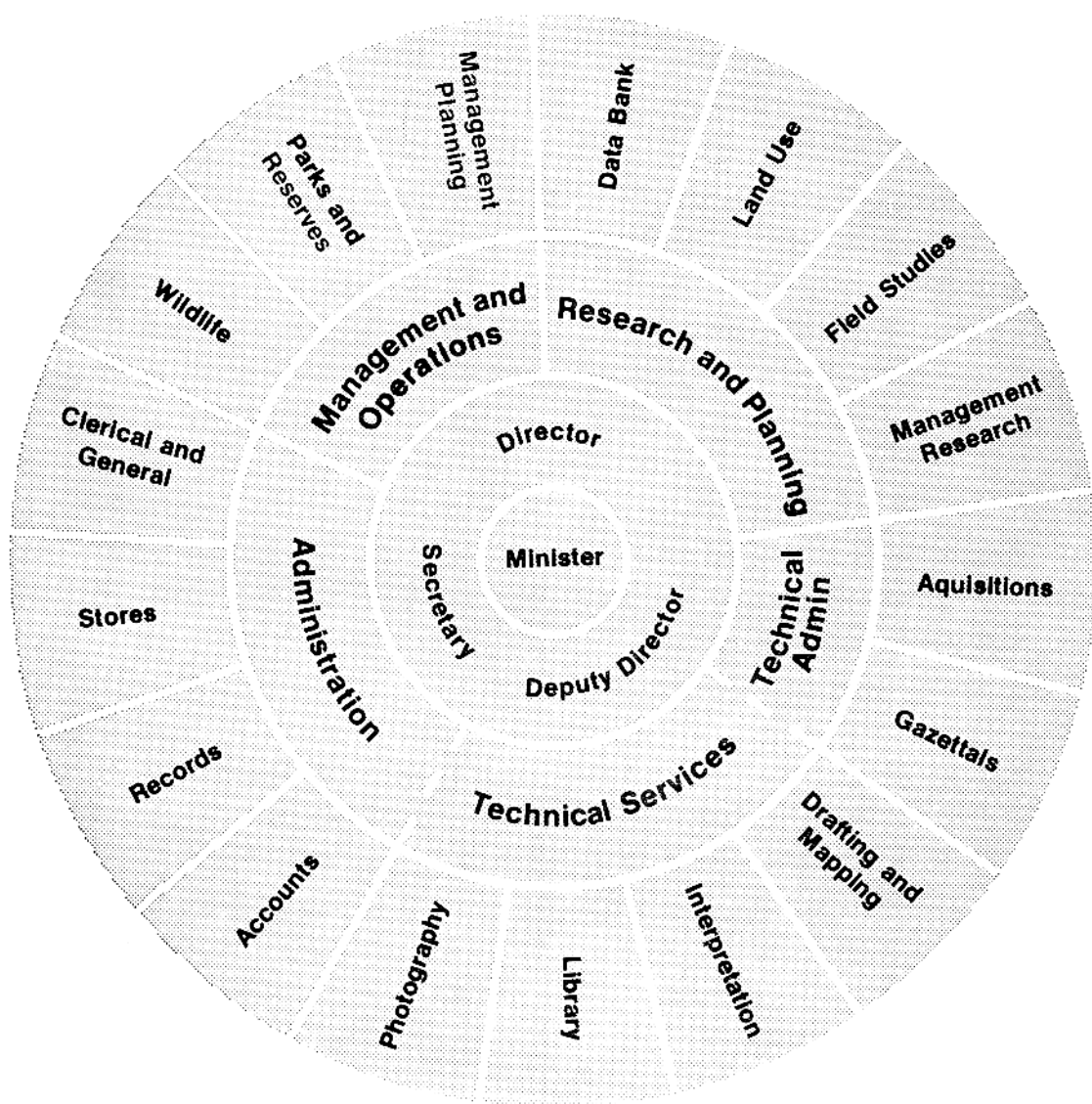
All these developments and the many others listed in the body of the report have kept staff fully occupied. Indeed, the incidental clerical work has imposed considerable strains on our administrative capacity. I record my appreciation of the efforts of all my staff throughout this momentous year of growth, and place on record my appreciation of the relationships the Service enjoys at officer level with all the other government instrumentalities with which we have dealings.

Again I find I can truly say it has been a privilege to lead such a vigorous young Service.

The Service had a major administrative change during the financial year, when it ceased to be a sub-department of Lands and was incorporated into a new department of Culture, National Parks and Recreation.

The importance of Girraween National Park to south Queensland's recreation oriented parks was highlighted in February when our new Minister, the Honourable Tom Newbery, M.L.A., opened the office/information centre. Stanthorpe Shire Council combined with the Service to make the day a memorable one. I offer thanks to our co-hosts for the success of the day.

The demand for maps, brochures and posters is ever increasing, as are the requests by public and private enterprises to participate in displays. No less than 34 new items were produced as well as 10 reprints of existing literature. Favourable comment has been made on their design, type, format and content.



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's objectives to the public.

Clerical and general

The branch has responsibility for overall supervision of Service activities and incorporates the clerical and accounting functions of the Service. Included in the branch are secretarial and clerical personnel dealing with staffing and Service organization including the Accounts Branch which has responsibility for salaries and wages, and the payment of Service accounts and related functions; Records Section, Stores and Despatch Section and other areas which deal with correspondence and services provided to the public.

Service accommodation development during the year has been significant and has included the completion of two large storage sheds at 55 Prior's Pocket Road, Moggill, on land given to the Service by Miss Jessie McGilchrist soon after our formation. As well, earth works and drainage have been completed in preparation for the construction of the next stage which is the provision of an administrative and research centre to house those staff members presently located in Department of Primary Industries accommodation at the Animal Research Institute, Yeerongpilly. The Service is deeply indebted to the Department of Primary Industries for their forbearance and consideration in continuing to allow our staff to occupy the space some three years after formation of the Service. The new shed accommodation should be ready for occupancy during the first half of 1979.

Temporary office and laboratory facilities have been added to our Northern Regional Centre at Pallarenda, Townsville, and planning is well advanced on the provision of a permanent complex which will allow for a full range of Service activities to be administered from that centre.

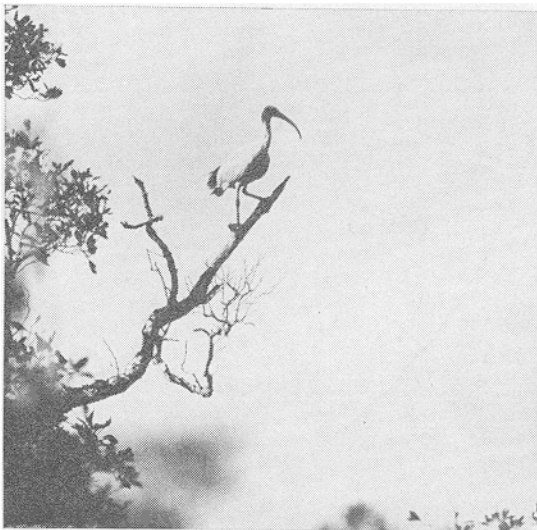
Additional office and laboratory space has been added to our centre at Hermitage, Warwick. Once again the Service is most appreciative of the

generosity of Department of Primary Industries in allowing the use of a portion of their land at that centre.

Office accommodation will soon become available to our officers located in Maryborough and Gympie and should result in improved contact with the general public. The ranger at Gympie recently moved into a public service house allocated to the Service.

Much needed additional space in head office was obtained by acquisition of an additional area on the seventh floor of the existing building. This area now accommodates the Accounts Branch.

During the year the Service acquired its own offset printing unit which is providing valuable assistance to all sections of the Service particularly in the preparation of interpretive material.





Throughout the period, continuing and increasing demand by the public and an increase in interest in the environment generally and national parks and wildlife in particular has caused increasing pressure on the Service for assistance in these areas.

The current period of economic restrictions has greatly hindered projected growth and the provision of additional services to the public. It has severely limited the intake of applicants seeking careers within the Service.

Minimal increases in staff numbers have placed even heavier workloads on staff in all centres—staff who in many instances have carried a heavy burden since the Service was established during 1975. The Service is now co-operating with the Department of the Public Service Board to initiate an organization and systems review. Resulting from action on this review, there will be an overall improvement in work flows and a streamlining of systems. Additionally the review will highlight those areas of administrative activity which require additional clerical or typing support.

It is confidently anticipated that these improvements will help the Service to cater for the needs of an increasingly large section of the community whose awareness of the need for conservation and appreciation of the environment must lead to expansion of existing facilities provided by the National Parks and Wildlife Service of Queensland.

Acquisitions and Gazettals

The main duties of this Section lie in the acquisition and gazettal of suitable lands as national park, environmental park, fauna sanctuary, etc. However, it is also responsible for many other matters including gazettal work in other spheres of Service control, e.g. fauna matters, honorary protectors and field officer appointments. The most significant gazettals during the past year have been in the Cape York Peninsula and Scenic Rim areas.

A total of 968 518 ha of land covering nine separate areas has been reserved on the Peninsula, while over 6 780 ha has been added to the Scenic Rim complex. While these gazettals have not taken in the total area originally proposed they have been a major step forward towards the consolidation of our proposals in these areas.

During the year a total area of 1 011 207·498 ha has been added to the national park estate, 542·864 ha has been reserved as environmental park, and a further nine properties of total area about 336 908 ha have been declared as fauna sanctuaries.

National Parks

Sixteen new national parks were gazetted covering about 935 182 ha.

National Park 671 Parish of Gilbert (gazetted 9-7-77) contains sloping eucalypt forest country and rainforest scrub timbered with hoop pine and associated softwoods. The area is situated near the Cunningham's Gap National Park and has an area of 126 ha.

National Park 23 Parish of Seymour (gazetted 17-9-77) comprises Possession Island and has historical importance in the fact that it is the place where Captain Cook in 1770 formerly took possession of the east coast of Australia. The island has a total area of about 510 ha.

National Park 1100 Parish of Conondale (gazetted 24-9-77) is set astride the Conondale Range and preserves some of the main scientifically important features, and contains most of the ecologically important vegetation types of the region, in the one catchment area. The vegetation consists of grey gum, ironbark, white mahogany, flooded gum, forest red gum, blackbutt and tall scrubby forest with various rainforest species. The area of the park totals about 1 740 ha.

National Park 8 Parish of Lloyd (gazetted 24-9-77) is part of the largest remaining area of lowland rainforest to be found in Australia, and yet is almost completely free from the disruptive influences of cyclonic winds and human activity. The park is situated south-west of Portland Roads and contains a large number of plants and animals not recorded elsewhere in Australia, including many New Guinea species. Apart from its scientific interest the area is aesthetically pleasing with its colourful forests, wildlife and abundant freshwater streams. (Area about 3 770 ha)

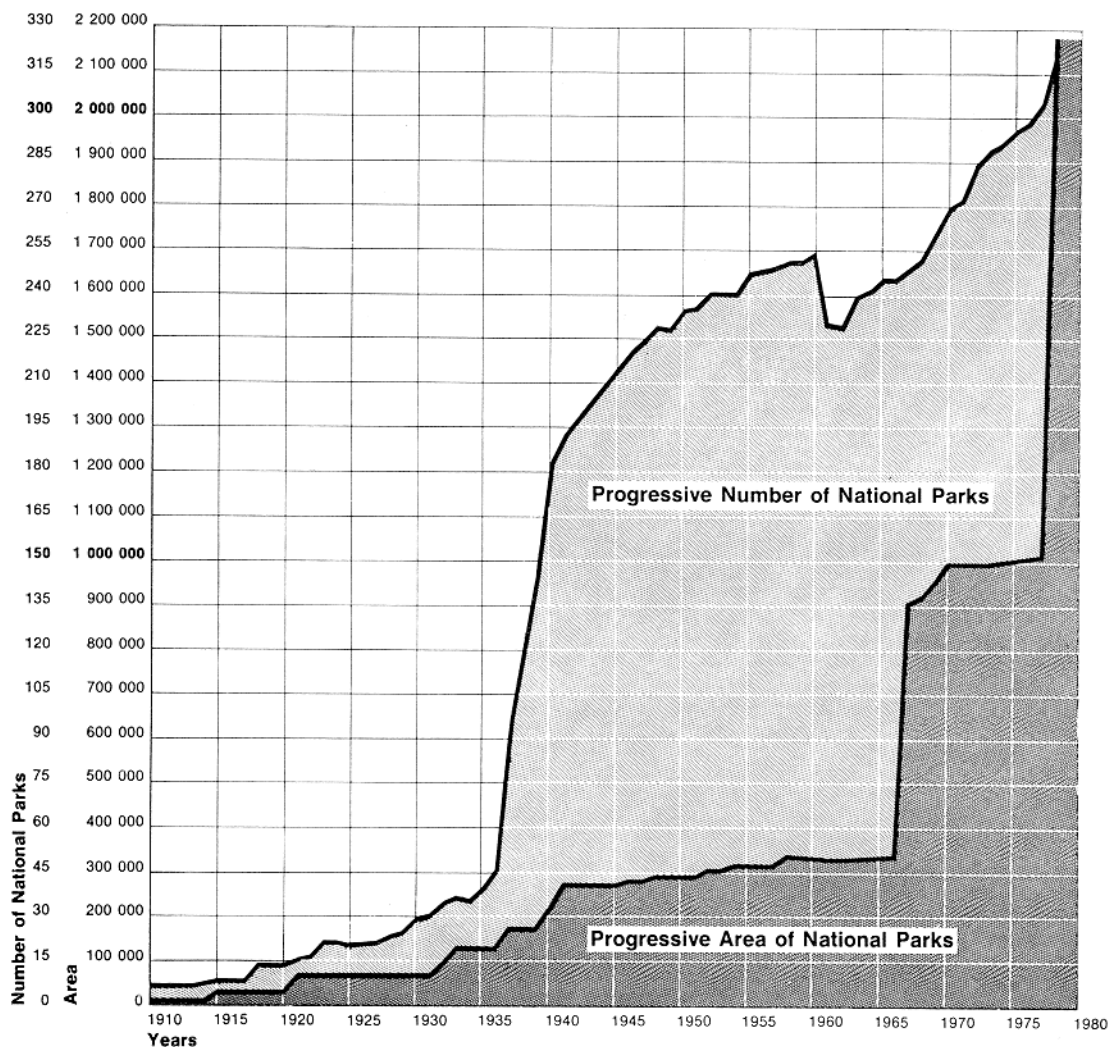
National Park 771 Parish of Meunga (gazetted 1-10-77) is situated north of the town of Cardwell and features an excellent example of wet tropical lowlands having an eastern coastal frontage of about 16 kilometres bordering Rockingham Bay. The area is highly regarded for its very scenic beach and well developed strand vegetation. The size of the park will ensure the survival of the many different habitat types and in turn provide the opportunity for the survival of a maximum number of fauna species. The area is intersected by a system of creeks and contains large areas of swamp land and fan palm forest. (Area, about 5 900 ha)

National Park 1608 Parish of Hull (gazetted 8-10-77) is situated about two kilometres north of Kurrimine extending south from Liverpool Creek and bordering the coastline for about five kilometres. It is relatively flat country with a narrow strip of densely timbered rainforest and scrub along the seafront. Behind this is a low lying swampy wet area with tea tree, palms and swamp grass, while further west the country is very sandy timbered with tea tree, wattle and grass tree. The area is about 910 ha.

National Park 893 Parish of Cawarral (gazetted 22-10-77) features Mount Jim Crow in the land that has been set aside as national park. The park fronts the Rockhampton-Yeppoon highway and features on the lower slopes of the mountain a belt of vine scrub containing a number of Moreton Bay figs whilst the balance of park is fairly flat to easy sloping country timbered with Moreton Bay ash, ironbark, bloodwood, tea tree, wattle and gum. Area is 144 ha.

National Park 5 Parishes of Bateman and Irby (gazetted 29-10-77) provides a cross-section of the woodland and grassland vegetation of the extensive alluvial plains of the lower rainfall regions of Cape York Peninsula. The area is mainly low open woodland while quality scenery is provided by the stands of riverine vine forest that have developed in the moist environment of the sandy levee banks of the Mitchell River, particularly near its junction with the Alice River. (Area, about 37 100 ha)

National Park 281 Parish of Miriam Vale (gazetted 29-10-77) features Mount Colosseum rising to a height of about 500 metres. Including in this park are stands of rainforest, hoop pine and open eucalypt forest. The park is situated about ten kilometres south-east of Miriam Vale and is popular for its recreational value. Its area is 840 ha.



National Park 215 Parish of Munburra (gazetted 5-11-77) is rugged country of high scenic value containing considerable variety in geology, soils and vegetation types. The park reserves a small sample of plateau and escarpment type sandstone scenery at its wetter range and contains vegetation types ranging from grasslands to well developed rainforest. Much of the flora is different from that found on other parts of Cape York Peninsula. The area is about 7 960 ha.

National Park 26 Parishes of Amory, Carbutt, Carden, Carnac, Cayley, Corry, Cotterell, Croft, Dering, Duckett, Filmer, Milman, and Sanamere (gazetted 5-11-77) contains within its boundaries most of the catchment area of the Jardine River which has the second largest water flow of any river in Australia. It is a wide, fast flowing stream of clear, often deep water, set in a large wilderness of the high rainfall belt. The area has a wide variety of vegetation types which includes rainforest country developed on the deeper sands of the plateau tops while elsewhere is featured scrubland, heathland and swamp forests containing vine forest species in the lower areas. (Area, about 235 000 ha)

National Park 3 Parishes of Meta, Methuen, Monson, Norton, Ormonde, Rathmore, Rayleigh and Thurlow (gazetted 12-11-77) comprises areas surrendered from Archer River, Watson River and York Downs Pastoral Holdings. The park contains broad bands of alluvial flats of the Archer and Coen Rivers which meet within it. Most of the rest of the park consists of woodland and savannah developed on the heavy clays and loams of shale and mudstone formations. The country between the two rivers consists of low ridges of sandstone with minor ironstone, carrying widespread eucalypt forest. The area is about 166 000 ha.

National Park 2 Parishes of Courtenay, Cranbrook, Duncombe, Eldon, Ellesmere, Ferrers, Holland, Huntingdon, Leinster, Lichfield, Lonsdale, Lowther, Peel, Tatton, Thurstan and Uffington (gazetted 12-11-77) comprises areas surrendered from Strathmore, Dunbar and Vanhook Pastoral Holdings. It features a multitude of creeks flowing into the Staaten River which intersects the park and forms part of the northern boundary. The park is situated in from the coast on the western side of Cape York Peninsula. It is Queensland's second largest national park at approximately 467 000 ha.

National Park 233 Parish of Clonmel (gazetted 26-11-77) is situated about 25 kilometres north-west of Monto and forms part of the Cania Gorge, an area which is renowned for its scenic walks, rugged rock formations and excellent recreational facilities. The park features a sandstone plateau, steep cliffs facing Three Moon Creek and a narrow sandstone gorge, and the area is 346 ha.

National Park 1647 Parish of Hull (gazetted 11-3-78) is situated just north of Bingil Bay and was donated to the Crown by Mr Joseph Jorissen whose action was prompted by his desire to preserve the rainforest country as a habitat for cassowaries. The area is highly regarded for its virgin rainforest and is considered a valuable park as this type of country is fast disappearing in that region. Its area is 26 ha. On twenty existing national parks, additions were gazetted which totalled about 77 920 ha.

National Park 612 Parish of Keppel (gazetted 9-7-77). This addition of about 3 ha was formerly a Fisherman's Camp Reserve situated on the western side of North Keppel Island.

The total area of the park is now about 580 ha.

National Park 737 Parish of Melcombe (gazetted 9-7-77). The additional area of 730 hectares comprises the major part of the catchment of Mount Barney Creek, which is, apart from Mount Barney itself, the most outstanding feature of the area. The park now totals about 6 160 ha.

National Park 584 Parish of Waterview (gazetted 24-9-77). This addition of about 125 hectares of steep country contains rock pools and falls along Waterview Creek. Adding this area to the existing Jourama National Park has made the location of the boundary follow more natural lines and gives a more practical boundary than the original one which cut across topographical features. The new area is 1 070 ha.

National Park 836 Parish of East Haldon (gazetted 1-10-77). This addition of about 2 900 hectares includes part of the Mount Mistake Ranges and reserves a significant area of wilderness country towards the northern end of the Scenic Rim. This park which now has its area more than doubled ensures a reservoir of untouched country for protection of rainforest species at the northern limit of the Rim where it merges into the settled Lockyer Valley. Area is 4 260 ha.

National Park 202 Parish of East Barron (gazetted 8-10-77). This area of 11 hectares was sought by the Service as an addition to the Lake Eacham National Park in order to provide a site for the establishment of office facilities, workshop and storage sheds to serve the parks in that region. It makes the area of Lake Eacham 490 ha.

National Park 694 Parish of Tallebudgera (gazetted 8-10-77). The new park area of about 18 hectares rises steeply from north to south and provides an area of scenic value for addition to the Mount Cougal National Park. The additional area contains heavy stands of blue gum, tall-wood and brush box and provides a more manageable boundary. Total area is now 674 ha.

National Park 678 Parish of Ossa (gazetted 15-10-78). By the addition of 318 hectares the area of Mount Blackwood National Park has been increased by 30%. The park is now bounded by Neilson Creek in the north and carries open eucalypt forest of bloodwood and ironbark, while less dominant vegetation species include poplar gums, brush box, coral trees, and native hibiscus with an abundance of grass trees. An area of steeply sloping timbered country which is now part of the park forms an integral part of the Mount Blackwood Massif. The area is now 1 060 ha.

National Park 453 Parish of Gundiah (gazetted 15-10-77). The Mount Bauple National Park has been increased by about 19 hectares with the area included featuring the mountain from whence the name of the park was derived. This park is situated roughly halfway between Maryborough and Gympie and has a total area of about 278 ha.

National Park 647 Parish of Rockingham (gazetted 15-10-77). By the addition of an area of 518 hectares this park now has doubled in size. The park situated inland from Kennedy Bay, is relatively undisturbed and contains high country which overlooks valuable waterfowl habitat extending into mangrove areas near the mouth of the Hull River. The area is 1 060 ha.

National Park 16 Parishes of Carree, Wathumba, Bowarrady and Moonbi (gazetted 22-10-77). By the addition of about 17 521 ha the total area of the national park on Fraser Island has been increased considerably. The new area extends for the width of the Island and adjoins what was the southern boundary of the original park. By its inclusion a small area of rainforest in the region of Lake Bowarrady ensures a fair cross-section of vegetation types found on the northern end of the Island. Total area now far exceeds that originally sought by lay conservation bodies, and covers one-third of the island. The area is 49 400 ha.

National Park 4 Parishes of Melville, Howick and Wakooka (gazetted 29-10-77). The addition of the 19 700 ha more than doubles the size of this Cape York park. The park now includes a number of important vegetation types which are not to be found within the original park. Extensive areas of heath and scrubland dominate the southern extremity of the Melville Range while two large swamps, fed by water from sand dunes, feature a full range of swamp forest types ranging from melaleuca to vine and palm forest. Present area is now 36 000 ha.

National Park 281 Parishes of Broadwater, Tenterfield and Folkestone (gazetted 5-11-77). The additional area to the Girraween National Park totalling 1 260 ha consists of areas of forested land interspersed with massive granite outcrops and some relatively undisturbed wetland. The region is noted for its wide variety of wildflowers and diversity of plant and animal life. The additional area brings the park total to 6 290 ha. Note: The next four listed areas are part of the Scenic Rim concept.

National Park 1139 Parish of Telemon (gazetted 3-12-77). The area which was amalgamated with the Mount Chinghee National Park and increased by 95 ha is very picturesque and is quite heavily timbered with hoop pine and large fig trees being conspicuous on its sloping terrain. The park now has an area of about 545 ha.

National Park 933 Parish of Alford (gazetted 3-12-77). The Jirramun National Park has been increased by an area of about 94 ha by the inclusion of some extremely rough country of scrub and forest. The timber types now on the park include yellow stringy, tallow-wood, bloodgum and forest oak while the scrub area carries a small quantity of hoop pine and various scrub timbers. The park is situated on the Queensland-New South Wales border in the region of Wilson's Peak. The park now covers 385 ha.

National Park 1050 Parishes of Alford and Clumber (gazetted 3-12-77). This area of 1 094 ha which has been added to the Mount Roberts National Park is situated on the eastern fall of the Great Dividing Range and contains numerous scenic features including high mountains, cliff faces, waterfalls, rainforest and tall grassy woodlands. The area of the park is now about 1 790 ha.

National Park 905 Parish of Clumber (gazetted 3-12-77). This area of about 1 416 ha extends south from Spicer's Peak to Mount Steamer and is formed by a steep eastern escarpment capped by a series of sharp peaks. The area offers panoramic views and forms part of the backdrop to the Moreton Region. The total park area is now 1 490 ha.

National Park 496 Parishes of Roberts and Numinbah (gazetted 23-12-77). This area of 220 ha has been added to the Lamington National Park. The land contains worthwhile examples of the wet and dry eucalypt forests of the area and was acquired under the States Grants Nature Conservation Act. The area will provide a suitable site near Binna Burra for the construction of a visitor information centre, camping area, picnic area, park administration headquarters and other public facilities. It brings the area of Lamington National Park to 19 900 ha.

National Park 212 Parish of Monkhouse (gazetted 23-12-77). The eastern boundary of the new park area is formed by the coastline extending from the mouth of Fritz Creek to Obree Point in the north. The inland boundary follows well defined physical features to where it joins the existing Mount Finnigan National Park. The addition of about 4 620 hectares contains on the coastal side of the ranges the finest examples of tropical lowland rainforest to be found south of Cooktown. This is based on height, development, species diversity, range of life forms and its open nature indicating complete dominance of the site by the forest in an undisturbed condition for a very long time, making it aesthetically very pleasing and easy to walk through. Area is now 5 630 ha.

National Park 8 Parish of Lloyd (gazetted 23-12-77). This area of about 27 018 ha on Cape York Peninsula was added to a park which was gazetted on 24 September, 1977, to form a larger unit. The area was surrendered from Weymouth Pastoral Holding and is bounded by the Pascoe River in the north extending along the coast, exclusive of an area around Cape Weymouth, to a point south of Cape Griffith. Total area is now 30 800 ha.

National Park 629 Parish of Crows Nest (gazetted 22-4-78). This addition has an area of 240 ha and was acquired under the States Grants Nature Conservation Act. It is situated about 6 kilometres east of the town of Crows Nest and is an essential component of the overall proposal in the vicinity of Perseverance Dam. This new area will double the size of the original Park and will include the rugged scenic country found along Perseverance Creek. Present area is now 976 ha.



Environmental Parks

Eight environmental parks were gazetted, and details of the parks, totalling about 543 ha are given below.

Environmental Park 67 Parish of Scoria (gazetted 17-9-77) is an area situated about five kilometres south of Thangool consisting of ironbark, box and gum forest country well grassed with spear, wire and blue grass. A steep rocky part of the area covered with some vine and scrub forms Mount Scoria. The area is about 22 ha.

Environmental Park 2832 Parish of Yeerongpilly (gazetted 1-10-77) is an area fronting Tarragindi Road and known locally as 'Cracknell's Gully'. The park supports native gum trees and consequently is a habitat for a variety of bird life. Its area is about 2½ ha.

Environmental Park 1098 Parish of Maroochy (gazetted 3-12-77) is situated between the main highway and the Pacific Ocean, south of the town of Perigian Beach. The land comprises low banksia sand ridges interspersed with open fresh water swamps. It is approximately 93 ha.

Environmental Park 377 Parish of Broadwater (gazetted 21-1-78) is situated four kilometres south-east of Glen Aplin. It is known locally as Horan's Gorge and it is very steep country with large granite outcrops heavily timbered with stringybark, gum, cypress pine and wattle. The banks of the creek which run through the gorge are mainly very steep but in places open out to small flats. Area is 293 ha.

Environmental Park 32 Parish of Bauhinia (gazetted 21-1-78) lies approximately nine kilometres south-east of Bauhinia on the Dawson Highway. The area which is covered mainly with brigalow and belah vegetation is flattish country with gentle northerly slopes. It is the only undisturbed area remaining in a largely cleared grazing district and as such is pleasing aesthetically and important as a fauna habitat. Its area is about 39 ha.

Environmental Park 283 Parish of Baywulla (gazetted 25-2-78) is an area of forest country, permanently watered by Baywulla Creek and situated about 24 kilometres north-west of Mount Perry. It is 60½ ha.

Environmental Parks 1355 and 1356 Parish of Numinbah (gazetted 13-5-78) are parks under the trusteeship of separate Councils. The areas are 28.917 and 4.456 ha, respectively. They are adjoining parcels of land on the Nerang-Beechmont Road adjacent to the landmark known as Rosin's Lookout and form part of the southern escarpment of the Beechmont Plateau. There are many popular picnic spots in the area which totals about 33 ha.

Fauna Sanctuaries

Nine fauna sanctuaries have been declared on private lands, as detailed below:

Sanctuary	Parish	Area (ha)	Date of Gazettal
Miva Station	Miva	6 591	16-7-77
Robin Hood	Blackwell, Cave, Dureboola, Maccallor, Percy, Ropewalk and Townley	126 400	12-11-77
Julius Dam	Candover, Glenvale and Whitworth	5 200	26-11-77
Donford	Dargin and Marlow	4 710	10-12-77
Pretty Bend	Eagle Vale, Mamelon and Proserpine	38 600	10-12-77
Red Lilly Lagoon	Kinyeh	215 800	21-1-78
Bowthorn	Bowthorn, Murroo, Bissett, Tain and Kibbum	129 000	21-1-78
Boreen Point	Noosa	2	21-1-78
Minamere	Alick, Minamere and Proa	24 248	21-1-78
		<u>550 551</u>	

Park proposals

Although the output of this Section is often measured in terms of the size and number of areas reserved as parks, this covers only a small section of the work done in this sphere.

It should be noted that for each area reserved as park there are many other areas which have been or are being examined to assess their value for this purpose.

As at 30th June, 1978, there were 778 proposal files, this is an increase of over sixty files for the year or more than one new proposal each week. Ways are being examined of overcoming this backlog of work. It is becoming clear that regional office examination to set priorities is going to be essential.

During the forthcoming year it is hoped to finalize a number of major national park proposals as detailed below.

- Russell and Mulgrave Rivers
- Ella Bay
- Severn River
- McIlwraith Range
- Blackdown Tableland
- Cape Tribulation
- Extensions to Robinson Gorge National Park
- Scenic Rim Proposals
- Extension to Girraween

The Annual Report for the Department of Forestry will give details of new areas of State Forest declared during the year. These are automatically Fauna Sanctuaries.

Purchases during the past financial year are presented below:

Portion	Parish	Purchase Price	Purpose
Archer River Pastoral Holding		\$40,000	National Park
97, 99, 100, 101, 181, 182, 183, 193, sub. 1 of portion 23, resub. 2 of sub. 2 of portion 23	Gundiah	\$40,000	Extensions to Mount Bauple National Park
130, 131, 12, 125, 124, 87, 57v, 70, 54v, 49v, 59, 134, 135 and subdivision 1 of portion 48v	Tenterfield	\$200,000	Extensions to Girraween National Park
156, 191, 144, 192, 130	Folkestone		
1 and subdivision 2 of portion 5v	Weale	\$40,000	Environmental Park, Lake Broadwater
81	Tenterfield	\$31,950	Extension to Girraween National Park
25	Walton	\$203.136*	Habitat for Bridled nail-tailed wallaby
1, 8, 2	Ettrick	\$76,796.67	Extension to Cape Cleveland National Park
Occupation Licenses 73 and 500 (Townsville district)			
180	Numinbah	\$32,500	Environmental Park—Park of Turtle Rock
11	Jinnbinbar	\$12,000	Extension to Sundown National Park
192	Gundiah	\$8,000	Extensions to Mount Bauple
188	Gundiah	\$5,000	Extensions to Mount Bauple
Survey costs		\$19,429.76	
Legal fees		\$1,949.94	
* \$200,000 provided by Commonwealth Government under Environment (Financial Assistance) Act.			



Technical Services

The Section operates as a central technical unit for the whole Service. As such, it has responsibilities in the fields of interpretation (including environmental education, public relations and general information), drafting and mapping, library services, honorary protectors, natural history associations, international liaison, photography, audio visual work, public enquiries and staff training. Each of these broad categories covers a range of activities; interpretation alone includes production of pamphlets and booklets, posters, displays, guided walks, campfires, public lectures, discussion groups, film and slide shows, audio visual programmes, junior ranger programmes, art work, publication design and layout.

Interpretation is, of course, not the province of one Section. All Service staff have a responsibility to provide information for the public.

To date, the Section's interpretive activities have concentrated on national parks. However the Service, as its name implies, has a responsibility for wildlife conservation; more interpretive emphasis is now being placed on that component of our mandate.

Interpretive facilities

The Interpretive Centre at Girraween costing over \$50 000 was opened by our Minister, the Honourable T. G. Newbery in February, 1978, and a full-time Interpretive Officer, Mr M. Hockings, has been appointed to this area. The Centre at Carnarvon is still under construction. A caravan, two tents and a marquee have been acquired for accommodation, displays, audio-visual and puppet presentations.

Expertise in photography, display construction and publication design and layout was provided for all sections of the Service.

Interpretive programmes

School holiday programmes were held with the assistance of the various Natural History Associations, at the following national parks:—Lamington (Binna Burra and O'Reilly's), Mount Tamborine, Girraween, Carnarvon, Maiala, Cunningham's Gap and Bunya Mountains.

During the course of the year over 7 700 members of the public were involved in sharing interpretive activities on the above national parks. The success of on-park programmes has been aided by the production of bulletins distributed prior to the holiday period.

Brochures

The popularity of brochures and posters indicates that they can be a useful interpretive medium. No less than 34 new items were produced, while 10 reprints were done. It also indicates that an increasing proportion of the Section's budget will have to be allocated to reprinting costs.

The following titles and numbers were produced this year.

New brochures

National Parks of South Coastal Queensland	15 000
National Parks of South Coastal Queensland (Reprint)	15 000
National Parks of Central Coastal Queensland	15 000
National Parks of Northern Coastal Queensland	15 000
National Parks of Northern Coastal Queensland (Reprint)	15 000
Carnarvon Information Broadsheets (with map)	10 000
Guide to Carnarvon Rock Art	10 000
Bunya Bunya Self-Guiding Nature Walk (Revision of previous edition)	10 000
Exploring the Royal Arch Cave (Reprint)	10 000
National Parks of the Townsville Region (Reprint)	10 000
National Parks of the Atherton Tableland (Reprint)	10 000
Walking at Girraween National Park (Reprint)	10 000
Walking at Girraween National Park (Reprint)	10 000
Walking at Lamington National Park (Green Mountains)	10 000
Walking at D'Aguilar Range National Parks	10 000
Walking at Bunya Mountains National Park	10 000
Walking at Bunya Mountains National Park (Reprint)	10 000
Bunya Mountains National Park Brochure	10 000
Girraween National Park Brochure	10 000
Cape Hillsborough National Park Brochure	10 000
Chillagoe—Mungana Caves National Park	10 000
Lamington Guide, Volume 3, Number 2	10 000
Junior Ranger Letterhead Paper A5 Size	5 000
The Possum, Volume 1, Number 4	2 000
Bunya Mountains Junior Ranger Worksheet	10 000
Bunya Mountains Junior Ranger Certificates	1 000
Junior Ranger Songbooks (with and without music)	1 000
The Ranger, Vol. 10, No. 3	
Powers of Honorary Protectors	1 200
Map of Proserpine Area	700
The Ranger, Vol. 10, No. 4	700
Map of Cooktown-Mossman Area	700
The Ranger, Vol. 11, No. 1	500
Possum Posters (Reprint)	8 000
Reptile Posters	15 000
Reptile Cards (3 000 each of 12 from poster)	
Possums of Queensland Poster	10 000
Possums of Queensland Cards	7 000 x 12
Waterbirds of Queensland	10 000
Waterbirds of Queensland Cards	7 000 x 12
Litterbags	50 000
Litterbags (Reprint)	50 000
In co-operation with Management and Operations Branch	
If Dogs Could Talk	50 000
Bush Camping Permit	50 000

Publications

Technical and natural history papers published during the year 1977-78 by officers of the Technical Service's Section were:

Carter, W. (1977), *Sense and Nonsense—Senses Trail for Blind*, Aust. Parks and Recreation, November, 1977.

Mackness, B. S. (1977), *Nature in Song*, *In Touch*, 21:18.

Mackness, B. S. (1977), *Total Immersion: The Junior Ranger Program of Queensland*, *Australian Parks and Recreation*, November, 1977.

Photo Library

The Service's photographer, Mr Steve Parish, made thousands of invaluable photo records of the work of the Service and of Queensland's fauna, flora and landscapes. The photographic library has increased in size and scope in the past 12 months, and now contains some 100 000 indexed 35 mm colour transparencies. Recent additions to the library are—

- The Central Highlands covering the work of Dr G. Gordon.
- Three expeditions to the Townsville Region covering the work of Mr G. Blackman and many of the Townsville region parks.
- The Iron Range Region in Cape York.
- The South East Queensland parks and land systems.

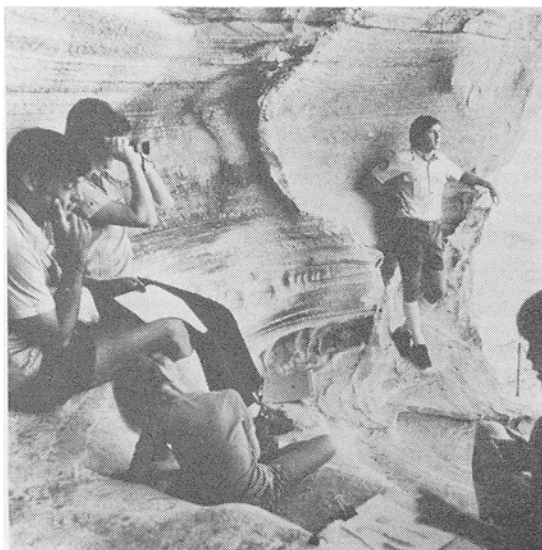
Material from the photo library has been used in the following projects:—

- Reptile, Waterbird and Possum posters and cards
- Wildflower calendar
- Green Possum poster
- Both still and motion picture footage for the A.B.C.'s forthcoming TV wildlife series 'Exploration North'.
- Synchronized single slide programmes on the following subjects:—

'Lizard Island National Park', 'National Parks of the Townsville Region', 'Bunya Mountains National Park' and 'Girraween National Park'. Others are in production. Dual projector presentations that have been produced are—'Discovering Queensland' (a presentation to music on the habitats, fauna and flora of Queensland) and 'Sea Turtles' (a presentation on the Service work on sea turtles). Further programmes are in preparation for the newly acquired ES3609 audio-visual units.

- Displays for the Girraween Information Centre, Head Office display on Lizard Island, R.N.A. Show, and 'Habitats' for the World Underwater Congress.

Several pieces of specialist equipment have been purchased for the Section, including electrosonic audio visual units, slide projectors, a motor drive camera, high powered telephoto lenses and movie projectors.



Lectures and Talks

The demand for lectures and talks to universities, schools, natural history associations, service clubs, charities and the general public far exceeded our capacity to respond. Discussions have been held with various education authorities in an attempt to rationalize certain of these demands.

Numerous talks were given to over 2 000 people ranging from the Heron Island Bird School and the Australian Littoral Society to garden clubs and the Society for Growing Native Plants.

The Senior Technical Services Officer, Mr P. Ogilvie, continued a series of lectures at Griffith University as part of the Land Resources Management course in the School of Environmental Studies. He also contributed in talks to the International Course on Management of National Parks and Reserves held in Australia. The Queensland segment of this course for representatives from eighteen different countries was organised by the Service.

Displays

Displays were organized for the following occasions.

- The 1977 R.N.A. Show—over \$13 000 was spent on the display preparation, handouts (litter bags and reptile cards), wall photos, a continuous audio-visual presentation and an electronic map depicting the location of national parks. The 'permanent' parts of this display will be used in other similar projects.
- The 1977 Mackay Show using official Service presence with pictures and handouts.
- A display at the Bank of New South Wales for National Parks Day.
- A 'Habitats' display in the City Hall for World Underwater Congress.
- A display at Eprapah Environmental Centre for World Environment Day.
- Head office space was enhanced by a display of photos from Lizard Island National Park.

Junior Rangers

The Junior Ranger scheme commenced in 1975. Since then it has expanded to such an extent that a separate programme of training and educating present and future leaders (both staff and Natural History Association members) has been initiated. The programmes contain both practical and theoretical stages. It is planned that, on completion of all required stages, the participating Junior Ranger leaders will be ready to undertake all the activities devised for the Junior Rangers so far. The national parks that have Junior Ranger programmes are: Lamington (Binna Burra and O'Reilly's), Mount Tamborine, Maiala and Bunya Mountains.

Out of a total of eighty-two individual programmes on the various parks over the last 12 months approximately four hundred children were introduced to the programme that already has 1 470 certified Junior Rangers.

To aid the various leaders carry out activities on the parks a Junior Ranger Programmes manual is being prepared. A song book of nature songs has been produced. It is envisaged that the book will contain a guide to activities, games, equipment, etc. During the latter part of the financial year a master tape of a proposed L.P. record was produced based on the songs in the songbook. When the record is pressed and made available to the public, cassette tapes will be provided for the Junior Ranger leaders. A letterhead has been designed and printed to deal with correspondence with the Junior Rangers in order to place this on a more personalised and appropriate level. In June, 1978, Mr Brian Mackness, the officer responsible for the Junior Ranger programme, was requested by the Victorian National Parks Service to lecture and advise on the setting up of their own Junior Ranger Programme. His trip proved very successful and a scheme will be set up based on the Queensland programme.

Honorary Protectors

Thirty-seven Honorary Protectors were appointed during the course of the financial year (over 150 people applied to become Honorary Protectors) but a delay in further gazettals was caused by a change in the process of evaluating applicants.

Appointees to whom the Service offers congratulations were:

Ernst Friedrich, Brian Martyn Eves, Bertram Morgan Pollard, Geoffrey Norman Coombe, Trevor Ronald Guess, Colin Dean Brine, Robert John Green, Brenton Kenneth Arnold, Graham Eric Stead, Harold Byrne Terry, James Victor Robertson, James Collins, William Arthur Deicke, James Neil McMahon, Pamela Claire Court, Graham Charles Court, Arthur Ernest Stonies, Eric Riskov, Bruce James Wagner, Vincent Edmund Smith, Walter James Jewell, Ray William Ritchie, Trevor James Greenalsh, Robert Benjamin Davis, Aloysius Roy Butler, Neville Peter Jensen, Eric Linford Reilly, Jennifer Ida Lever-Shaw, Isabella Jean Harris, Katrina Ann Harris, David Neil Harris, Beryl Thamm, Eleanor Jane Stirling, Walter Herbert Thamm, Allan Carlisle Aickin, Neville Biggs, Louis Tregellis Anderson. During the course of the year the Honorary Protector co-ordinators, Mr G. Stone and Ms F. Davie, undertook field trips to help organise regionally based Honorary Protector organisations in Townsville and Mackay.

Three editions of 'The Ranger' magazine were printed and distributed Statewide to active members so that Honorary Protectors can keep in touch with the progress of their association, any new developments and general information. Supplied with these magazines were regional maps of the Proserpine and the Mossman-Cooktown areas showing national parks, environmental parks and fauna reserves to help honorary protectors acquaint themselves with their areas.

A booklet 'Powers of Honorary Protectors' has been printed to enable all honorary protectors to be aware of exactly what powers they have under the relevant Acts. This was found desirable because of the presently fragmented nature of the legislation under which the Service still operates.

Constructive week-end activities on the parks were organised and consisted of: reconstructing the pit-saw at O'Reilly's, as an historic display, erecting signs at Lamington National Park (Binna Burra side), and removing a barbed wire fence at Crow's Nest Falls.

Meetings for honorary protectors in the south-east Queensland area have been held in the Service's head office at 138 Albert Street, Brisbane, every three months for the purpose of reviewing and organizing activities for the next quarter. Such meetings are a good opportunity for members to discuss any problems encountered during the course of their duties.

Natural History Associations

This past year has seen continuing Service support for the activities of Natural History Associations in Queensland. Since 1975 the Service has assisted with the establishment of associations at Lamington, Tamborine Mountain, Bunya Mountain, D'Aguilar Range and Magnetic Island National Parks. Total membership now exceeds 400 and is comprised not only of local residents but Statewide, interstate and international park visitors.

Association activities have included the production of newsletters and natural history information leaflets, assistance with Service interpretive and Junior Ranger programmes and the organization of public meetings on a monthly basis; all of which have done much to increase visitor and local interest in the natural environment and in park concepts.

For the first time, in March, 1978, representatives of the Service and the Natural History Associations of the South East Queensland region met together to discuss problems associated with their inter-relationship with the Service and to initiate plans for the future.

During April, two week-end workshops were held for Natural History Association members and Honorary Protectors interested in park interpretation. The first workshop at Lamington National Park (Green Mountains) was an introduction to the basic concepts and techniques of interpretation. This was followed by a week-end at Bunya Mountains National Park where participants were encouraged to explore new methods and techniques. These were organized by the Natural History Association co-ordinator, Ms Cathy Jones.

The Service spent much time and effort in establishing communication lines through which Natural History Association members and Service staff can exchange ideas efficiently. Natural History Association activities were reviewed over the past three years and investigations of similar overseas organization were made in order to determine a sound basis for future co-operation between the Service and the Natural History Associations.

Library

Over 150 new books were purchased and subscriptions to 18 new journals were commenced during the year. More than 20 books of historical interest were purchased out of special funds. Mr F. R. Allison of the Service generously donated a set of the journals 'Ibis' dating from 1946 and 'Bird Study' from 1954. The public information files on national parks were kept up-to-date and also increased in number due to the many new gazetted parks. Ms Frances Hrdina, the officer temporarily maintaining the library, has provided an efficient mailing list of new Service publications to cover 200 organizations and concerned individuals.

The film library had seven new films added and their titles are:

'Rise and Fall of the Great Lakes', 'Come into my Parlour', 'Now You See Me Now You Don't', 'The Wonderful Kangaroo', 'The Second Wave', 'The Great Coastal Dune Show', 'Leisure'.

Training

Field training programmes for Service staff and co-operating associations were held at Lamington and Bunya Mountains National Parks. A week-end each at Bunya Mountains and O'Reilly's were primarily for the enlightenment of Natural History Association members in the methods of park interpretations, however, a number of Service staff attended and the information imparted in the theoretical discussions and practical demonstrations proved of value to all. A week-end of interpretive training at Binna Burra primarily for Service staff proved similarly effective.

Guided walks and interpretive activities, which in some cases involved members of the public, were demonstrated and were then followed by critical discussions. Many good suggestions and ideas were brought up during the course of all three week-ends and these can be used to improve methods of interpretation.

A week-long in-service training programme was held at Chillagoe for north Queensland rangers. This was organised by Mr B. Carter and the whole exercise was a successful and valuable programme for the participants and the lecturers.

Sign Manual

A major project was commenced this year in conjunction with the Department of Forestry to produce a sign manual. The manual will set out the principles and procedures for signage in Queensland's State Forests, National Parks and related reserves. The manual should be completed in the next year and it is hoped that the improved design and communication standards that it brings will help both Departments in their conservation activities.

Drafting and Mapping

A card register system of the Service's estate has been commenced. This on-going long term venture is planned to give full gazetted history of each park and reserve.

Layout and artwork were completed for the two Service posters featuring possums and waterbirds. This is to be an on-going series in the same format in association with postcards of the subjects. Maps and graphs were prepared for the Service book 'Exploration North' expected to be released late in 1978.

Maps of our Parks continue to prove popular with the general public and 2325 maps were sold from Service outlets. Maps for single and two-colour brochures and the drafting of four-colour maps for Cape York Peninsula and Southern inland Queensland brochures were prepared. A 1:500 000 base map has been compiled for the Wide Bay-Burnett region on which it is planned to illustrate various aspects of the Service's interests.

Field survey work was carried out in Springbrook, Girraween, Eungella and Newry Island National Parks in connection with the compilation of brochure material.

Searches and tenure checks involving visits to other Government Departments continue to be required on a regular basis in connection with illustrating sketches relating to acquisitions and gazettals.

Work is continuing on the compilation of a basic set of instructions and general information for field officers involved in survey work.

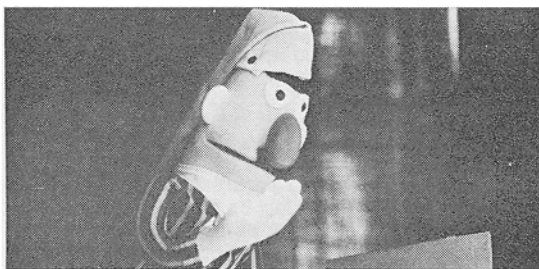
The demand, by Service staff, for aerial photographs has steadily increased. A large quantity of black and white and some colour photography have been purchased and these form the nucleus of an aerial photography library.

Our own offset duplicator and accompanying platemaker were installed but photocopying still has to be made on the Fisheries Services machine. Demands on staff are heavy.

Artwork

The position of artist was created to fill the need for designing and illustrating our own brochures, posters, cartoons and displays. The position was filled in January and the improved standard of production has already received favourable comment.

The Service still has need for the services of its design consultants, Michael Bryce and Associates, who continue to advise on corporate and design standards, and to handle specialist jobs.



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

Staffing

The past year has been a time of consolidation in which the professional capacity of the Branch has been developed to further the objectives of wildlife conservation.

The Section has evolved from a group of interim staff. The role and responsibility of the Section has been expanded and more clearly defined. Consequently the pathway is now clear for the Section to make a significant contribution to the conservation of Queensland's natural heritage.

Wildlife conservation is a complex matter comprising a number of interdependent subjects such as research, extension and law enforcement.

The magnitude of the task in relation to staffing is readily evident when it is considered that there are only seven wildlife rangers appointed to cover the whole State:

- Brisbane (3)
- Charleville (1)
- Rockhampton (1)
- Cairns (1)
- Townsville (1)—with 1 day per week at Mackay

The Service never loses sight of the fact that it is a broad-based nature conservation authority. Less than 1½% of the State is national park and probably 90% of the State's wildlife resource is on privately owned or leasehold land. Our responsibilities in engendering in landholders a sense of the importance of the State's natural heritage they hold in trust are very heavy. Much of our research effort and our wildlife rangers' duties is rightly directed to lands other than in Service ownership.

Police Unit

In 1977 priority began to shift to enforcement, owing to an apparent increase in native animal (bird and reptile) smuggling. The Service developed an opinion that a skilled group of malefactors were operating into and out of this State possibly using the State's fauna as backloading in the illegal drug trade.

Hence the State Government decided that a police unit be formed to operate under the aegis of the Director, National Parks and Wildlife Service. This unit comprises two experienced police officers, complete with field equipment such as 4-wheel drive vehicles, camping gear and 2-way radio.

Liaison between rangers (wildlife) and the police unit is developing in order that their work be integrated to ensure maximum effort.

The wildlife rangers again were given further training at the Oxley Police Academy.



Climate

Unseasonal dry conditions prevailed virtually in all important fauna districts. Surface water and vegetation in many areas were indicative of below average faunal conditions. The most spectacular effect of this phenomenon was the mass migration of pelicans to the lush coastal areas.

Honorary Protectors and Conservation Groups

Contact has been maintained with honorary protectors and conservation groups at Brisbane, Townsville, Toowoomba, and Ingham. These activities include honorary protector seminars, and general liaison concerning offences reported by honorary officers.

Species Records

Some interesting records of mammal and bird distributions were reported during the year, and the information given to the Research and Planning Branch.

The northern nail-tailed wallaby, *Onychogalea unguifera* Gould was recorded on the Marett River, Kalpowar Station. This record was confirmed by photographs and follow-up sightings.

The spectacled hare wallaby, *Lagorchestes conspicillatus* Gould, was recorded on Birthday Plains, Bathurst Heads Station. This record was confirmed by the production of the skull of the specimen.

Flocks of little corellas, *Cacatua sanguinea* Gould, were recorded on Lakefield and Kalpowar Stations. This record seems to be outside of the normal or expected range of the species.

Chital deer, *Axis axis* (Erxleben), were reported at Spring Creek on Conjuboy Station. This property is located approximately 180 km north-west of Maryvale Station.

A young chital stag was found dead on a property adjacent to the township of Ravenshoe. During the past twelve months, deer have been reported in this district; however this is the first confirmation of their presence.

A jabiru, *Xenorhynchus asiaticus*, on Riverview Station 80 km south of Charleville and one on Ambathala Station about 110 km north-west of Charleville were reported.

Queensland has experienced the phenomenon of mass pelican mortalities and to a lesser extent in black swans. The populations increased dramatically followed by a population crash with emaciated pelicans being found on all kinds of watercourses and storages. Various causes emerged.

(1) Post-mortems in North Queensland revealed the presence of massive infection of *Contraccaccum* sp.

(2) Botulism was recorded in the Brisbane River where mortalities occurred.

(3) Dieldrin was found in pelican carcasses in the Bremer and Brisbane Rivers.

There appeared to be no common causal factor apart from malnutrition being most commonly apparent.

Emus were often found in poor condition in south-western Queensland.

The cause of death of approximately 300 water fowl in a 40 acre lagoon running into Atkinson's Dam was established as botulism caused by *Clostridium botulinum* (type C).

It is thought that the growth of *Polygonum* sp. weed around the lagoon during the dry summer months followed by flooding and death of these plants led to a large amount of rotting vegetation in the shallow water at the rim of the lagoon. This situation provided the right conditions for growth and toxin production by *Clostridium botulinum* which requires anaerobic conditions.

Discussions have been held with the Freeway Planning Engineers of the Main Roads Department in an effort to have the proposed freeway by-pass the egret, *Ardeola ibis*, rookery at Cannon Hill. As a result of these discussions it now seems that the proposed freeway will be constructed some distance away from this rookery instead of through it.

The sport shooting of non-protected fauna such as the feral pig, cat, fox, goat and rabbit is a popular activity amongst the hunting fraternity.

Encouragement is given to sporting shooters to hunt feral animals of this nature. They (particularly the wild pig and cat) constitute an ever-increasing hazard to wildlife conservation and habitat degradation.

Aviculture

On-going discussions were commenced with the Avicultural Society of Queensland in an effort to rationalize the unsatisfactory relationship existing between that Society and the Service. The discussions held were largely exploratory and are continuing.

One result was that a representative of the wildlife section attends when deemed necessary, monthly meetings of the Society. This has resulted in a mutual improvement in relationship.

A plan is being developed to firmly determine if certain birds are suitable for aviculture. There is considerable expertise learned and taught by those experienced in aviculture and the total conservation concept may not be necessarily the correct one to follow.

Many registered aviaries were inspected during the year. On the whole, owners of registered aviaries are genuine hobbyists. Unfortunately, some of these people are providing a marketing outlet for the illegal bird trapper. The situation in some ways is parallel to that of the art collector. Stolen works of art are marketable and it is collectors who buy them.

No. of Aviary Registrations issued	437
No. of Permits to Keep Fauna issued	380
No. of Fauna Dealers Licences (Class C)	93
No. of Fauna Dealers Licences (Class B)	12

Kangaroo Industry

The kangaroo industry is in an unstable condition, and at a time when kangaroos are plentiful and in many parts of Queensland have a pest rating by land-holders. Contributing factors are the unreliable marketing channels serviced by existing dealers together with below cost of production prices being offered for skins and/or carcasses.

The significant depressing factors in the industry are the poor market management by dealers and the still collapsed American market.

No. of skin/carcass dealers (Class "A")	10
No. of skin dealers (Class "A")	18
No. of registered chiller (carcass) sites	78
No. of Open Season Fauna Permits (Taking for Sale)	1 266
No. of red (kangaroo) tags issued	681 100
No. of green (wallaby) tags issued	35 755
No. of pink (wallaby) tags issued in 1977	6 800

The gross value of the industry at shooter level is about 1.5 million dollars.

Sport Hunting

As provision is given in the Fauna Conservation Act for open seasons to be declared on some species of protected fauna, the wildlife section has been given the responsibility of monitoring and managing these open seasons and the activities of persons involved.

Open seasons are presently declared for some species of wild duck as well as quail, snipe and kangaroo.

Patrols are carried out by Rangers (Wildlife) during the open and closed seasons where shooters permits and bag counts are checked.

These are carried out on foot, and also with the aid of vehicles, helicopters and light aircraft. People found shooting out of season or without the appropriate permits are prosecuted and face heavy fines.

Sport Hunting Permits

No. of Open Season Fauna Permits (Personal Use—Wild Duck etc.)	2 614
--	-------

Hunting, both commercially and for recreation, has been conservatively estimated as supporting a 5 million dollars per year industry. This includes cost of transport, travelling and sophisticated equipment.



Zoos

Fauna Premises (zoos) continue to occupy a major part of the Section's time. These premises are becoming more important as tourist ventures and it is necessary to preserve a balance between the welfare of the captive animals and an appropriate standard for public exhibition.

Firm guidelines for the development of zoos have been determined and a working standard has been set at Birdlife Park on the Gold Coast where good liaison has been established with the Service during building of this attraction. To date, over \$1 000 000 has been invested by the entrepreneur.

An important aspect of zoo licensing is that proprietors are required to ensure that the display preserves the basic dignity of the animals. Certain species of parrot seem to be natural 'clowns' but in general circus-like displays in fauna premises are not encouraged.

Currently 22 fauna displays for public exhibition are registered and monitored. Unfortunately, most only comply to a minimum standard and only two are first class.

Despite regular supervision, one of the proprietors considered it necessary to attempt an illegal importation of exotic birds originating from the Indonesian Archipelago. Newcastle disease virus was isolated from one of the birds. An infected area embracing Cairns city and the Atherton Tablelands was declared by the Minister for Primary Industries and all the birds and poultry held at the offenders' premises were subsequently slaughtered and destroyed as a quarantine measure.

The zoo proprietor was charged and convicted and his permit under the Fauna Conservation Act was revoked.

There are three tourist facilities in the Cairns area exhibiting reptiles to the public. Regular inspections and stock takes were conducted during the year.

Estimated capital investment in zoos is about \$5 000 000 from a total of 36 establishments.

Experimental Deer Farming

There are four species of deer in Queensland:

Fallow deer	Darling Downs
Axis deer	Charters Towers
Red deer	Brisbane and Mary Valleys
Rusa deer	Torres and Endeavour Straits

All of these animals are introduced species. They are 'fauna' under the *Fauna Conservation Act* 1974-1976 and 'stock' under the *Stock Act* 1915-1976.

Red Deer

At present the National Parks and Wildlife Service, in association with the Deer Suppliers Association of South East Queensland, C/- Secretary, M.S. 16, Maleny, commenced a field project to determine the viability of red deer farming in the Brisbane River and Mary River Valleys. The project allowed a limited number of co-operators to be licensed, and this has been done. (10)

The permit issued under the *Fauna Conservation Act* 1974-1976 allowed each individual property owner so licensed, and subject to the following conditions, to take a limited number of breeding stock (20 red deer per Association member).

Conditions:

- Royalty at \$50 each is payable on any deer sold.
- Permittees are required to provide details of location and size of property, plans of enclosures and handling yards and details of fencing. Specifications for a retaining fence are suggested.
- Farming is being approved only in the present known range of the species.
- All fencing is subject to inspection, and must be approved by the Service.
- All deer are to be identified and the co-operator is required to keep records.
- The requirements of other government departments such as the State Department of Primary Industries must be met.

Deer are subject to pests and diseases. This raises considerations of quarantine and control on movement, which are the responsibility of the Department of Primary Industries.

The project will be reviewed after three years. In the meantime restrictions will be placed on the numbers of red deer permitted to be wild trapped and exported from Queensland.

Axis Deer

This species has been collected near Charters Towers on a pasture damage permit. The deer so collected have been sold interstate and royalties collected.

Rusa Deer

There was considerable interest in entrepreneur development of rusa deer exploitation in some islands of the Torres Strait. But permits were refused for conservation and quarantine reasons. The Torres Straits Council and the Department of Primary Industries did not favour the proposals.

Fallow Deer

Interest in fallow deer farming has been shown by landholders near Stanthorpe and a scheme is being developed along the same lines as that for red deer.

Scientific Collecting

Research into wildlife is assisted by the issuance of permits to take fauna. In all, seventy-four permits were issued to universities, colleges of advanced education, high schools and primary schools, and the Queensland Institute of Medical Research. Applications are carefully monitored to ensure that conservation ideals are not prostituted.



Public Contact

Nineteen press items dealing with wildlife matters were drafted and subsequently issued to metropolitan and country newspapers, television and radio.

Rangers on a field trip to Cape York Peninsula assisted in producing a film by a Japanese television channel. Freshwater crocodiles and other reptiles were filmed under the supervision of rangers.

In the production of the documentary 'Exploration North' rangers provided valuable field help particularly in the Paroo.

In Brisbane and elsewhere the rangers have participated in 5 different investigations particularly relating to pelican and brolga mortalities.

Publications

Roff, C. & Vaughan, L. (1977), *The Kangaroo Industry in Queensland, Third supplement 1971-1975 and 1976*, NPWS Information leaflet No. 3, December 1977.

Saunders, G. & Roff, C. (1977), *Kangaroo Conservation and Management in Queensland*, First supplement, NPWS.

Obituary

The Wildlife Section this year lost the services of one of its youngest officers. Mr Len Vaughan was a dedicated employee and his quiet competence will be missed throughout the Service.

Crop Damage

Crop damage permits were issued for the principal agricultural industries particularly grain crops.

Pest fauna	Permits	No. taken	Method
Wallabies (For the four common species of wallaby—black striped, red-necked, swamp and sandy wallabies—restriction on their taking were removed on 13-2-1978. This was done as a crop protection measure.)	33	8 169	shooting
Redbills	9	2 196	shooting
Kangaroos	2	203	shooting
Brolgas	1	—	detering
Emus	2	63	shooting
Galahs	1	6	shooting
White cockatoo	1	25	shooting

Offences

Fourteen (14) prosecutions ranging over birds, mammals and reptiles were undertaken successfully and magistrates increased fines and royalty penalties following amendment to the *Fauna Conservation Act 1974–1976* which increased the maximum penalty in relation to trading to \$10 000 or 2 years or both.

In a number of instances firearms and fauna were forfeited to the Crown upon conviction and 2 031 birds and eight reptiles so seized were released back to the wild or to recognised zoos. In many instances the animals had been in captivity too long for them to be returned to the wild. This involved 30 birds species and 2 reptile species.

Spring traps (49), snare traps (2), carrying boxes (8) and firearms (6) have been forfeited to the Crown.

In some cases where prosecution was not deemed necessary, warning letters (9) were issued, often to youthful offenders. In most instances the appliances and fauna involved were seized.

Intra-and Inter-State visits

Field duties

Regular field trips were conducted by wildlife rangers according to opportunity. The following is a summary of the major trips.

• Cape York Peninsula

Three trips were undertaken into this region during the year. Areas visited included amongst others, the Jardine River, Bamaga Aboriginal Reserve, Iron Range, Lockhardt Aboriginal Reserve, Edward River Aboriginal Reserve and private cattle stations. Liaison with Department of Aboriginal and Islanders Advancement management was actively promoted, particularly in relation to the tourist traffic into reserve areas. Liaison was continued with various local contacts who have been encouraged to maintain a watching brief in relation to the exploitation of wildlife. These contacts included police officers, property owners and managers and other private residents. Liaison with the tourist public was conducted wherever possible and according to opportunity.

• Lynd River

A familiarization visit was undertaken by the Cairns officer to the Lynd River to acquaint himself with the Research and Planning Branch's research programme on crocodiles and the Elnasleigh Uplands fauna survey.

Interstate visits

During May, 1978, an opportunity was provided for Wildlife Ranger Weaver to undertake an official interstate visit to Victoria and Tasmania. The principal objective of this trip was to investigate and review the statutory requirements, and the implementation methods of recreational shooting permits of the respective States. The officer's report resulted in recommendations for a permit system of altered format with widened distribution points.

In addition to the above, some of the wildlife management programmes were investigated, e.g. breeding and reintroduction by liberation of the plain turkey.

Law enforcement activities of both States were also investigated.

Inter-State duties

The Acting Chief Management Officer (Wildlife), Mr J. Martin, attended a meeting of the Kangaroo Conservation Management Committee in Canberra and two of the Law Enforcement Working Group meetings in Sydney and Adelaide.

Field Visits

During the period the following centres were visited by the Townsville ranger:

Centre	Number of Visits
Ingham	5
Cairns	3
Proserpine	2
Bowen	1
Ayr-Home Hill	3
Bradedon	4
Charters Towers	3
Hughenden	3
Richmond	1
Cloncurry	1
Mount Isa	2

The region administered by this Townsville officer has a population of over 300 000—the City of Townsville has a population of over 98 000. The area covered by the Townsville Region is from the O'Connell River south of Proserpine, west to the Northern Territory border, north to a line from the Cardwell Hinchinbrook Shire boundary—an area about the size of half of Victoria.

In southern Queensland major field trips were made by rangers to Stanthorpe, Charleville, Chinchilla, Murgon, Goomeri, Conondale Range, Moreton and Stradbroke Islands, Toowoomba, Dalby, Roma, Gold Coast, Somerset Dam.

Often joint patrols were organized; as examples Brisbane/Cairns/Townsville based rangers conducted patrols in pairs at Townsville, Cloncurry, Hughenden and Mount Isa.

Accompanied by Brisbane/Cairns rangers, the Premier of Queensland visited the national park at Iron Range and whilst in this area, viewed at close range uncommon species of wildlife including the great palm cockatoo, electus parrot and the grey cuscus.

Special Projects

Rangers (Wildlife) are encouraged to undertake under supervision wildlife projects and a number are being attempted and some new ones are planned.

Michaelmas Cay

In conjunction with Parks and Reserves personnel, a pilot project was initiated in an attempt to alleviate the visitor impact problems being experienced at this locality. A portion of the sand cay was demarcated with a low timber railed fence. The fenced off portion was appropriately signposted. During a subsequent inspection of the cay by executive Service staff, the project received a mixed reaction from some of the officers.

Charleville

A field study of the feeding habits of the wedge-tailed eagle is being conducted at Charleville.

Townsville

Preliminary planning has been made for the development of a field study on the red-browed fig parrot.

Cairns Golden-Shouldered Parrot survey

Additional records of active nesting sites and individual bird observations were achieved during the year. These records were obtained in the course of other duties and they were all within the known range of the species. While this project remains viable, at least another two more years of intensive investigation is required in order that sufficient data may be obtained to warrant publication.

Cairns 40 Mile Scrub National Park

A project proposal relating to a wildlife management investigation of this locality was submitted and subsequently approved.

Cairns Northern Rat-Kangaroo

A joint project with Mr P. Johnson of Research and Planning Branch was continued during the year. Two captive male specimens continue to thrive in yards at Pallarenda. In order to confirm the tentative identification of the animals collected to date, a single specimen was obtained during the year to compare skull characteristics with the known specimens of the species.

Royalty

During early 1977 royalty rates on birds, mammals and reptiles were adjusted upwards. Basically royalty is a deterrent as well as a revenue producer. Moneys collected in rounded figures totalled \$302.00.

Parks and Reserves

Public information and Regional Offices

The full benefits, in terms of providing a service to the public as well as a more regionalized approach to management of our parks and reserves, is now becoming realized through the actual establishment of local centres throughout the State.

In addition to the Cairns Regional office opened recently, the Rockhampton office located in the Government building in the city centre has established a Service presence for the more localized management of parks from the Whitsunday Island group and Eungella National Parks in the central northern areas to Carnarvon National Park further south.

Although not as yet operative as public information stations or established as public offices, the Service now has representatives in the Gympie and Maryborough areas assuring that prompt and adequate supervision is realized in important parks such as Cooloolo, Noosa and Woodgate. The Service appreciates the positive work attitudes of such officers (and their wives) who conduct Service offices from their private homes.

The Service has established a Rangers residence in Gympie provided by the Public Works Department under the public service country housing scheme.

At Pallarenda, in Townsville, the Management and Operations Branch now has officers available to help the information hungry public with enquiries ranging from park facilities available to technical questions on wildlife management and protection. Increased public education and awareness of the principles of nature conservation has been enhanced by an accelerated programme of interpretation not possible before the establishment of this adequately manned station.



An office and visitor centre at Girraween, opened by the Honourable T. G. Newbery on 19th February, 1978, is providing an ideal and much needed interface between the park visitor and the Service. These centres offer a pleasant meeting place where the ranger, as host, can become more familiar with the park visitors' needs and aspirations as well as pass on the values and significance of Australia's timeless heritage, through his local knowledge and his most influential tool—the park.

Another centre underway and projected for opening in the 1978-79 year is the Kinaba Island office and visitor information centre. The spur to the commencement of this centre was provided by the promise of a most generous donation in excess of \$70 000 by the Bird and Wildfowl Society under the leadership of the founder member Honourable Sir Thomas Hiley. An over water building, its design and execution has captured the imagination and enthusiasm of Department of Works architects who are in charge of the project.

Its location on the northern shores of Lake Cootharaba at the inflow of the Noosa River will make it the Gibraltar of the Noosa River catchment area and act as an ideal information centre for the boat oriented visitor. There is now a ranger at Boreen Point to manage this delicate and significant part of Coolool National Park.

Co-operative efforts

In a co-operative effort between the Service and the James Cook University a research station on Orpheus Island has been tentatively approved. Valuable research work of interest to the Service, particularly in respect to aquatic biology, will be available from centres of this nature which are "on-the-spot".

Further co-operative efforts with Government Departments include the district hazard reduction programmes organised and funded as joint Forestry, National Parks and Wildlife Service operations necessary to assure protection of neighbouring land authorities and park service estate. These programmes are economic because they are done simultaneously and are ecologically as sound as possible because of review by both Departments, including a Research Branch input.

Parks and reserves are continually being used for public interest films such as the Channel 2 production on walking safety screened in Brisbane recently.

The Service is now well on with the task of building a headquarters on Fraser Island, using a grant given by the Commonwealth Government to compensate for job losses after the cessation of mining.

Management, public and park ranger safety, efficiency and economic operations will all be greatly improved by recently installed mobile radio links between the three major national parks at Noosa, Coolool and Fraser Island. Operating through the Forestry base at Gympie, this facility will add another arm to the flexibility of management strategy.

Offences

Given the Service's main desire only to educate and remonstrate with people for breaches of Acts protecting the national parks and the flora and fauna of the State, there has been a regrettable and disturbing increase in the number of offences which were deemed necessary to warrant action.

The following summarize the results of this law enforcement; further details are given in appendix:

Taking protected fauna	19
Taking protected flora	10
Keeping protected fauna	6
Illegal movement of fauna	2
Shooting in a sanctuary	2
Illegal dealing in fauna	3
Breach of Animal Quarantine	2
Possession of mist net	2
Total	46

Legal action is pending on 25 unauthorised structures on Coolool National Park. The long-continuing endeavours to have these removed is an embarrassment to the Service. Those owners who co-operated when the Service took over Coolool National Park management and removed their huts earlier as requested are justifiably annoyed at the apparent lack of action on removal of the others. The Service is bound to act in terms of the interpretation of its legislation by the courts in this as in other matters. It is very frustrating and time consuming to have to take the multiplicity of steps it has been forced to; and it is apparent that in the consolidated legislation, attention must be given to framing simpler procedures to help the Service protect the conservation values of its estate from the cavalier approach of people who choose to erect illegal holiday shacks on national parks.

The majority of offences on parks and reserves occur through (i) the refusal of visitors to remove dogs from the park when requested; (ii) the removal of plants or any other forest products from the parks.

For the field officer acting in the line of duty the most difficult situation to be confronted with is that of an offence compounded by personal abuse on the part of the offender. Typical of this situation was an incident which occurred at Eungella National Park. In this case the Field Officer involved correctly approached a group of people about a dog which was running loose. It is to his credit in this situation as with other officers in similar situations that the personally derogatory tirade aimed at him was ignored, though humiliating, while the facts surrounding the dog were established. Because of the attitude of the offender it was decided to prosecute. The outcome of the case was in favour of the Service with the offender fined—\$30.00 and \$14.25 costs and \$60.00 professional costs for refusing to remove the dog from a national park, and \$100.00 and \$14.25 costs and \$60.00 professional costs for abuse of an officer.

Bush Camping Permits

A Bush Camping Permit system was introduced in 1978. The permit system has been initiated to cater for the visitor who prefers to be more self sufficient or who desires to make use of those national parks where formal camping facilities are not provided. It does not substitute for the normal campground permit nor is it a blanket approval to camp anywhere on any national park. The permit which is freely available throughout Queensland (being distributed through Tourist Bureaux, RACQ, Forestry, Lands and National Parks and Wildlife Service main offices at present), involves a printed annual guide and permit in one format. The permit is valid for one year and negates the need for applying for a written permit on each camping trip. Camping on designated camping areas requires a special permit as before, whereas, on others, camping may be restricted to certain areas or completely prohibited. This information together with name of nearest town and distance to such and any special conditions or advice is included in the guide.

The holders of permits are asked to submit annual returns of parks visited and nights camped which will provide the Service with easily available statistics on one form of visitor usage of the Service's estate. This will have long term influence on management planning.

Hang Gliding Permits

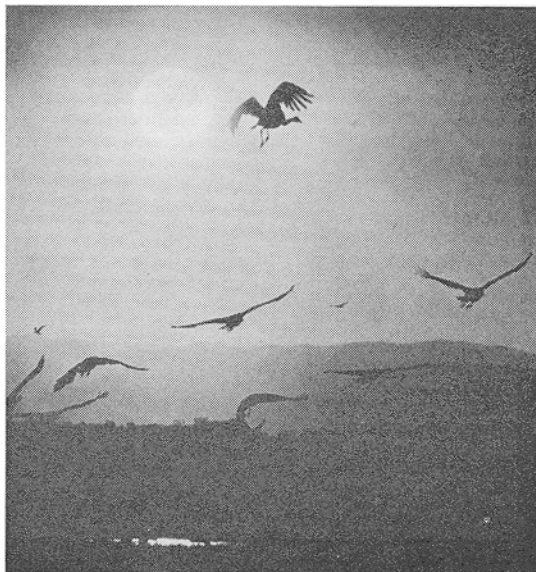
A relatively new recreation pastime and one that is becoming increasingly popular is that of hang gliding. Ministerial approval has been given for the use of selected sites for hang gliding enthusiasts. State wide usage of national parks by hang gliding enthusiasts has not been granted, and the effects on the park and other users will be carefully monitored.

Each participant in this sport is required to make application in advance for permit approval for each day and time usage of national parks for this activity. Approval of each permit is assessed in relation to public safety and the impact on the environment. The Service regards the present position very much as a trial period.

Environmental Parks Officer

Co-ordination and management of the growing number of environmental parks throughout the State has been achieved by the appointment of an Environmental Parks Officer. It is desirable that close liaison with local authorities and individuals be maintained because of the specialized management problems involved in co-ordinating a management programme through local trustees. The Environmental Parks Officer works closely with local regional national parks staff.

Other areas of involvement are the development of acquisition guidelines for environmental parks, inspection and assessment of new environmental park proposals, interpretation of environmental parks and their values to the public, assessment of the role of environmental parks in the regional context and the development of uniform park furniture for use on environmental parks.



Technical Projects Officers

Technical Projects Officers have been appointed to Head Office staff to expedite the processing of various requests from field staff and the public.

The areas in which these officers will be involved include: uniform ordering and distribution, issue of bush camping permits, processing of reported offences, stock grazing permit inspection and processing, ordering and distribution of bulk orders through Brisbane to the parks for example, barbecues and signs. They will also relieve and assist field staff, and perform other administrative duties as directed by the Chief Management Officer.

With the appointment of these overseers, another area of concern where delays occurred due to the initial staff shortage has hopefully been alleviated if not removed.

Development on National Parks

The Service, through its Park Management Section, has again completed a comprehensive construction and maintenance programme on national parks throughout the State. However there still remain the related problems of increasing costs which tend to cancel increases in Revenue funding (which pays for park maintenance); and minimal increases in the growth of park workforce. The Service builds much sought and needed new facilities from its Loan funds; and this activity by its very nature, increases maintenance commitments.

Hence while the Service continues to construct new visitor facilities in response to increasing public demands, there must be a steady decline in its ability properly to maintain such facilities unless additional revenue funds are provided. This situation is critical in several areas of the State where it has become impossible to prevent the onset of considerable degradation of buildings and tracks.

The rapidly growing demand for outdoor recreation environments which are divorced from urban areas is having considerable repercussions on the viability of national parks as areas dedicated for the purposes of nature conservation. It is clear that if national parks are to continue as areas set aside for the dual purposes of nature conservation and the perpetual public appreciation of nature, then alternative public and private lands will need increasingly to share the considerable and expanding outdoor recreation pressure, a major proportion of which is presently borne by national parks.

Brisbane Region

Activities in this region over the past year have centred on upgrading the extensive array of visitor facilities which already exist. Most national parks in the region have already undergone considerable development for recreational use. The parks' proximity to south-east Queensland urban areas, coupled with the ever increasing mobility and leisure time available to the public, dictate that considerable recreational pressure is placed on national parks in the region.

As a consequence, development works are necessarily oriented toward ensuring that the nature conservation values of the parks system are not intolerably prejudiced by an overburden of human recreational pressure, while concurrently ensuring that each individual's experience with nature through national parks is optimized. This is a mammoth task indeed in which both management and interpretive activities become firmly interlinked.

The visitor information centre and office built at Girraween National Park last year at a cost of over \$50 000 (part of which was met by this year's funds) was officially opened on 19 February, 1978, by the Honourable T. G. Newbery, M.L.A., Minister for Culture, National Parks and Recreation. Girraween is one of the most popular 'extended-stay' national parks in the State and has been the focus of considerable management activity. Further work on campground extensions at Girraween has been oriented toward accommodating the same number of visitors with less impact, rather than toward increasing the overall camping capacity of the park, the provision of which must be governed by the carrying capacity of the surrounding natural area. Possibly the greatest problem facing the management of national parks now and in the future is the absolute paucity of viable outdoor recreation areas when related to population numbers, particularly in the south-eastern portion of the State.

The construction of graded walking tracks is a significant and recurring component of national park development programmes, especially on heavily visited areas. This year work was carried out to upgrade existing tracks on Burleigh Heads, Lamington, Natural Bridge, and Springbrook National Parks. Such tracks, when properly constructed and maintained, represent the only medium whereby the vast majority of national park visitors is able to gain access to and experience park environments with a minimum of impact.

Additional picnic facilities were also established at Queen Mary Falls, Lamington, Springbrook, and D'Aguilar Range National Parks.

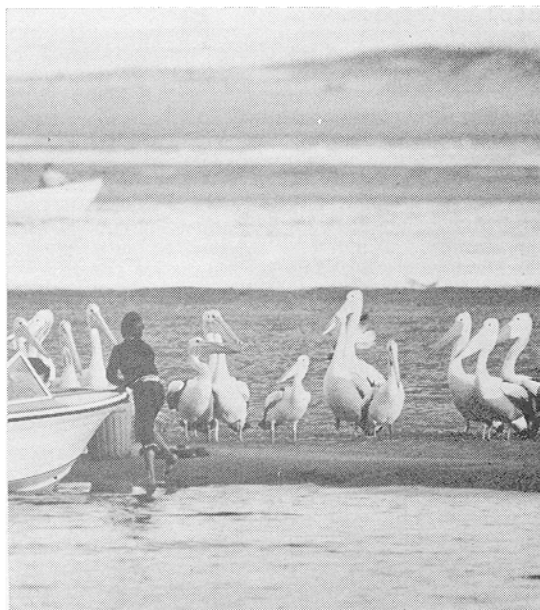
Revenue funds and staff levels remained essentially unchanged from the previous year, and with the continuing construction of new facilities, there remains the fundamental problem of insufficient resources for proper maintenance to be effected.

Gympie Region

This region contains some of the major coastal national parks in the State including Cooloolool and Fraser Island. Such parks are increasingly becoming the focus for off-road vehicle recreation, and they receive constant use from four-wheel drive, beach buggy, and trail bike owners. Consequent management of these parks has been oriented toward allowing for, but controlling, off-road vehicle use to ensure that the essential management objectives applicable to all national parks are not prejudiced.

A grant of \$68,000 from Sir Thomas Hiley and the Bird and Wildfowl Society of Queensland for the purposes of "the preservation of birds whose continued existence is endangered; and to ensure that there would be opportunity for observation of these by future generations" has enabled the Service to pursue this end. Major works are proceeding to establish a visitor information centre and ranger office at Kinaba Island on the southern extremities of Cooloolool National Park. This will facilitate nature conservation through proper management and will provide an ideal forum to introduce visitors to the virtues of nature conservation and the intricacies of nature which they can then actively experience in the immediate national park surrounds.

The Branch has also commenced construction of ranger accommodation in the northern portion of Cooloolool adjacent to 'Freshwater' camping area. This will enable a very popular area to be staffed on a full time basis providing information to the visiting public, actively managing and controlling visitor use of the area to ensure minimum disturbance, and maintaining the visitor facilities provided.



Expenditure of a special Commonwealth compensation grant for the development of Fraser Island National Park has totalled \$143 431.51 this year. Construction of staff accommodation has commenced on the island, and detailed planning of the type and deployment of initial administrative and visitor facilities on the national park has been completed.

Further picnic facilities have been provided in the region at Crow's Nest, Woodgate, Kondalilla, Mapleton Falls, and Noosa National Parks.

The Bunya Mountains has seen detailed planning, conjointly involving Branch personnel and Works Department architects, for the construction of a ranger's residence adjacent to the main campground at Dandabah. Construction will commence in the 1979-80 financial year.

Rockhampton Region

Over \$100,000 was expended on development works at Carnarvon National Park this year. Despite the park's remoteness, the work has proceeded well with the completion of a ranger office/visitor information centre and a carefully designed amenities block to accommodate the demands of an ever-increasing number of park visitors. Additionally the construction of new barracks accommodation for staff and a ranger's residence are progressing well and are planned for completion in the near future. Once the current programme of works is completed at Carnarvon, the national park environment with these visitor facilities, will provide the visiting public with a prime opportunity to experience the natural and cultural history of the park without in any way threatening its integrity.

The region had an across-the-board increase in national park visitation this year and further picnic facilities were established at Eungella, Cape Hillsborough, Bluff Point, and Fitzroy Caves National Parks.

The M.V. Shearwater maintains frequent patrols of island national parks and is based at Rosslyn Bay near Yeppoon.

A new 21 foot speed patrol-boat was purchased and is based at Seaforth. This boat will supplement a further vessel which operates out of Shute Harbour, and together they will patrol the national park islands of the Whitsunday and Cumberland Groups. Low key camping facilities were established on Gloucester Island, North Molle Island, Thomas Island, Shaw Island, Henning Island, Rabbit Island, and Humpy Island National Parks. Such facilities are designed to minimize the environmental impact resulting from the use of the islands for camping, and to improve hygiene on these areas.

Cairns Region

A major component of this year's expenditure on national parks in the Cairns Region has been the construction of much needed staff accommodation and administrative facilities. Included in this category are the construction of residences at Chillagoe, Lake Eacham, and Palmerston; the construction of an office at Magnetic Island; and the construction of workshops at Palmerston, Lake Eacham, Cardwell, and Jourama. These will enable the Branch to properly manage these parks and will also enable the Branch to make information more readily available to the public.

Visitor access to the limestone cave system at Chillagoe has been further improved, and following considerable site and design planning to minimise any likely impacts, work is proceeding toward the development of visitor access into Trezkin Cave via a system of steel ladders and boardwalks. An extensive inventory and overall plan of management for the multitude of cave systems in the Chillagoe area has been prepared. This will guide management practices and cave development in accordance with the Service's important role of nature conservation, while simultaneously allowing for visitor access, and enhancing visitor experience, in selected portions of the cave systems.

Further picnic facilities were constructed in the region at Davies Creek, Mount Spec, and Jourama National Parks, and on several off-shore island national parks. Again with the valuable assistance of the third Task Force, R.A.R., walking tracks on Hinchinbrook Island and Lizard Island National Parks were upgraded, and further camping facilities were installed. A limit of twelve campers at any one time and a maximum length of stay of one week has been set for Lizard Island. The Branch now makes regular patrols of this island to ensure that the area does not suffer abuse by visitors.

The M.V. Gannet and a new twenty-one foot speed patrol boat share the schedule of frequent patrols to island national parks in the region.

Work is proceeding to formalize the camping facilities at Mount Elliot National Park. A new amenities block is being constructed to serve campers, and the construction of a graded walking track system has commenced. Substantial improvements were also carried out on the road access into this particular national park.

With the recent acquisition of a further 11 hectares as an addition to Lake Eacham National Park, a major re-development programme has commenced. Accommodation and workshop facilities have been constructed on the newly acquired area, the eventual aim being to locate all major visitor facilities, staff, workshop, storage, and office accommodation on this area. This will enable similar structures to be withdrawn from the relatively fragile and presently over-used environment on the foreshores of the lake.



Park Management Planning

The year has seen the development of the Management Planning Section as a distinct unit having the necessary staff resources to enable the preparation of management plans to be undertaken on a reasonable basis. A number of projects have been initiated and considerable emphasis has been given to the development of techniques which will facilitate the complex operation of management planning.

In its management planning work the section has had to start from scratch. Queensland's national parks have a total of 2 182 169 hectares and no plans have been completed. The challenge of preparing management plans for the 320 national parks and 68 environmental parks is formidable yet urgent; for without thorough planning of how these areas should be managed public pressures and *ad hoc* development may very well create precedents and development directions that are incompatible with the long term conservation of the areas. Correcting the effects of such unplanned developments is more often than not far more expensive than initial planning costs.

Staffing

During the year it was possible to increase the number of people engaged in management planning from one to five. This was achieved by the initial employment of two wages staff which was followed by the transfer of an ecologist and a geographer from the staff of the Co-ordinator General's Department.

An additional wages employee is engaged in the dual role of field assistant to the section's field officers and to gather information about aboriginal sites and relics contained within national parks in the sandstone area of the Central Highlands.

Planning deficiencies

Prior to the establishment of the management planning section there has been little or no park planning work done in Queensland. The section has therefore, in addition to preparing management plans, had to develop its own approach to park planning. This had to be based upon the particular requirements of the Service. In doing this the following factors were considered:

1. Successful park management planning depends upon the understanding of the ecological nature of the park resource, the constraints which the resource might impose upon any management activity and the needs of the public which the park will serve. At present our knowledge of the park resources is lacking. Where information exists it is often in a form of species lists which do not include an understanding of the interactions which occur among the various individuals. Efforts are being made to develop a rapid system of resource description for management purposes and based upon the obvious differences in landscape which may be perceived. This procedure is based upon the premise that the observed differences are an expression of the differing ecological processes present in the area. This technique will also consider the intangible aesthetic qualities of the park environment which have previously presented considerable problems of assessment and yet are often the most striking features to be observed by the park visitor.

2. The control of visitor use is the most significant problem of park management which has so far been recognised in Queensland. It is becoming increasingly obvious that the recreational use of a national park cannot be considered in isolation from the recreational opportunities which are available elsewhere within the park's region. Park management planning must therefore be considered as an integral part of the recreational planning for a region which should in turn be an integral part of general regional and local authority planning. It is apparent that for a number of parks currently receiving management consideration their values for low density wilderness forms of recreational opportunity and biological conservation are threatened by their utilization for more common forms of higher density recreation. These more common types of recreational activity would be best accommodated in areas of lesser ecological significance, in closer proximity to population centres and where the "natural" environment can be modified while retaining the required rural setting.

3. It is a common misconception that the end product of management planning is the production of a planning document. While the preparation of a planning document is important this should be seen as a step in the longer term aim of planning which is to provide sound integrated guidelines by which a park may be managed. To this end the following are considered to be important components of any park management plan:

- the declaration of a statement of values which will set out the reasons for which the reserve was set aside, and enumerating those social and biological attributes which are considered significant. This statement provides a framework within which decisions affecting the park resource will be made.
- the declaration of a statement of management objectives which will spell out ends rather than means to which the parks resources may be used yet preserved. All decisions concerning the management use and development of the park should be directed towards achieving these objectives and protecting park values. Objectives provide a framework for conserving park resources, for integrating the park into its regional environment and for accommodating environmentally compatible park use.
- the definition of management strategies which involve the location of major visitor facilities, the requirements of what is considered the most desirable programme of biological resource management and will set the basic structure whereby detailed designs may be implemented.
- Public involvement. It is generally accepted that park planning should involve the public who are the ultimate park users. The problems of incorporating public involvement in government planning are considerable. It can be time consuming, costly and the results are often questionable. The effectiveness of public involvement depends upon the extent to which the public is informed about park values, park management and the consequences of any management practices of park use which may arise.

At present notice has been taken of a variety of public comments and submissions which have been received from organizations who have had a particular interest in areas which have been under planning consideration. This has been of particular assistance with Cooloola and Fraser Island which have a long history of public comment which has advocated a wide range of management options as well as providing a useful source of resource information.

It is proposed that the question of public involvement should be kept under review. The first formalized attempt at soliciting public involvement is proposed to be implemented in connection with Green Island. It is intended to invite written submissions from interested parties, by means of press advertisement. The results of this will be carefully monitored with the intention of providing a more comprehensive involvement in future projects.

Projects

During the year the section's efforts have been directed towards the following specific projects:

Cooloola National Park

Cooloola National Park has been subject to considerable public comment and heavy recreational use. It was considered essential that, before the Service should commit any substantial effort in developing the park, a management plan should be prepared. The preparation of this plan which is currently being reviewed as an in-service document prior to its more general release has presented a number of problems. Existing patterns of use were not entirely compatible with the preservation of the park's resource. The complicated and in many instances arbitrary park boundaries presented extra difficulties.

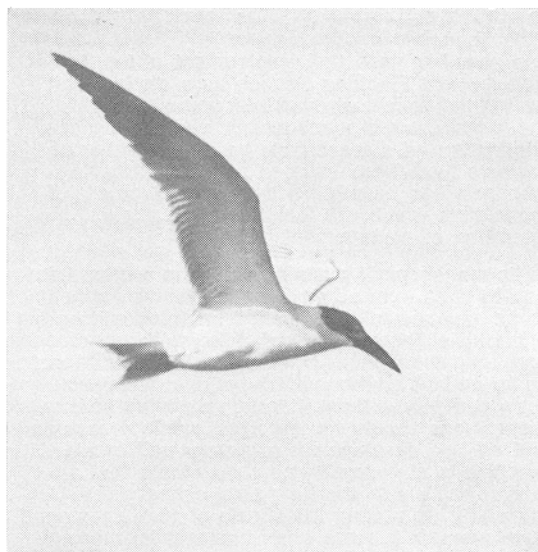
The staff of the Soils Division, CSIRO, were instrumental in supplying much useful resource information about Cooloola and participated in a successful Service seminar aimed at discussing the Cooloola resource and its management.

Fraser Island

The Section has presented two reports dealing with the management of Fraser Island National Park for submission to the Interdepartmental Committee set up to prepare a plan of management for Fraser Island.

Robinson Gorge

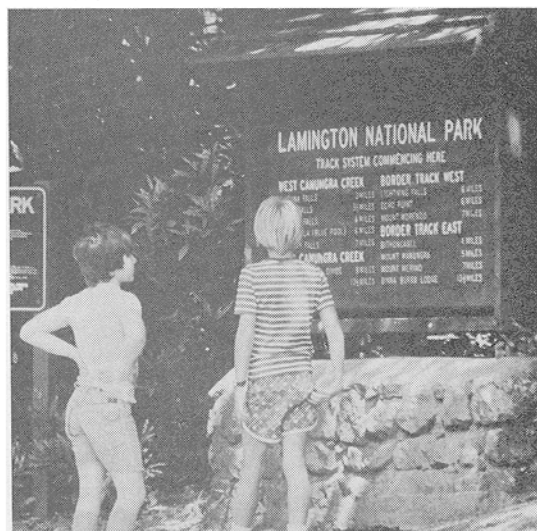
Field investigations aimed at providing the necessary resource description on which to base a plan of management, were carried out. Management strategies are currently being formulated for this important national park. Work done so far has indicated the general importance of the Central Highlands for nature conservation, scenic preservation, the provision of wilderness and other outdoor recreational opportunities and the conservation of cultural items representing former aboriginal occupation. These considerations have led to the initiation of a project which will seek to clarify the management of other national parks in the area (including Carnarvon National Park), and their possible extension. As a consequence of these projects the Service is compiling as much information as is available concerning the nature and extent of aboriginal relics present within areas



under its control with the objective of evaluating their conservation status and devising strategies for their protection.

Grants Commission

At the request of the Treasury a study was implemented to consider the relative costs of providing national parks and wildlife conservational services for Queensland based on the service's provided in New South Wales and Victoria. This was required for the purpose of seeking additional funds from the Commonwealth Grants Commission. This study highlighted the greater diversity of flora and fauna in Queensland and the greater dispersion of the parks system in meeting day visitation and holiday recreation demands. The result of the study was that as a claimant State the total assessed need of Queensland for national parks and wildlife conservation was of the order of \$1.75 million. This is the first time such an exercise has been undertaken in Queensland for the category of national parks and wildlife.



Kinaba development

As a consequence of work performed in relation to the Cooloola Management Plan the planning section prepared a report detailing proposals for the development of the Kinaba area of the Noosa River in response to the offer of financial assistance from the Bird and Wildfowl Society of Queensland to develop a wetland area for public visitation. Consequent to the acceptance of the project by the Society, architects were briefed and negotiations entered into with the various authorities whose interests were affected so that the project could be implemented.

New park proposals

Section staff were called upon to provide comments upon a number of new park proposals throughout the State. The expertise now contained within the section has been used to contribute to the resolution of conflicts between park proposals and other land uses particularly along the Central Queensland coast. The planning in this area has concentrated on consolidating the region's park system while recognising the demand for mining and grazing. Other areas of involvement were Cooloola, the Central Highlands, Fraser Island, Pummicestone Passage and Chillagoe.

Green Island

The increasing public use of Green Island has presented a number of problems for the various authorities who have a managerial responsibility on the island. The Service convened a meeting of representatives from each management authority to discuss the problems of the island's management, and to advise means of ensuring maximum co-ordination of effort. As a result of this meeting Cabinet established an interdepartmental committee charged with the responsibility of preparing a plan for the island's management. The efforts of the committee are being co-ordinated by the Service. The Cabinet appointed committee has had one meeting and work is proceeding to prepare the plan.

Other Projects

Prior to the beginning of the year a considerable amount of work had been undertaken towards the development of a management plan for the Whitsunday Islands. Unfortunately it was not possible to proceed with this project as a result of the direction of priorities towards the projects mentioned previously.

Public Lectures and Talks

During the year section members were involved in presenting lectures and talks to a number of institutions including the Queensland Institute of Technology, The Queensland Agricultural College, Kelvin Grove College of Advanced Education and a number of secondary schools.

Mr T. Vollbon, the Management Planning Officer, presented a paper entitled 'An Overview of Park Planning and Management' at the 1977 ANZAAS conference in Melbourne.

Section staff also contributed to the International Training Course in Administration of National Parks and Reserves and to the short course in Land Use Planning both of which were organized by the Australian Development Assistance Bureau.

Section personnel have also been active throughout the year in providing assistance to a number of undergraduate and postgraduate students undertaking study projects in the area of parks and recreation planning.

Awards

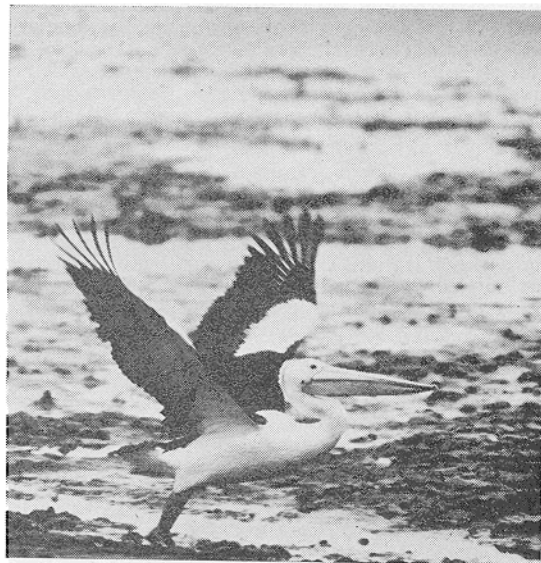
Mr P. S. Sattler was awarded the degree of Master of Natural Resources from the University of New England for his thesis on the 'Rehabilitation of Metalliferous Mined Areas in Queensland'.

The Future

While the section has had staff increases and has initiated a number of projects it will not be possible to prepare large numbers of plans within the foreseeable future. The Service has yet to refine and shape its ideas on the best purposes its plans are to serve and basic methodologies have to be devised.

The section has now been functioning for a sufficient period of time to be able to identify a number of issues which should be considered for the future:

- the need for the planning for outdoor recreation facilities on a regional basis involving all government agencies associated with the provisions of outdoor recreational facilities so as to ensure the minimization of duplicated efforts and the maximum service to the public.
- the need ideally to prepare park management plans on a regional basis so that the relative functions of each component of the park system can be readily appreciated and identified.
- a need for wildlife and nature conservation plans for areas outside the reserve system. Such planning could serve to guide the Service and the public sector in ensuring the conservation of the State's wildlife. General ideas to implement tangible projects which will reach beyond mere granting of sanctuary status to certain private lands are being canvassed in the Service.



Research and Planning

The Research and Planning Branch is responsible for scientific research and strategic planning in the field of nature conservation. The Branch provides technical input on the nature and status of the native fauna, flora and landforms of Queensland and on the methods of conserving these resources.

Base facilities from which to conduct field work are established at Townsville, Warwick and Brisbane, with land now acquired for the purpose at Pallarenda, Morgan Park and Moggill respectively. Other field stations for the time being are located in south-west, south-east and central Queensland, Charleville, Kingaroy and Rockhampton.

Research work has been, as in past years, extended by grants from various sources. Six major programmes have been expedited through substantial grants since the inception of the Service; these include a number of remote-area fauna surveys in the 20-year programme of surveys to provide an inventory of the fauna of the State, and extended work on red kangaroos, bridled nail-tailed wallabies, brolgas, sea turtles and orchids. During 1977-1978, such studies continued on the McIlwraith Range Fauna Survey, red kangaroos in south-western Queensland, and sea turtles in eastern and northern Queensland.

In consequence, 16 scientific papers appeared in print during the year and some 29 others and one book were submitted for publication. Furthermore, 26 special reports were prepared for general use and some 20 reports were compiled for Service purposes. Sixty-seven reports on land evaluations for reservation purposes were written. A number of papers were referred for personnel outside the Branch. Material assistance by Branch officers was acknowledged in a range of scientific publications (e.g. *Proc. Helminth. Soc. Washington* 45:53-5).



The Branch Director, Dr H. J. Lavery, served as President of the Royal Society of Queensland during the year. He also was appointed as Honourary Associate of the University of New England, and a Supervisor of post-graduate students at Griffith University, University of Queensland and University of New England. He served on the Biology and Environmental Science Advisory Committee of Queensland Institute of Technology and also as an Executive Producer, Natural History Unit, Australian Broadcasting Commission.

In May, 1978, Mr C. J. Limpus, Zoologist, visited Toronto (Canada) as the Australasian member of the Sea Turtle Specialist Group (Marine Steering Committee) of the International Union for the Conservation of Nature and Natural Resources, at the invitation and expense of IUCN. The opportunity was taken to make an official tour of turtle research being conducted in the Hawaiian Islands.

Mr J. H. D. Martin and Mr J. G. Blackman, Senior Zoologists, were awarded the degrees of Master of Science from the University of Queensland and the James Cook University of North Queensland, respectively.

Three graduate staff members are in the process of conducting research work for University doctorates and four are enrolled for other higher University degrees. Five rangers and other staff are involved in tertiary courses leading to qualifications of value to the Service.

Branch officers continued to offer technical advice to organizations and instrumentalities where the participation of these was an integral part of nature conservation in this state. These bodies included Queensland Government Departments (e.g. Forestry Department, for vegetation mapping and for land-use planning), Commonwealth Government Departments and Agencies (e.g. Council of Nature Conservation Ministers Standing Committees), Local Government authorities (e.g. Woongarra Shire Council on a proposal for an environmental park at Mon Repos), educational institutions (e.g. Macquarie University, for marsupial studies), scientific societies (e.g. Australian Academy of Science Symposium on Water) and private organizations (e.g. Australian Orchid Foundation). The Branch Director serves on the Currumbin Bird Sanctuary Trust.

Four Branch Sections undertake appropriate investigations that are of progressive value for nature conservation management purposes. Details of their activities are given below.

Field Studies

The objective of this Section is to obtain a comprehensive understanding of the 'pristine' circumstances of the native fauna and flora and the natural landforms of Queensland. Investigations are primarily long-term studies of groups of species warranting detailed attention. All biological work tends to concentrate on populations and population behaviour.

Seasonal conditions across the State wide area of 1.7 km² vary enormously. An example, from north-eastern Queensland, indicates the situation reported there during 1977–1978.

Average seasonal conditions persisted at northern coastal areas during the second half of 1977, although inland areas were quite dry. The wet season early in 1978 was below average in amount and distribution of rainfall. Coastal areas received good falls but these were seldom widespread. A more sporadic rainfall occurred

over inland areas so that by the end of the period surface waters in some districts such as Charters Towers were minimal.

A feature of the second half of the period was the atypical appearance of considerable numbers of some species in local areas. For example, a sudden influx of willie wagtails (*Rhipidura leucophrys* (Latham)) into the Coen area, large numbers of white-eyed duck (*Aythya australis* (Eyton)) grey teal (*Anas gibberifrons* Muller) and pelicans (*Pelecanus conspicillatus* Temminck) on to coastal swamps in the Burdekin-Townsville region, and local invasions of fork-tailed kites (*Milvus migrans* (Boddaert)) at Townsville, were an apparent consequence of widespread dry conditions. The poor wet season resulted in unsuccessful nesting at a traditional egret and heron breeding colony to the south of Townsville. Magpie goose (*Anseranas semipalmata* (Latham)) and brolga (*Grus rubicundus* (Perry)) nestlings were also well below the expected levels at coastal breeding grounds, which otherwise appeared to be quite suitable for the breeding of both species. Brolga numbers increased on coastal habitat from Tully to Townsville by the end of the period; nevertheless, the small proportion of young brolgas at one area being monitored is consistent with these observations of below average nesting. It suggests that breeding was low throughout the regional population. Large numbers of brolgas and eastern Sarus cranes *Grus antigone* (L.) were recorded at coastal areas between Normanton and the Staaten River.

Macropod populations remained high throughout the year in northern coastal areas. In western areas the dry conditions had a detrimental effect on habitat. Additional records have extended the known range of the spectacled hare-wallaby (*Lagorchestes conspicillatus* (Gould)), the northern nail-tailed wallaby (*Dendrolagus unguifer* (Gould)) and the antilopine kangaroo (*Macropus antilopinus* (Gould)). A new species of rock wallaby was reported from the Proserpine area, and Lumholtz's tree-kangaroos (*Wendrolagus lumholtzi* Collett) were frequently sighted on the Atherton tablelands. A population of the northern rat-kangaroo (*Bettongia* sp.) was located in Davies Creek National Park via Cairns.

Notable records included that of the yellow-bellied glider (*Petaurus australis* Shaw & Nodder) from the Herberton Range, the soft-haired tree mouse (*Pogonomys mollipilosus* Peters & Doria) from Iron Range, the Pacific ridley turtle (*Lepidochelys olivacea* (Eschscholtz)) from Gulf of Carpentaria and the eastern Sarus crane from Townsville.

Particular studies are still concerned more with fauna and flora than with landforms; only employment of suitably trained staff can provide a balance of skills in all areas of responsibility. Examples of specific investigations in progress during the year are given below.



Surveys

Fauna

The series of exhaustive fauna surveys of Queensland proceeded satisfactorily, with a review of activities in this long-term project prepared for publication. Surveys presently in progress are outlined below.

- Upper Mitchell River Fauna Survey. The survey continues; to date, five amphibians, 43 reptiles, 89 birds and 20 mammals have been recorded.

- McIlwraith Range Fauna Survey. The survey, funded by a Commonwealth grant of \$17 499 commenced in August, 1977. Boundaries have been determined and recording commenced. Early records include an unidentified species of dragon (*Lophognathus* sp.).

- Dalrymple Shire Fauna Survey. Following Mr Lawrie's transfer to Townsville, it is planned to recommence the survey in the year 1978-1979.

- Taroom Shire Fauna Survey. Field work totalled 39 days. Species recorded so far total 17 amphibians, 47 reptiles, 167 birds and 28 mammals. A report of the presence of bridled nail-tailed wallabies continues to be investigated by Mr D. G. Crossman, the Zoologist undertaking the survey.

Analysis of data for publication of a pilot survey of Carpentaria Shire is proceeding. Likewise, additional data for the Townsville fauna survey have been obtained in the form of 62 species of reptiles, not previously included as a group in the earlier survey.

Liaison was maintained with the Australian Biological Resources Study (Commonwealth Department of Science) and the Australian Atlas of Birds (Royal Australasian Ornithologists Union) and all field survey data were stored according to the criteria prescribed by these authorities.

Flora

Field survey work was extended to Cape York Peninsula, where the feasibility of mapping the vegetation of McIlwraith Range was investigated during August/September, 1977. Possible study sites were selected and some specimen collecting was undertaken. A detailed vegetation map of the whole of Fraser Island was commenced in collaboration with Forestry Department.

Landforms

Classification and mapping of landforms and landscapes continued to be developed through the specific land-use planning exercise in the Wide Bay/Burnett region.

Specific Investigations

Kangaroos and Wallabies

Long-term, broad scale studies designed to monitor the state of health of populations of the larger forms of the 24 species of Macropodidae found in Queensland proceeded under the direction of the Branch's Chief Research Officer Dr T. H. Kirkpatrick).

- Kangaroo age, population dynamics, reproduction. These projects continued from Hermitage. Several aged captive animals died during the year, and their skulls have been added to the collection of known-age material. Generally, the molar indices were within the confidence limits of the published formulae.

- Kangaroo monitoring. The introduction of a 20 cent payment for heads in 1977 resulted in considerably improved head collections from some 'chillers', but failed to induce skin shooters (the majority) to use available 'chillers' merely to store heads. Collections are continuing from eight sites by Mr N. Jonsen, Overseer (Hermitage). Head collecting gives the dental and other material on which age studies are based.

- Tooth development. The study of kangaroo tooth development was augmented by additional material including several macropodids, embryo red deer (*Cervus elaphus* (L.)) and embryo bearded dragons (*Amphibolurus barbatus* (Cuvier)). Publication of the long-completed grey kangaroo study has been delayed because of the need for wax-plate reconstructions. Mrs S. Amos, Laboratory Attendant (Hermitage) has produced many reconstructions of developing teeth, and the additional reptilian and eutherian material has shed light on problems under discussion in the literature.

Mr P. M. Johnson, Senior Ranger (Pallarenda), continued his studies of wallabies in northern Queensland. He visited Hermitage to discuss his project work with the Chief Research Officer and made field trips to the Cairns area, Mount Surprise area, Dingo area, Atherton area and to the Richmond area.

At Pallarenda, project work on the rufous rat kangaroo (*Aepyprymnus rufescens* (Gray)) and the plain rock wallaby (*Petrogale* sp.) was completed and the colonies were released. This allowed the colonies of spectacled hare-wallabies, whiptail wallabies (*Marcopus parryi* (Bennett)) and black-striped wallabies (*Macropus dorsalis* (Gray)) to be increased to the desired size. Three male and three female wild-caught adult bridled nail-tailed wallabies (*Onychogalea frenata* (Gould)) were transferred to the Pallarenda centre to establish a breeding colony. Other caught macropodids obtained for yard studies included three Lumholtz' tree-kangaroos and three purple-necked rock wallabies (*Petrogale* sp.) together with single specimens of the antilopine kangaroo the northern nail-tailed wallaby and the northern rat kangaroo (*Bettongia* sp.).

Studies on the reproduction and age estimation of pouch young in the above macropodids proceeded along established lines. Further material is required to establish the taxonomic validity of the species *Bettongia tropica* Wakefield. Suitable cage conditions were established to maintain the musk rat-kangaroo (*Hypsiprymnodon moschatus* Ramsay) to be obtained in due course.

Mr P. J. Amos, Senior Ranger (Yeerongpilly), continued his studies of the potoroo (*Potorus tridactylus*) and assisted Mr McEvoy and Mrs Gleeson with their field studies in the Conondale Range. He also visited Hermitage for discussion of project work with the Chief Research Officer.

At Yeerongpilly measurements on pouch life and ageing of young of the potoroo were completed and prepared for analysis. Observations continued on the reproductive cycle of captive animals.

Possums

Dr J. W. Winter, Senior Zoologist (Pallarenda), continued his studies of possums in northern Queensland as well as commencing work on a fauna survey of the McIlwraith Range on Cape York Peninsula; he supervised the activities of Mr R. Atherton, Ranger, and Mr R. Russell. He visited Head Office to discuss project work and was involved in filming segments of the ABC-TV film 'The Rainforest' in the Cairns and Iron Range areas and on the Lamington Plateau. Field trips were made also to Mount Elliot, Mount Lewis and Mount Windsor, and McIlwraith Range.

Mr R. G. Atherton, Ranger (Pallarenda), accompanied Dr Winter on field trips to the Cairns and Iron Range areas, to Mount Elliot, Mount Lewis, Mount Windsor and McIlwraith Range as well as regular field trips throughout the Townsville region and to the Mount Fox and Atherton Tableland areas.

Field work on the ecology of the rainforest possums continued and additional data on distribution and diet, particularly of the herbivorous species, was obtained. It is planned to expand the field studies on diet and to initiate studies into other aspects of ecology in the coming year.

A major aspect of this project has been the establishment of animals in captivity at Pallarenda by Mr A. T. Haffenden, Animal Attendant.

Colonies of the Herbert River ringtail and the long-tailed pygmy possum (*Cercartetus caudatus*) are firmly established and a single spotted cuscus is thriving. Redesigning cages to provide flow-through ventilation and adequate insulation from the sun has overcome initial difficulties maintaining these animals during hot summer conditions. Suitable diets for these animals have now been determined.

Rainforest mammals

Further data on the distribution of rainforest mammals between Townsville and Cooktown was obtained during field trips to various localities. One of the largest southernmost patches of rainforest at Mount Elliot showed a depauperate rainforest fauna. Farther north it was established that the green ring-tailed possum (*Pseudocheirus archeri* (Collett)), the pale form of the Herbert River ringtail (*P. herbertensis cinereus* (Ramsay)) and the Bennett's tree kangaroo (*Dendrolagus bennettianus* De Vis) occurred at Mount Lewis and the Windsor Tableland. These localities include some of the most north-western portions of rainforest in the region. Routine collections of data continued at other areas. These with field data collected since 1974, are being prepared as distribution maps.

Koala

The long-term studies of the koala (*Phascolarctos cinereus* (Goldfuss)) made sound progress in the field.

- Oakey koala project. The project has continued with the emphasis placed on nocturnal observations of koalas to investigate social organisation. Population census work is now being carried out at wider intervals and it is eventually planned to reduce it to an annual census each September for an indefinite period to monitor the incidence of female sterility over a long term. This incidence of female sterility is being investigated in a population near Ipswich in co-operation with Mr A. Brown, Department of Veterinary Anatomy, Queensland University.

- Emerald koala project. Intensive field work on this population has now ceased. Future work on the population will consist of an annual census and tagging of adults and young each September.

Mr B. C. Lawrie, Ranger (Pallarenda), assisted Dr Gordon with his field studies of the koala and with the fauna survey of the Emerald Shire in central Queensland. He also continued work on a project to compare the present day bird fauna with that recorded by the explorer Gilbert at a number of historical sites in Queensland. He was involved in filming segments of the ABC-TV film 'The Bush' in the Lake Nuga Nuga area. He made field trips to the Blackdown Tableland area, Rockhampton area, Chinchilla area, Dingo area, Erythrina Creek area, Townsville area, Suttor Creek area via Nebo, 'Hillgrove' via Charters Towers and 'Valley of Lagoons'. He transferred from Emerald to Pallarenda where he commenced duty on 19 April.

Wombats

More sites of the Queensland hairy-nosed wombat (*Lasiorninus latifrons* (Owen)) were located near Epping Forest National Park, on 'Alinya', from which the animals disappeared about 40 years ago. The range of the wombat in this district has apparently been reduced in area by more than one-half since the country was first stocked. This contraction is probably still continuing, with the most recent withdrawal occurring from an area near the north-western corner of the park about 10 years ago, apparently coinciding with the drought years of the late 1960s. Because of cattle grazing, active conservation measures will be required urgently in the event of another major drought.

Rodents

Mrs J. E. Gleeson, Zoologist (Yeerongpilly), continued her studies of native rodent taxonomy and commenced work on a field study in the Conondale Range. Mr J. W. James, Zoologist (Hermitage), continued with his studies of water rats in southern Queensland.

A study of movements and trap efficiency using the allied rat (*Rattus assimilis* (Gould)) was commenced at a study area in the Conondale Range in south-eastern Queensland using Radio-telemetry equipment obtained from U.S.A.; grids have been established and the general topography and vegetation structure recorded on these.

Regular trapping of water rats continued at the Swan Creek study area (Darling Downs) until December. Difficulty has been experienced in locating suitable areas of bank not disturbed by cattle which impede trapping. Seven of the 18 animals tagged so far have been recaptured. All resident animals in the study area will continue to be tagged during the next 12 months.

Water-birds

Mr J. G. Blackman, Senior Zoologist (Pallarenda) as well as acting as Administration Officer at Pallarenda continued his studies of water-birds and wetlands in the Townsville region. He was involved in filming segments of the ABC-TV film 'The Coasts'. He visited Innisfail (Eubenangee National Park) in the course of a collaborative study with CSIRO on land changes.

Mr D. K. Locke, Ranger (Pallarenda) assisted with the water-bird project and undertook much of the work involved in the establishment of the aerial photographic survey unit. He also participated in television documentary filming and made field trips to Innisfail, 'Hillgrove' Station and 'Valley of Lagoons'.

- Brolgas. Routine collection of data on population size and dispersion at local areas continued throughout the year. Systematic aerial surveys combined with ground searches were used successfully for the first time to locate nests at several coastal areas. As an adjunct to the brolga studies, work was commenced in November to establish an aerial photographic survey unit. This involved modifications to a single engine low-wing Cherokee 6 aircraft owned by the Townsville Aero Club, and the design and construction of a camera mount, camera control system and a data recording system. The unit was completed and operational by April.

It will be applied initially to population censuses of brolgas and analysis of their coastal wetland habitat. It is intended to develop a broad basis in aerial photographic techniques within the water-bird project for subsequent wider application to other research and management problems.

- Bulkuru Sedge. The joint project with Miss J. Powell (Botany Department, James Cook University of North Queensland) on the life history of the bulkuru sedge (*Eleocharis dulcis* (Burm. f.)) continued with field and laboratory studies. A sampling method was established to estimate numbers, sizes and distributions of tubers on marked plots. Field work has involved regular sampling on these plots. Laboratory work has resulted in successful growth and development of plants from tubers in hydroponic solutions within glassaquaria. These plants have produced tubers; attempts to germinate seeds have been unsuccessful.

- Magpie geese and brolgas. The sequence of moult of the magpie goose has been followed in a group of wild-caught birds now aged from three to six years, and a flock of birds reared from incubated eggs and now aged about 20 months. Fortnightly measurements over a complete moult cycle of the older birds were completed. Measurements of a complete adult moult cycle in the young birds are in progress. The sequence of moult has been established although further analysis is required to determine its duration. Similar measurements continued on the

moult of captive brolgas and these had progressed through approximately one-half of a complete adult moult cycle. The duration of moult may be similar to that of the magpie goose but the sequence is more complete. Comparative work on the pattern of growth of both species in captivity continued. Measurements for the magpie goose were nearing completion at the end of the period.

Turtles

Mr C. J. Limpus, Zoologist (Pallarenda), continued his studies of sea turtles and crocodiles in northern and southern Queensland and supervised the activities of Mr B. J. Lyon, Mr D. G. Walter, and Ms V. Baker. He visited Head Office in relation to his research activities and attended an IUCN-World Wildlife Fund meeting in Toronto and visited a turtle research centre in Hawaii. He made field trips to the Croydon area and Mount Surprise area on crocodile work and to Heron Island, Mon Repos, Torres Strait and Raine Island.

Mr D. G. Walter was appointed to assist in studies of sea turtles. He accompanied Mr Limpus on field trips to Heron Island and Mon Repos. Otherwise he was fully occupied with collation of data and maintenance of equipment.

Ms V. Baker assisted part-time with studies of turtles at Mon Repos and at Crab Island (Gulf of Carpentaria).

A major part of the Queensland turtle research continued to be funded by a grant from the Australian National Parks and Wildlife Service for the 1978 calendar year. Most of this work undertaken has been reported in Interim Reports to the ANPWS. The 1977-1978 turtle nesting season has been the tenth season of continuous monitoring of Mon Repos and the fourth for Heron Island. In addition, 12 other rookeries were monitored. A total of some 2 740 new taggings of six species of sea turtles and 450 recaptures of previously-tagged turtles were recorded. In addition 32 209 hatchlings were marked and released from Mon Repos. It would have been impossible to accomplish the vast amount of field work and data collection in this project without the willing assistance and support of many students and teachers who participated in the programme. The study of feeding group populations of sea turtles (the 'turtle rodeo') continues to generate many new insights into turtle biology.



Crocodiles

Mr B. J. Lyon assisted Mr Limpus with his studies of crocodiles, the fauna survey of the Mitchell River and to a lesser extent with the turtle studies. He also continued collecting of reptiles in the Townsville district. He made field trips to the Gulf of Carpentaria area, Mount Surprise, Mon Repos and North West Island.

Techniques of capturing wild freshwater crocodiles (*Crocodylus johnstoni* (Kreff)) and collection of field data about these were improved. A method of evacuating the stomachs of live crocodiles is providing substantial data for food studies. Recaptures after 12 months have shown that the methods of tagging and tail marking are effective for identifying individual crocodiles. Routine capture and recapture procedures can now be undertaken to study growth and movements of the freshwater species in the Lynd River System. During the year, 171 crocodiles, including 36 new-born, were tagged for the first time and 23 were recaptured from previous taggings in the study area. Students and teachers were invited to participate in this difficult, labour-intensive project; the response to and the success of this exercise has been encouraging. As with the turtle project involving technical workers outside the Service, this method of conducting projects has appreciable liaison value.

Orchids

Circumstantial evidence suggests that orchids and some ferns indigenous to Queensland are coming under increasing pressure from illegal collectors, in particular in the Iron Range area. Some species of orchids are rapidly becoming endangered from illegal collecting and land clearing.

Orchids

Field studies comprised mainly study of material in the course of the Data Bank Section studies of Dr P. S. Lavarack.

Caves

Plans were made to commence detailed studies of the natural landforms of the State, in the first instance referring to caves. This important component of the national park estate is of limited extent; it is fragile, and is already subject to visitation. A more detailed knowledge of Queensland's caves for management purposes is clearly warranted.

Data Bank

This Section functions to maintain and co-ordinate all field data-collecting exercises. Apart from the obvious necessity to prepare inventories of the natural fauna, flora and landform estates, there is an increasing need to store material responsibly and to retrieve data effectively.

Orchids

Two new species of orchids were described (*Dendrobium tozerensis* P. S. Lavarack and *Oberonia carnosa* P. S. Lavarack), five species new to Australian records were discovered (*Bulbophyllum masdevalliae* Krzl., *B. leratii* (Schltr.) J. J. Sm., *Taeniophyllum malianum* Schltr., *Eulophia pulchra* (Thou.) Lindl. and *Schoenorchis sarcophylla* (Schltr.), and a species new to Queensland's records was found (*Didymoplexus pallens* Griff.). Work commenced on the origin

of the Australian orchid flora and inter-relationships of the flora of the Malaysian-Australian-Pacific area in collaboration with an officer of Sydney Botanic Gardens.

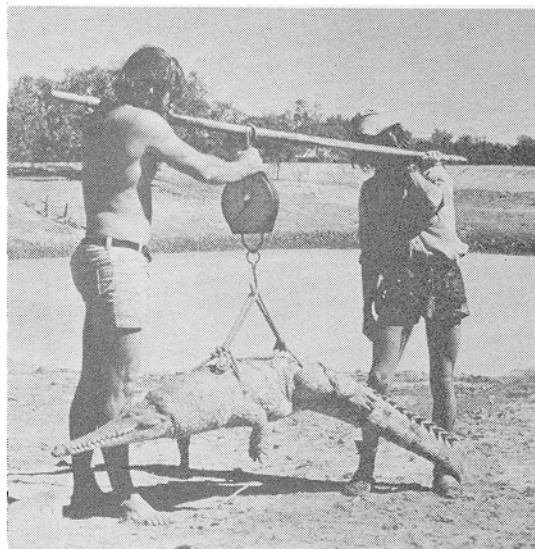
Within the area of plant taxonomy, in particular, the opportunity has been taken to explore existing flora conservation measures in detail. Dr P. S. Lavarack, Senior Botanist (Yeerongpilly) and a member of the Research Committee of the Australian Orchid Foundation, visited Western Australia (in October 1977) on the Council of Nature Conservation Ministers' Working Group on Endangered Flora; field observations of the increasing trade in flora, based on the wildflowers there, and comprehensive discussions on appropriate legislation, were conducted.

Data Bank

Routine identification of fauna survey specimens has occupied much time. The rationale for, and organization of a data bank is being investigated by Mr F. R. Allison, Zoologist (Yeerongpilly). Work on the listing of Queensland fauna continues with the emphasis on preparing comprehensive list of the bat and frog species. The bat genus *Tadarida* has been revised and work has commenced on the revision of the genus *Nycticeius*. Revision of the Provisional List of Queensland Fauna has commenced. Parasite studies continue.

Taxonomy

A major requirement of the Data Bank Section concerns taxonomy and nomenclature in order that conservation activities are directed towards appropriate identities. Close liaison is maintained with the Queensland Museum and the Queensland Herbarium. Reference plant collections were developed further and some research collections of animals were maintained. A botanist and a zoologist serve as professional taxonomists and their projects illustrate topics of concern.





Land-use planning

The work of this Section is concerned with assessing the natural resources of the State of Queensland in relation to land uses and land tenure.

These assessments, initially resource evaluation, take the form of describing and mapping large areas of the State which have been defined and divided by natural boundaries into a convenient series of land systems and units.

Judgements on land form capability, present use and stability tie in with wildlife capability estimations. Reserve land priorities are based on such factors as species diversity and distribution, amount of disturbance present, and size.

The Wide Bay/Burnett Region Study commenced and is now nearing completion.

Wide Bay/Burnett Region Landforms

The task of Rev. S. McF. James, District Experimentalist (Kingaroy) is to assess the diversity of landform, land capability, land use and land suitability for the region. This information is translated to a working map and draft sheets are now in the course of production. Base map and soils map sheets are drafted and Landform mapping from aerial photo-patterns is in draft-sheet form. All air-photo interpretation has been checked via ground truth surveys.

Wide Bay/Burnett Region Flora

This project under Mr J. P. Stanton, Senior Botanist (Yeerongpilly), is investigating a concept of vegetation themes whereby plant communities may be defined by a few species only. At this juncture much time is involved in air-photo interpretation and ground truth field transects. This study obviously has major practical implications; and could lead to much time saving in initial land use surveys.

Wide Bay/Burnett Region Fauna Habitat

Techniques to resolve this complex evaluation problem were subjected to further testing by Mr J. H. D. Martin, Senior Zoologist (Yeerongpilly), utilizing as a base for habitat the data obtained in the landform and flora studies. Results have continued to be inconclusive and work elsewhere has proceeded in order to check appropriate methodologies.

At the same time, results have clearly indicated the necessity of resource evaluations and priority rankings for land and land use across the State. Sound progress in the two regions surveyed to date—Moreton and Wide Bay/Burnett—culminated in the proposal for a Regional Resources Map of Queensland. This long-term project will provide a sound appreciation of the existing major areas of natural resources in the State, with priorities for reservation at both regional and State level.

A concurrent approach to land reservation has involved the examination of the numerous *ad hoc* reservation proposals received by the Service. Branch officers have undertaken evaluations of land that is distributed throughout the State. The following table sets out the situation regarding these proposals as at 30 June, 1978, compared with the 1976-77 and 1975-76 figures (in parentheses).

State of proposal	No.	(1976-77)	(1975-76)	Per cent	(1976-77)	(1975-76)
Inherited by NPWS as already evaluated but not yet gazetted reservations	Nil†	(115)	(179)	Nil	(17.1)	(30.6)
Evaluated by Research and Planning Branch field staff	245	(178)	(73)	35.3	(26.4)	(12.4)
Presently being evaluated by Research and Planning Branch field staff	152	(139)	(65)	21.9	(20.7)	(11.1)
Still to be evaluated	297	(241)	(269)	42.8	(35.8)	(45.9)
Totals	694*	(673)	(586)	100.0	(100.0)	(100.0)

*Excluding 83 proposals gazetted or discarded since inception of NPWS.

†Recategorized.

The Section also has regular involvement with the Co-ordinator-General's Department for advice in assessments of areas likely to be subject to development; these environmental impact statements and environmental impact assessments ranged across the country and involved a wide variety of potentially disturbing factors, from roads, bridges and power transmission lines to canals, wetland drainage and sewage disposal.

Management Research

The Management Research Section was established during 1977 to conduct research into applied aspects of nature conservation. The previous research programmes of staff have provided a basis for a range of research projects extending from the effects of fire on arid zone grasslands in the far south-west of the State to the effects of clearing of rainforest on the indigenous fauna. Five graduates and seven technicians collectively are involved in a total of six major and six minor research projects.

The division of tasks for the time being is based on classification of the State into eight zones which appear to have characteristic disturbance agencies. These are—vine forests, saltwaters, Melaleuca woodlands and forests, Acacia woodlands and forests, grasslands, Eucalypt woodlands and forests, shrublands, and freshwaters.

Vine Forests

• A study of the green catbird (*Ailuroedus crassirostris* (Paykull)) as an indicator of the effect that various forest management practices may have on the conservation of the species is underway in the Conondale Range under the direction of Mr J. S. McEvoy, Senior Zoologist.

The study, assisted by Ms S. Crafter, has involved colour banding of a total of 35 catbirds on a 6.02 ha study site.

In excess of 200 recaptures to date have provided the moult patterns and an annual food cycle. Behaviour is being recorded and the recent acquisition of miniature telemetry equipment is expected to both accelerate and enhance the study.

• The survival of avian species in habitat isolates. Survival of populations of birds isolated in remnant patches of rainforest following clearing operations is being studied by a technique of banding individuals and recording such factors as survival and migration.

• The effect of disturbance on the fauna of a freshwater stream. The stream, which has its source in an area of natural forest, flows through an established exotic pine (*Pinus radiata* D. Don) plantation. Emphasis is being placed by Mr K. R. McDonald, Senior Ranger (Yeerongpilly) on studying the amphibian fauna and parameters measured include pH and temperature.

Acacia Woodlands and Forests

Red kangaroo (*Macropus rufus* (Desmarest)) biology and the effects that fire, grazing, and the location of the dingo barrier fence may have on the species are being studied in the far south-west of the State by Dr M. J. S. Denny, Zoologist. With the assistance of Mr D. G. Read and volunteer students, large numbers of red kangaroos have been collared and their movements along either side of the dingo barrier fence monitored. Several grassland tracts have been burnt and the relationship during regeneration of red kangaroos to such areas is being studied. The work is described in a series of comprehensive reports and publications.

Grasslands

The effect of current agricultural practices on the stubble quail (*Coturnix pectoralis* Gould) is being investigated in the Warwick District by Mr D. H. C. Seton, Senior Ranger. Reproduction of the species in aviary conditions is being studied and free-living quail are being mist netted and banded to assess survival rates in the face of current land practices.

Eucalypt Woodlands and Forests

Studies by Mr A. K. Searle, Senior Ranger (Hermitage) of the fallow deer (*Dama dama* (L.)) and the red deer are well underway. Field studies are continuing and a marking program for both species is about to commence. A large deer trap has been constructed on a Brisbane Valley property for this purpose. A study of the reproductive success of red deer under natural conditions is entering its second year and while too early to quote results, some features of the breeding success rate are of considerable significance in view of the present upsurge in popular interest in deer farming.

Shrublands

Vegetation on deep sands, designated shrublands, is being investigated by a botanist (Mr C. J. E. Bell) appointed in November, 1977. The scope of the study includes vegetation on all coastal sand dunes and sand islands together with vegetation on the deep sands encountered on several island national parks. Maps delineating vegetation types are being prepared as a first step. The study could be the first by the Service to employ satellite photography.

Branch Extension

Scientific staff must relate results not only in precise technical terms but also in broader manner for general Service use. This applies particularly where information is required urgently for management purposes. All six films in the natural history documentary 'Exploration North' with the Australian Broadcasting Commission were completed. The first pilot audio-visuals proposed to illustrate all aspects of Branch research and planning activities were prepared by Mr D. G. McGreevy.

At the individual level, students in the sea turtle and crocodile programmes volunteered 193 person-weeks and this contribution was invaluable.

Conferences of technical staff were held periodically.

Outside the Service, officers attended a range of technical meetings, symposia and workshops, as follows: 75th Congress of Royal Australasian Ornithologists Union, Adelaide, S.A., 27 August–1 September; 'National Environmental Education Conference', Department of Environment, Housing and Community Development/Moreton Region Environmental Education Council, Brisbane, 14–17 July; 'Working Group on Endangered Fauna', CONCOM, Canberra, 19–21 July; Annual General Meeting of Australian Rangelands Society, Broken Hill, N.S.W. 7–9 July; 'IUCN south-east Asian Conference on Biosphere Reserves', Binna Burra, 31 October; 'Technology and the Environment', Australian Council for Education through Technology, Brisbane, 11–13 January; and 'Biological Problems in the Reconstruction of Quaternary Terrestrial Environments', Canberra, 21–22 February. In the course of these, visits were made to a number of interstate Government Departments, Universities, Museums and other institutions.



Queensland. Branch officers served on a wide Seminars on a variety of topics ranging from satellite imagery to oil pollution to land data banks were attended in Brisbane and elsewhere in range of technical committees, for example the Field Trips Committee (Queensland) for the 1980 International Botanical Congress.

Conferences of senior Branch officers were held in Brisbane on 10–11 October and 3–5 April.

A number of overseas and interstate research workers visited Branch staff in various parts of Queensland; the following are some of those—Professor Detlof Schultze (West German); Miss Helen Grosvenor (Rhodesia); Mrs Andree Millar (Papua New Guinea); Dr Jarry Renz (Switzerland); Professor Abu Giduru (University of Khartoum); Dr G. Bean (University of Fiji); Miss R. Plant (National Museum of Victoria); Mr D. F. Blaxell (Sydney Botanic Gardens); Mr C. B. Faith (Monash University, Victoria); Dr R. Taylor (CSIRO, Canberra); and Professors J. Burton and B. Richards (University of New England, Armidale).

Special Reports

- Allison, F. R., Report on Meeting of Australian Mammal Society at MacQuarie University 19th-21st May, 1977, and a visit to the Australian Museum, Sydney.
- Allison, F. R., Report on AGM of Australian Mammal Society, held at Flinders University, South Australia and visits to the South Australian Museum, Adelaide in May, 1978.
- Anon (1978), Red kangaroo arid zone investigations, *Interim Report to Australian National Parks and Wildlife Service*, 3 pp.
- Denny, M. J. S. (1978), Red kangaroo arid zone investigations, *Interim Reports to Australian National Parks and Wildlife Service*, 22 pp. total.
- Dowling, R. M. and McDonald, W. J. F. (1976), Moreton Region Vegetation Map series, Explanatory Booklet for Brisbane, Botany Branch, Department of Primary Industries Brisbane, 20 pp. + map.
- Kirkpatrick, T. H. (1978), Kangaroo population monitoring results from head collections 1977, (Report for) *National Parks and Wildlife Service of Queensland*, 12 pp.
- Lavarack, P. S. (1977), Notes on *Nepenthes mirabilis* and other carnivorous plants in Queensland, *Carnivorous Plants Newsletter*, 6, pp. 49-50.
- Lavarack, P. S. (1978), The Cooktown orchid: Queensland's floral emblem, (Report to) *State Public Relations Bureau, Brisbane*, 1 p.
- Lavarack, P. S. (1978), Cape York orchid project, *Continuing Submission to Australian Orchid Foundation, Canberra*, 50 pp.
- Lavery, H. J. (1977), Some technical activities of the National Parks and Wildlife Service, *The Ranger*, 10, (3), 3 pp.
- Lavery, H. J. (1978), Regional Resources Map of Queensland, *Initial Submission to National Parks and Wildlife Service of Queensland*, 10 pp.
- Limpus, C. J. (1977), Queensland sea turtle project, *Interim Report to Australian National Parks and Wildlife Service*, 48 pp. total.
- Limpus, C. J. (1978), Sea turtles of the northern Great Barrier Reef, *Paper to Workshop of Great Barrier Reef Marine Park Authority, Townsville, April, 1978*, 5 pp.
- Powell, Jennifer and Blackman, J. G. (1977), A study of the bulkuru sedge *Eleocharis dulcis* (Burm. f.) Trin. in relation to the brolga *Grus rubicundus* (Perry), *Proc. Sympos. Aquatic Res. Southern Qd*, 22-23 Sept., 1977, Q.I.T.
- Winter, J. W. (1977), McIlwraith Range closed forest fauna survey, *Initial Submission to Australian National Parks and Wildlife Service*, 27 pp.

Publications

- Blackman, J. G. and Locke, D. K. (1978), Nocturnal flying height of a dollarbird, *Emu*, 78, 163.
- Burbridge, A. A., Bolton, W. B., Dempster, J. K., Eberhard, I., Fox, A. M., Henderson, R., Kirkpatrick, T. H., Murrel, P. and Mills, G. D. (1977), *The Status of Kangaroos and Wallabies in Australia*, AGPS, 20 p.
- Gordon, G. and McGreevy, D. G. (1978), ed. T. J. Bergin, The status of the Koala in Queensland, in *The Koala, Proceedings of the Taronga Symposium on Koala Biology, Management and Medicine Sydney 11th and 12th March, 1976*, Zoological Parks Board of N.S.W., Sydney, pp. 125-31.
- Gordon, G. and Lawrie, B. C. (1977), The rufescent bandicoot, *Echymipera rufescens* (Peters and Doria) in Queensland, *Aust. Wildl. Res.*, 5, pp. 41-5.
- Hodge, M., Hamilton, A., Hockings, D. and Lavarack, P. S. (1977), *A Horticultural Guide to Australian Plants*, Sec. 3, Society for Growing Australian Plants, Brisbane, 32 pp.
- Kirkpatrick, T. H. and Amos, P. J. (1977), Mammals and birds of Millmerran Shire, south-east Queensland, *Qd. J. agric. Anim. Sci.*, 34, 123-33.
- Kirkpatrick, T. H. and Searle, A. K. (1977), Mammals and birds of the Stanthorpe Shire, south-east Queensland, *Qd. J. agric. Anim. Sci.*, 34, 109-21.
- Lavarack, P. S. (1976) The Cooktown orchid—botany and history, *Aust. Orchid Rev.*, 41, 23-4.
- Lavarack, P. S. (1977), Notes on Queensland Orchidaceae, *J. Austrobaileya*, 1, 63-74.
- Lavarack, P. S. (1978), Blackmen's spears and orchids, *Aust. Orchid Rev.*, 43, 55-7.
- Lavery, H. J. (1977), Fauna in Queensland, *Queensland Year Book*, 1977, No. 37, Aust. Bur. Statistics, Brisbane, 2, (6) pp. 33-42.
- Lavery, H. J. (1978), Introduction, The Brisbane River, *Proc. R. Soc. Qd.*, 89, 65-6.
- Limpus, C. J. (1978), ed. P. Rosenberg, The venom apparatus and venom yields of sub-tropical Queensland Hydrophiidae, in *Toxins: Animal, Plant and Microbial*, *Proc. 5th Internat. Sympos.* Pergamon, New York, pp. 39-70.
- Mardon, D. K. and Allison, F. R. (1978), A new species of *Coorilla* Dunnet and Mardon (Siphonaptera: Ischnopsyllidae) with records of other fleas from Queensland, *J. Aust. ent. Soc.*, 17, 167-70.
- McEvoy, J. S. (1977), Fauna survey of the Brisbane Airport Area, In *Brisbane Airport Development Project Environmental Study*, Volume III Terrestrial Study Factor Reports. March 1974, AGPS, pp. 47-52.
- Miller, J. D. and McDonald, K. R. (1977), A note on eggs and hatchlings of the blind snake *Typhlina nigrescens* Gray, *Vic. Nat.*, 94, 161-4.

Appendix

Receipts

	\$	\$
Fauna Permit (Kangaroo & Duck)	46 322	
Sale of tags (Kangaroo)	211 999	
Fauna Royalty	8 270	
Permit to Remove or Import	5 091	
Permit to Exhibit Live Fauna	7	
Permit to Keep Live Fauna	6 387	
Fauna Dealers Licence Class A	10 100	
Fauna Dealers Licence Class B and C	2 340	
Registration of Aviary	865	
Publications	206	
Miscellaneous—Sale of Maps, Grazing Permits, Permits (Scientific Fines, and Rent)	10 761	

Scale of Fees for Permits and Licences as at 30-6-1978

	\$
For an open season fauna permit (personal use)	5.00
For an open season fauna permit (taking for sale)	25.00
Kangaroo and Wallaby tags (according to species)	each 0.30
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	0.10
• Other fauna	2.00

Expenditure

Revenue Fund

	\$	\$
Salaries		1 305 545
Contingencies		
•Wages, Travelling Expenses, Maintenance and Incidentals	1 548 125	
•Fares, Printing, Mapping, Stores, etc.	46 200	
•Cash Equivalent of Long Service Leave	6 447	1 600 772
Environmental Parks and Reserves		99 993
Maintenance and Incidentals—Kinaba Island Wildfowl Refuge		50 000
		<u>\$3 056 310</u>

Loan Fund

	\$	\$
Capital Works and Development on National Parks	800 000	
Capital Works and Development on Regional Centres	174 540	
Acquisition of National Parks	425 458	
		<u>\$1 399 998</u>

Trust Funds

Commonwealth Grants for National Parks and Wildlife Services Fund—		
Acquisition, Research, Surveys, etc.		404 247
National Parks and Wildlife Service Grants Fund—		
Research, Development, etc.		217
		<u>\$404 464</u>

Development and Maintenance Works Programmes 1977–78

Overall distribution of expenditure

Management unit	Maintenance	Development
	\$	\$
Management and Operations Branch (including Wildlife Section)		
Administrative and operating costs	213 034	102 307
National Parks		
Brisbane Region		
Lamington	69 430	21 762
Springbrook	23 041	16 024
Tamborine	33 456	6 260
Natural Bridge	8 801	2 412
Burleigh Heads	9 972	7 112
Mt. Glorious	28 570	6 088
Mt. French	656	—
Cunningham's Gap	24 404	2 176
Queen Mary Falls	564	1 006
Girraween	42 469	7 835
Regional Costs—Not allocated to individual parks	1 942	43 873
Total	<u>\$243 305</u>	<u>\$114 548</u>

Management Unit	Maintenance	Development
Regional Centres	\$	\$
Brisbane (Head Office) Development of photographic services (Technical Service Branch)		97 718
Moggill—Minor works		9 362
		<u>107 080</u>
Pallarenda (Townsville) Equipment, landscaping and development		66 148
Hermitage (Warwick) Equipment and minor works		1 312
Total		<u>\$174 540</u>
Gympie Region		
Bunya Mountains	50 774	4 280
Crow's Nest and The Palms	326	3 499
Ravensbourne	21 086	8 087
Mapleton	7 821	9 103
Kondalilla	15 732	7 891
Noosa Heads	37 070	11 568
Cooloola	14 364	50 010
Fraser Island	9	701
Woodgate	11 506	11 389
Robinson Gorge	923	16 278
Auburn River	—	—
Regional Costs—Not allocated to individual parks	2 391	1 299
Total	<u>\$162 002</u>	<u>\$124 105</u>

Trust Funds Expenditure for 1977–78

Research and Planning Branch

	\$
Orchid Survey of North Queensland	125
Fauna Survey—Kilcoy Shire	1 386
Queensland Sea Turtle Project	16 655
Red Kangaroo Survey—Arid Zone Investigations	15 977
McIlwraith Range Survey	3 749
Total	<u>\$37 892</u>

Management and Operations Branch

Carnarvon Tourist Project	23 048
Fraser Island Grant	143 432
Total	<u>\$166 480</u>

Administration Branch

Land Acquisition under the Commonwealth State Grants (Nature Conservation) Act	200 000
General Trust Fund	92
Total	<u>\$200 092</u>
Total Trust Funds	\$404 464

	\$	\$
General Expenditure		
Administration		
Administrative and operating costs	434 991	
Fares, Printing, Mapping Stores	46 200	
Cash equivalent of Long Service Leave	6 447	
Technical Services		
Administrative and operating costs	59 358	
Research and Planning		
Administrative and operating costs	153 807	
Acquisition of National Parks		
Cost of land		404 078
Search and legal costs		21 380
		<u>425 458</u>
Total	\$1 600 772	\$1 399 998

	\$	\$
Rockhampton Region		
Whitsunday Management Area (Island Parks Gloucester to Pentecost Is.)	95	3 438
Conway	30 357	28 002
Cumberland/Newry Management Area (Island Parks Lindeman, Brampton and Newry Groups)	839	2 361
Seaforth	33 427	7 428
Eungella	15 660	32 950
Cape Palmerston	18	21
Yeppoon and Islands	18 137	8 861
Heron Island		—
(Heron Island, Capricorn and Bunker Groups)	132	—
Carnarvon	38 476	116 713
Fitzroy Caves		3 035
Regional Cost—Not allocated to individual parks	652	3 124
Eurimbula		46
Total	\$137 793	\$205 979

Cairns Region		
Chillagoe	22 583	77 391
Eacham	18 497	46 908
Baron	5 053	7 859
Green Island	1 040	97
Mt. Spec	9 933	7 301
Palmerston	11 420	35 723
Jourama	9 146	9 451
Ravenshoe	416	501
Wallaman Falls	7 229	3 096
Magnetic Island	300 357	7 748
Cardwell	16 929	25 594
Lizard Island	135	1 269
Regional Cost—Not allocated to individual parks	6 488	12 378
Mt. Elliot	17 566	17 745
Total	\$143 835	\$253 061

Management and Operations Branch	Total	\$899,969	\$800,000
---	--------------	------------------	------------------

Details of offences committed under the National Parks and Wildlife Act in the year 1977-78

Forfeiture of rifles	11
Forfeiture of traps	51
Forfeiture of carrying boxes	8
Forfeiture of birds	524
Forfeiture of fauna (live snakes)	2

Wildlife

Prosecutions	8
(Fines \$3 330.00, Royalty \$2 536.00)	
Warnings	16
Action Pending	21
Total	45

Parks and Reserves

Number of warnings	114
Number of actions	4
Pending action	11
Total number of breaches discovered	129

Fines \$635.00 + \$150.00 costs.

Legal action is pending on 25 unauthorized structures on Cooloolo National Park.

