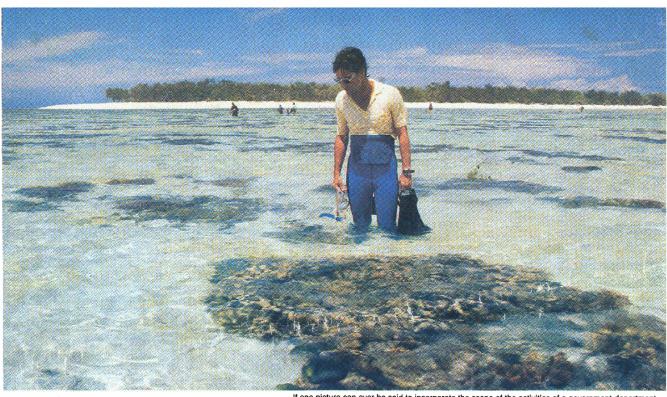


# Ringtail

Department of Environment Conservation and Tourism

Special edition of the Department of Environment, Conservation and Tourism quarterly newspaper

### The best environment for great recreation



### Minister's message

The creation and operation of the Department of Environment, Conservation and Tourism reflects the Queensland Government's co-ordinated involvement in the ever-growing public interest in these matters

Because almost every human activity is connected in some way with the environment, an elected government has a vital responsibility to the community to ensure that the environment is not upset to affect our well-being.



Mr Muntz

One department cannot be charged with the task of looking at every possible aspect of our environment.

I believe this department is carrying out its duties involving the most important elements of air, water and noise, co-ordination, nature conservation, and recreation in the form of tourism.

While this 1988 RNA Show display and this newspaper outline major aspects of department activity, every member of the community living in or visiting our vast state has the prime role of 'doing the right thing' by the environment.

This is not an onerous task but a simple one if we all work together and set the standards by good example.

We owe it to our descendants to pass on to them an outstanding part of the world in at least as a good a condition as it was bequeathed to use, hopefully a little better.

Think of the environment first!

June 100

Geoff Muntz Minister for Environment, Conservation and Tourism If one picture can ever be said to incorporate the scope of the activities of a government department, then the scene above is representative of the Queensland Government's Department of Environment, Conservation and Tourism.

As the tide ebbs, a wet-suited visitor makes his way across the coral reef for his recreation diving off Heron Island, central Queensland.

The air is clean, the only noise is of wavelets breaking, the Capricorn Marine Park waters are unpolluted allowing corals and fish to thrive, and national park status conserves the island's vegetation and wildlife.

The amalgamation of no fewer than 10 spheres of Queensland Government activity under the one department umbrella last December represented a milestone in the community's consideration of the environment, conservation, and recreation within the term 'tourism'.

While some of the practicalities of amalgamation are still to be determined, the operations of the new department this year give promise of a most effective agency within government and in the community's view.

A corporate services division is providing a strong base for department activities.

Department responsibilities are grouped broadly as:

Environment — Noise abatement, air pollution, water quality, and environment coordination.

Conservation — Queensland National Parks and Wildlife Service, Brisbane Forest Park, Fraser Island Recreation Board

# Seeking a better lifestyle

(with the Queensland Forestry Department), and Raine Island Corporation.

Tourism — Queensland Tourist and Travel Corporation, an independent statutory authority.

Legislation to be introduced in the Queensland Parliament soon will amalgamate some functions legally, and create recreation/tourism opportunities across several Crown tenures.

Cabinet will be asked to approve the staffing structures and the scope of department divisions for best use of resources and to avoid duplication of effort.

The breadth of meaning of the terms 'environment', 'conservation', and 'tourism' is so great one government department could not be

expected to cover every aspect of activity which involves individuals, groups and companies, communities, and government at local, state, national and international levels.

This newspaper outlines the major activities of the Department of Environment, Conservation and Tourism as presented in different forms in the 1988 RNA Show display.

Turn the pages to find out about managing wildlife, environment co-ordination, giving information, managing natural areas, managing for recreation, monitoring environmental levels, providing advice for industry, the Brisbane River Committee, and hints how you can helo.



Wildlife ranger examines an echidna, a fairly common Australian animal but not seen often by urban residents. Its spines may be a great deterrent to animals like dogs but its slow movements make it no match for vehicles.

# Wildlife needs good habitat

Responsible wildlife management covers much more than protection. Habitat conservation is the key to the continued survival of any species in the wild. All animals have preferred habitat or habitats.

Some species like the common brushtail possum are tolerant of a wide variety of conditions and are found in many places. They may prefer some habitats over others.

Other species like gastric brooding frogs are found in limited areas seemingly only in times of certain conditions.

For reasons of size or mobility, some species require large areas to meet their daily requirements. Others need only very small areas.

In whatever habitat they live, animals must have certain basic needs filled. These include food and places to breed and raise their young successfully as well as protection from weather and enemies.

Research reveals not only the kinds of animals which live in an area but their habitat preferences. Many species vary in number with seasons. They may move about following food

sources or with changes in weather or season.

To properly manage any species of animal, information on breeding, length of pregnancy (gestation period), and usual number of young is important.

Also necessary are the average lifespan, age at first breeding, how many times it breeds and the number of young it produces in a year, and the survival rate of young.

Such observations need to be made over a number of years. Most details will change over times of drought, in wet years, and in average years.

Animals should be managed as species or populations, not as individuals. For any population to continue, there must be a good number of healthy breeding individuals.

Each area has a carrying capacity — the number of individuals of a species that can be supported in a healthy condition without the area deteriorating.

Animals in excess of that capacity must be able to move elsewhere. If excess animals are confined, often they will die from stress or disease.

Their condition may become so poor they do not breed. In the

process, they may alter the habitat so it will support only fewer animals.

Natural predation is one way excess animals are taken from an area and the animal population and habitat remains healthy

Some animals, specially smaller ones, are intolerant of the nearness of people. Many were nearer widely distributed and disturbance has resulted in their decline in numbers.

For them, undisturbed habitat is essential.

Introduced herbivores can graze the same plant species as native animals. They trample vegetation or eat grass tussocks making nesting for small animals impossible.

The provision of permanent water supplies has also had an effect on native mammals. They can now be year-round rather than seasonal residents of an

Corridors linking areas of natural habitat are important. They allow seasonal migrations through what otherwise might be difficult terrain.

No matter how well we protect animals, we must keep habitat to keep the animals.

# Co-ordinating unit

The role of the Department's environment co-ordination unit is directed to co-ordinating consideration of matters involving the environment within the Queensland Government and its agencies.

In this context, 'environment' refers not only to the physical and natural systems like landscape, plants and animals but also the social and economic framework.

In particular, the unit has a central role in the Government's impact assessment process. By law, State Government authorities must take into account environmental issues in evaluating whether a development, government or private, should proceed and if so under what conditions.

In attempting to consider the environmental impact of development projects, it is essential to take account of other interests in the physical vicinity and demands on or use of the systems involved.

This requires access to planning information sources as well as specialist advice.

To provide an effective service, specialists must be engaged and their disparate interests brought together through liaison.

The Department's conservation and environment divisions are major contributors particularly on the significance of habitat values, the conservation of flora and fauna and the 'pollution capacity' of a water or air body — the surrounding environment.

Environmental management in Queensland remains largely based on a system in which each agency is responsible for those environmental aspects of its activities. Yet legislation provides for an essential co-ordinating mechanism.

# central to govt.

This unit function ensures all environmental policies and requirements of government are considered, and that liaison between agencies occurs.

Such a mechanism extends to environmental relations with other governments, particularly in the area of project assessment, which might involve the Commonwealth or even the Australian Environment Council.

This body has a broad mandate to consider nationally important environmental issues. These include pollution, climatic change, waste management, land use, and hazardous chemicals to the environmental aspects of land use, forestry, and bushfires.

The role of the recently established unit is evolving. It is helping co-ordinate department technical activities which do not fall neatly into either the natural or physical environment areas.

Examples of this role include co-ordinating input into development of Queensland's economic development strategy, department involvement in international consulting, and implications of multifunction policies within Queensland to Ministerial consideration of infrastructure policy.

Unit input to these is mainly centred on the need for long-term sustainable development having regard to good environmental management and to keeping an awareness among decision makers of the environmental consequences, good and bad, of undertaking projects or policies.



Ranger answers the queries of a visitor to the Queensland National Parks and Wildlife Service's Burleigh Heads information centre on the Gold Coast.

### Providing all the answers

One of the Department's important functions is to inform the community about the activities of its agencies and to be able to answer visitors' questions.

This newspaper is but one form of information about the department. Collectively, more than 300 publications are available from card-sized reminders to detailed park guides, posters, and technical reports.

Answering written and telephone requests takes considerable staff time but this is considered well spent reflecting continued interest in the environment and conservation.

By far the most effective communication is

face-to-face with one or more of the 650 people who make up the department.

The list of addresses and telephone numbers on page 7 indicates the many opportunities you have to make your enquiries.

The list includes major offices in Brisbane, Gladstone, Rockhampton, Townsville and Cairns, and special information centres at Fleay's Fauna Centre, Burleigh Head, Brisbane Forest Park, Binna Burra (Lamington National Park), Gympie, and Cardwell

While no one is expert in all fields, you can expect a cordial response and a redirection for detail if necessary.



The provision of facilities and programs in Queensland's many natural areas provide recreation and tourism opportunities and contribute to enjoyable experiences for local residents, intrastate, interstate and overseas visitors.

Such areas include national parks, environmental parks, marine parks, state forests, and other lands and waters under government control.

In most areas, visitors may drive to reach natural areas and their attractions. Proper siting of roads ensures the attractions are not spoiled by unnecessary human interference.

Provision of picnic tables, fireplaces, barbecues, shelter sheds and toilets increase our enjoyment of the outdoors while lessening our impact.

Walking tracks are built for ease of access to many parts of these natural areas. Their slopes and construction encourages walking and minimizes damage to the natural environment.

Track lengths vary to challenge the fitness

Camping for one or more nights in a national park is a rewarding pastime for many thousands of people in Queensland each year. A properly-managed park caters for the needs of a wide range of people, many of whom seem to find extra energy in the great outdoors. Here a group enjoys a quick game near their tents after a day's walking in Bunya Mountains National Park.

# Managing parks for of the young and old. Some tracks have been developed to allow wheelchair use. Today, rainforests can be seen from canopy walks, and boardwalks give

Today, rainforests can be seen from canopy walks, and boardwalks give access to the secrets of mangrove areas and melaleuca wetlands.

In many areas, campgrounds have been provided. To ensure a quality experience and to prevent degrading surrounding natural areas, maximum visitor numbers are set. A 'first-in' campsite booking system applies the year round.

Permits are issued so campers can be aware of rules applying to the area, and so the Ranger knows where to find bush campers in an emergency.

Recreation in a natural area is restricted to activities compatible with its conservation in its natural state.

Walking along a graded trail with a minimum of signage is in keeping with its natural state.

Riding a trail bike or driving an off-road vehicle is not. In coastal areas, water skiing and speedboats are incompatible with swimming and fishing.

A properly planned and managed area can provide for a wide range of activities as demanding as bushwalking, abseiling and rock climbing or as relaxing as birdwatching or sky-gazing!

In keeping with this nature-based recreation, a variety of programs and activities can be offered to visitors.

These may include children's nature programs, crafts, guided walks, botany walks, birdwatching, spotlighting and stargazing.

These may be conducted by trained staff or keen volunteers with expertise in their fields.

The knowledgeable park manager also plans for the demand by visitors to be informed. Carefully prepared brochures can contain interesting details about an area's plants and animals, geology, history, and place in Queensland's diverse natural regions.

A clear walking track map can be the key to release a new page in the world of nature.

Proper and effective management of a natural area is very demanding but essential if the visitor is to have a quality nature-based recreation experience.

### Fires, weeds and feral animals have major effects

# Keeping that 'natural' look

In managing natural areas, their natural condition should be maintained as nearly as possible. This is a key point in the law governing Queensland national parks.

Only where vulnerable or threatened species of wildlife having specific habitat requirements are found should conditions be manipulated to ensure necessary conditions are met.

Research has shown that some species require habitat which has been burnt at intervals. For the ground parrot, this is between three and seven years.

The continued existence of this bird in wallum areas depends on controlled burning to produce a mosaic of burnt and unburnt habitat.

In many areas, prescribed burning is used to reduce the level of dead vegetation.

Such a fire protects park facilities and adjacent properties, and reduces the incidence of wildfires.

Aboriginals commonly used fire as a habitat management tool and Australian vegetation is well adapted to it. If fuel builds to high levels, fire intensity may be so great as to kill or discriminate against certain species. Too frequent fires have a similar effect.

The reduction of fire hazard is managed to ensure wildflowers and other plants and animals which cannot survive severe or frequent burns are protected.

Setting maximum numbers of people using park campgrounds and the siting of facilities are other means of managing natural areas to maintain their natural condition.

Feral animals and weeds are hazards to an area's natural condition. Feral horses, pigs, goats, cattle and donkeys compete with native animals for food, degrade natural areas and cause serious damage to wetlands and other fragile vegetation.

Large introduced herbivores trample fragile plants, crop grasses lower than native animals, and can churn wetlands into muddy wallows.

All such animals need to be controlled or where possible removed from natural areas. Control or absence is more likely to allow rare native animals and plants to survive if not flourish.

Rapid growth of weeds allows them to



Modern computers are powerful tools of analysis allowing for very detailed studies of areas provided sufficient data is supplied.

reach maturity before slower-growing native species can reach a size to compete successfully.

Not only do weeds choke native plants and restrict their access to sunlight but their more mature root systems absorb vital nutrients more successfully.

Herbicides have been used successfully at park boundaries to limit unwanted ground vegetation yet allowing tree species to survive.

Determining an area's 'natural condition' can be a difficult task involving searches

of explorers' diaries, historical records, and museum and herbarium records, and a range of maps.

Satellite and aerial photography and computers aid modern day analysis but there is no substitute for on-the-ground detailed surveys of flora snd fauna.

Checks and re-checks of survey data indicate subtle and occasionally marked changes of areas considered by the casual observer to be 'natural'.

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# Parks for the people



Campground

Picnic area Toilets

Bush camping No camping

Drinking water



W Access by water F Access by air

BCPV

V Suitable for conventiona vehicle
U Unsealed road. Four-wh

Campground fees A \$7/site/night up to six

B \$5/site/night up to six

ABCUW

FUW

#### Southern Queensland

Parks near Brisbane

Maiala (1140ha) on the D'Aguillar Range is managed as part of the 25 000ha Brisbane Forest Park. The park is ideal for day visits and picnicking, and offers scenic view of the coastal plain and walks through varied forest communities. Manorina is for camping and walking in the mist, Boombana is for bird-watchers, and Jolly's Lookout is for views and picnics. Booking centre: Brisbane Forest Park, The Gap (07) 300 4855.

开竹入从丛

Remnant volcanic plugs of rhyolite and trachyte with forest and heath vegetation. Mt Coonconvin (Crookneck) (113ha) at 523m is for climbers, Mt Beerwah (245ha) \$55m, Mt Tbrogargan (291ha) 393m, and Mt Ngungun (49ha) 236m are suitable for bushwalkers and families taking care. Information: Boerwah.

Moreton Bay parks 3 St Helena Island (74ha)

耳术性牙髓

An historic area off the Brisbane River mouth containing relics of a 19th century penal settlement. Regular ferry services from Manly and the Brisbane River. Access to historic ruins is by Manly and the Brisbane River. Access to instoric runs of guided tour only. School groups must contact the St He Field Study Centre (07) 396 0754. Information: St Helen

4 Moreton Island (15 400ha)

时付合人工之

This large sand island features 285m Mt Tempest, reputedly the highest sand peak in the world. The park covers 89 per cent of the island and contains freshwater lakes, heath, swamp, sand blows and open forest and unspolit beaches. Access by vehicular ferry, passenger boat or light aircraft. Booking centre: Moreton Island/Moggill.

计入标念

This popular day visit park on North Stradbroke Island features a water table window lake located 10km east of Dunwich accessible off the east coast road. Information: Moggill.

Gold Coast and hinterland Burleigh Head (24ha)

三十二人 3 11 平 10 12

This scenic park preserves small areas of rainforest, open forest and heath at the eastern end of the Tallebudgera Greenspace, a haven amid intense urban development. Walking tracks lead to lookouts and pleasant places of retreat. Information: Burfelgh Head.

**三级工人总针开创证** 

Enjoy our native wildlife in natural surroundings. Rainforest, open forest, rocky slope and wetland animals can be viewed from boardwalks. Special children and animals area. Kiosk. Admission fee. Information: Fleay's.

8 Pine Ridge (109ha)

②开付も入放

A remnant of the heath, swamp and woodland vegetation which once covered what is now the Gold Coast. Wildflowers in season. Boardwalks with wheelChair access. Information: Pine Ridge.

9 Tamborine Mountain (total 646ha)

Numerous relatively small reserves, mostly rainforest. Popular for day visits. Extensive walking tracks to waterfalls and lookouts. Information: Tamborine.

11 0 元 11 6 6 1 1 1 元 10 14 元 10 14

Four parks comprise a green mountain backdrop to the Gold Coast. Warrie offers extensive walks past waterfalls and through forest to lookouts. Gwongorella has tall eucatypts with rainforest guiltes. Wunburra is an area of wet eucatypt forest. Mt Cougal, for those venturing from the Currumbin Valley, "as rainforested pools and an old sawmill. Booking centra: Springbrook.

This interesting natural formation caused by cascading waters is set in an area of dense rainforest high in the Numinbah Valley. The park is popular for day visits but only the night-time visitor sees glow-worms in the cave under the arch. Information Natural Arch.

**计⑦开针总会点上"放之**国

Rainforest, eucalypt forest and heathland, magnificent views and waterfalls are features of this major park some 100km south of Brisbane. Extensive walking tracks and picnic facilities are provided on the park's northern half. Access is via Binna Burra in the north-east, Green Mountains/O'Reilly's in the north-west and several roads and tracks in the west and south Booking centres: Binna Burra, Green Mountains, Christmas Creek, Moggill.

Walking tracks Swimming

Barbecue Parks near Boonah

13 Moogerah Peaks (676ha) 平性怎么 声放 四

Complex of isolated volcanic peaks including Mt French, Mt Greville, Mt Moon, and Mt Edwards in the Fassifern Valley near Boonah. Predominantly open euclaylt forest with dry vine forest in the guillies and montane heath on exposed rock faces.

Mt Barney (11 000ha)

This mainly open forest and heathland park incudes the twin peaks of Mt Barney (1360m), Mt Lindesay (1191m) and Mt Maroon (965m). Largely undeveloped, the park is very popular with bushwalkers and climbers. Access from the Rathdowney/Boonah road. Booking centre: Boonah.

Scenic Rim Main Range (11 500ha)

新岳計会 A Z 热 画 🖾 BCUV

Bushwalkers often enjoy the rough trail along the Great Dividing Range from Mt Mistake to Wilson's Peak on the New South Wales border through rugged, often densely forested country. Picinic areas, camp grounds and walking tracks at Spicer's Gap and Cunningham's Gap cater for other visitors. Access from the Cunningham Highway. Booking centres: Main Range, Moggill, Warwick.

16 Queen Mary Falls (333ha)

平前 医太耳病 医巴

This two-part park east of Killarney features a 40m waterfall. A very popular picnic area in rainforest in the Condamine River headwaters. Information: Warwick.

Massive granite tors and outcrops tower over a diverse and often dense eucalypt and health vegetation in this park 30km south of Stanthorpe: Outstanding wildflower display in spring. Walking tracks along creeks and to rocky viewpoints. Very popular camping and picnic areas. Winter days and nights are cold. Booking centres: Girraween, Warwick.

四十二十二 一

Rugged gorges leading to the Severn River are a feature of this park reached via Stanthorpe or Ballandean. Dense forests of cypress pine and eucalypts cover hill slopes. No tracks but creek walking is easy. Booking centres: Cirraween, Warwick.

Parks near Toowoomba

四氢级黑耳合作来记

A remnant of cypress and brigalow vegetation which once partly covered the Darling Downs around a shallow lake. Popular for short walks, birdwatching and water sports. Booking centre:

20 Crows Nest Falls (962ha)

四年 松耳 含 生 异 阳

This large waterfall tumbles into a steep granite gorge. Walking tracks above and below the gorge. Popular for picnicking and swimming, Booking centres: Toowoomba, Moggill.

Ravensbourne (100ha)

四级工厂作用

This park off the Hampton-Esk road preserves a remnant of the wet sclerophyll and rainforest vegetation which once covered the surrounding countryside. Walking tracks and picnic areas are popular. Information: Crows Nest.

**山**回秋 1 4 4 5 6 1 4 7 6 14

Largest remaining area of bunya pine forest. Also features balds — treeless grassy areas — and open forest. Spectacuviews from extensive walking tracks. Winter nights are odd. Booking centres: Bunya Mountains, Toowoomba, Moggill.

Sunshine Coast and hinterland Peregian (93ha)

This small environmental park protects a low-lying wallum heath landscape. Short scenic walks across swampland and dunes to beach. Information: Gympie.

网络三人名伊莱伯

Kondalilla Falls is a feature of this rainforest park off the Maleny-Mapleton road. Walking tracks and popular picnic area. 37 Information: Kondalilla.

田園は八人名前年

A small park off the Mapleton-Kenilworth road with scenic views, a waterfall, rainforest and eucalypt forest walks. Information: Kondalilla.

A popular scenic coastal park featuring rocky coastlines, heath and rainforest. Extensive walking tracks to lookouts and coastal features. Self-guiding trail. Information: Noosa.

Cooloola Coast parks

27 Cooloola (40 900ha)

40 不甘食人工 6 放為 6 巴

An extensive park embracing coastal heathlands, coloured sand cliffs, rainforest, freshwater lakes, and the unspoiled Noosa River catchment. Access by boat from Tewantin and Boreen Point, and four-wheel-drive from Rainbow Beach and Tewantin. Camping areas at Freshwater and Double Island Point, along the Noosa River, and along the Cooloola Wilderness Trail. Booking centres: Rainbow Beach, Freshwater, Kinaba, Noosa,

28 Great Sandy (Fraser Island) (52 400ha)

四直阅读《八八位生》

This park preserves most of the northern end of the largest sand island in the world, Included are eucalypt woodland, health and swamp vegetation, and freshwater lakes. Campsites at Waddy Point, Dundubars and Wathumba Creek. Access by boat, four-wheel-drive and barge from Urangan, River Heads and Rainbow Beach, and by light aircraft. Vehicle access and special camping permits required. Booking centres: Rainbow Beach, Noosa, Gympie.

Parks near Bundaberg Woodgate (5490ha)

Pleasant beach scenery backed by sand dunes and coastal vegetation make this park an attractive holiday spot. Wallum heath wildflower displays in season. Access via Goodwood. Booking centres: Woodgate, Maryborough.

This small environmental preserves a turtle rookery on the coast east of Bundaberg. Turtles nest between November and January, Hatchings emerge from January to March. Information: Mon Repos, Maryborough.

**Upper Burnett** 

BCU

СV

四级合作开

四 圆 线 凡 人 生 生

This sandstone gorge, lush vegetation and dripping water are features of this popular park seen from walking tracks. Road access is from the Monto road via Monofrod. Private campground adjacent. Information: Maryborough.

This undeveloped park features the rugged peaks of Mt Walsh and the Bluff. Eucalypt forests on the slopes with dense vine and palm-filled valleys. A challenge for climbers and backpackers. Booking centre: Maryborough.

Central Queensland Central coast

开竹入之后山

BCW Popular group of eight continental island parks off Yeppoon. Open eucalypt forest, pandanus along the coast and tussock grassland on exposed windward sides. Campsites Humpy and North Keppel. Booking centres: Rosslyn Bay, Rockhampton.

F W Half of this densely vegetated coral cay is national park. Turtle rookery and seabird nesting area. Fishing and collecting are prohibited in the surrounding Marine Park. Information: Heron

U\_ 36 Masthead, Tryon Islands (total 46ha)

Typical coral cays with pisonia, pandanus and casuarina vegetation. Seabird nesting sites and turtle rookerles. Popular camping spots for self-sufficient groups. Access via charter boat. No engine-driven equipment permitted. Booking centre: Gladstonne

AW

North West Island (94ha) and Lady Musgrave Island (20ha)

Coral cays with large surrounding reefs. Safe anchorages. Popular for camping, diving and snorkelling. Access by charter boat. Booking centre: Gladstone.

Continued on page 6

#### Camping

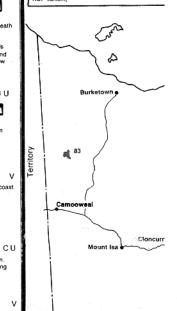
A written permit to camp is required camping on any national park in Queensland.

A site booking system operates for developed Service campgrounds. An application should reach the relevant office listed opposite 6-12 weeks befu proposed date.

Applications should include the group leader's name, address and vehicle/I number, number in the party, expect arrival date, proposed length of stay, number and type of camping structur vehicles, desired site and any alterna

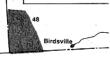
A stamped self-addressed envelope wi application will ensure a reply well in advance of the proposed date.

Late applications in writing, by phone person will be considered only if a s not taken,



- SUNTRAP Offices and agencies of Offices and agencies c symbol have or can ob maps showing access concerning national and parks, or write c/- PO Woolloongabba, Old 41 and Forestry Departmenumber of special national symbol.

RACQ members may c maps produced regular show national parks.



South Aus

Marine Parks 1:5 000 000 200

## Popular central, northern parks

38 Capricorn coast (107ha)

#### 四月四月以及

Double Head and Bluff Point south of Yeppoon are popular coastal parks for day visitors. Information: Rockhampton.

39 Mt Archer (1990ha)

#### 开入 旅 🛌

Environmental park on Rockhampton's eastern outskirts with a walking track passing through a va of vegetation. Information: Rockhampton.

40 Eurimbula (7830ha)

CU

A biologically important area where tropical and sub-tropical environments overlap. Coastal heath and swamps on deep sand backed by grassy eucalypt open forest with patches of rainforest. Booking centre-Gladstone.

#### A a

A high dune landscape backed by open forest and vine thicket with banksia health to the west. Deepwa Creek is an undisturbed freshwater stream. Located 70km north-west of Bundaberg. Booking centre: Gladstone.

Central Highlands
Blackdown Tableland (23 800ha)

#### 四三战工人会员和宋恒

Sandstone plateau high above surrounding plains with tall eucalypt forest, wildflowers and waterfalls. Popular camping and picnic spot. Access unsuitable for caravans. Booking centre: Blackdown Tableland.

43 Isla Gorge (7800ha)

#### 工人会员研究

This park preserves deeply dissected sandstone gorges and ridges vegetated with eucalypts and wildflowers. Stands of softwood scrub and some brigabow occur on the lower flats. Suitable for bushwalking. Booking centres: Gladstone, Taroom

44 Robinson Gorge (77 300ha)

#### 拉合人族

BCU

Large park with magnificent sandstone scenery and deep gorges where Robinson Creek carves its way towards the Dawson River. Contrasting landscape w palm trees along the creek lines. Four-wheel-drive access only. Booking centres: Gladstone, Taroom.

45 Carnarvon (223 000ha) Carnarvon Gorge—

#### 

47 Salvator Rosa, Ka Ka Mundi-

#### 1411年14日本

Four areas in the Central Highlands sandstone belt are combined in this major park. Features include diverse vegetation, spectacular sandstone scenery with gorges and escarpments and refice of Aboriginal culture. Gorge campsite very popular. Elsewhere, the self-sufficient carrying extra fuel, food and water can enjoy a wilderness experience. Booking centres: Carnarvon Gorge, Mt Moffatt, Springsure.

Western Queensland Simpson Desert (555 000ha)

#### 

Queensland's largest national park west of Birdsville complements an even larger reserve in South Australia. Preserves dunefields and spinifex, open hummock grassland with some shrubs and distinctive wildlife. For the well-equipped, careful and adventurous. Information: Rockhampton.

49 Lark Quarry (374ha)

#### 本本林

Remote environmental park south-west of Wintor preserving evidence of a dinosaur stampede 100 million years ago. Information: Rockhampton.

Mackay district Cape Hillsborough (816ha)

#### 

Coastal park of hoop pine rainforest and open eucalypt forest with fringing mangrove areas. Popular for nature study and walking. Smalley's Beach campsile does not have water. Booking centres: Mackay, Seatorth.

Large park where tropical and sub-tropical rainfore meet. Camping areas and facilities are provided at Broken River, Fern Flat and Finch Hatton Gorge. Much of the park is for experienced bushwalkers. Booking centres: Eungella, Mackay.

52 Brampton Island (464ha)

#### 开竹入林之區

A popular park in the Cumberland Group. Walkings tracks to lookouts over surrounding islands and reefs. Camping allowed on nearby islands. Booking centres: Mackay, Seaforth.

4 人 2 山

Undeveloped coastal park with grassy headlands, mangroves and swamps, For self-sufficient visitors. Carry extra fuel and water. Booking centre: Mackay

#### Whitsundays Conway (23 800ha)

#### ACV

This park of tall lowland rainforest, tall eucalypt forest and coastal scenery forms the mainland edge of Whitsunday Passage. Walking tracks are limited to the northern end around the camping area on the Airlie Beach-Shute Harbour road. Four-day camping limit. Booking centre: Conway.

#### 田園金以入村子

A large group of continental islands, some of which are developed extensively for tourism. Fringing reafs, rocky outcrops, and rainforest make the going difficult even for bushwalkers. Whitsunday (10 390A) is the largest. Access by launch from Shute Harbour and Hamitton Island. Camping is allowed on 19 islands. Booking centre: Conway.

Parks around Townsville ACWV
Bowling Green Bay (Mt Elliot) (55 300ha)

#### 

Extensive lowlands of relatively low rainfall are backe by the rugged Mt Elliot area, the southern limit of the wet tropics. Access from the Bruce Highway south of Townsville. Poad gate is closed at night. Booking centre: Mt Elliot.

#### 

Most of this continental island off Townsville is national park. It features boulder-strewn hillsides and headlands, hoop pine and eucalpy forest, and a 22km walking track system. Habitat for koalas. Reef walk at Geoffrey Bay. Regular ferry service from Townsville. Information: Magnetic Island.

#### 三 本 本 本 と 中

This environmental park on Townsville's outskirts covers extensive coastal lands, wet in season. Popular waterbird viewing area. Cape Pallarenda Environmental Park fronting Cleveland Bay adjacent. Information: GBR Wonderland.

#### 四三人名 " 不 你 在 四

This park along part of the Paluma Range north of Townsville includes rainforest and open sucalypt forest. Access from the Bruce Highway. Campground at Big Crystal Creek. Booking centre: Paluma.

Ingham district

#### 60 Orp

开 🖍 🏃 🚈

Continental island off the coast from Ingham with grassland, open forest and rainforest. Surrounding reef excellent for snorkelling. Access by private be or charter launch. Booking centre: Ingham.

61 Herbert River (32 100ha)

Five adjoining parks — Herbert River Gorge, Herbert River Falls, Herkes Creek, Yamanie Falls, and Sword Creek — Form a magnificent conservation reserve in the Herbert River valley west of Ingham. Booking

C U 62 Wallaman Falls (602ha)

平 计 含 私 奉 田

Wallaman Falls west of Ingham has the largest single drop waterfall in Australia (278m). Popular campground and magnificent views over the Herbert River valley. Booking centre: Ingham.

63 Jourama Falls (1070ha)

#### 日本計会本工版之四 87

Series of cascades over salmon-coloured granite amid lush greenery with surrounding eucalypt forest. Popular picnic area off the Bruce Highway 29km south of Ingham. Booking centres: Jourama Falls, Ingham.

Western parks Porcupine Gorge (2938ha)

#### A 合計 A

Remote sandstone gorge in the headwaters of the Flinders River, Lookout off the Kennedy Developmental Road north of Hughenden, Challenge for the adventurous, Booking centre: GBR Wonderland.

나 ② 큐 👬 🏠 🛴 🌦 🛌 65 Great Basalt Wall (30 500ha)

#### A.

Remote area including part of a major geological feature from the last major volcanic activity in north-east Australia. Access from Charters Towers. Booking centre: Charters Towers.

Cardwell district Hinchinbrook Island (39 350ha)

#### 开 针 本 林 圣 本 🖦

BCW

Queensland's largest island-national park, separated from the mainland by a drowned free velley. Rugged rocky mountains, waterfalls, beaches, rainforest, mangroves and fall eucalypt forest. Wilderness area for self-sufficient bushwalkers. Access by boat from Cardwell and Lucinda Point. Booking centre: Cardwell Information Centre on the Bruce Highway in Cardwell providing information and displays on the wet tropics.

#### 

Explorer Edmund Kennedy traversed this area on his ill-fated 1948 expedition. Diverse vegetation includes mangrows. Genes tainforest, lee-tree—sedge swamp and fan palm and sword grass swamps. Access from the Bruce Highway north of Cardwell. Booking centre Cardwell Information Centre.

68 Dunk Island (730ha)

#### A TA A A A MA CFW

Most of this island named by Captain Cook is national park and was immortalised by author E.J. Banfield. Booking centre: Cardwell Information Centre.

#### Far North Queensland

Parks south of Cairns Bellenden Ker (31 000ha)

#### 計元付も本工法之世 CPV

This largely undeveloped park on the eastern slopes of Bellenden Ker Range Includes Queensland's highest mountain, Bartle Freer (1e57m). Numerous streams with waterfalls flow through dense upland rainforest habitat for many mannals including the tri kangaroo, birds and reptiles found only in Queensland, Josephine Falls west off the Bruce Highway is popular for walking and picnics. The Goldfield track passing through the park challenges hikers. Booking centre: Josephine Falls.

70 Eubenangee Swamp (1520ha)

#### XXXA

The last remaining natural swamp between Townsville and Cairns can be viewed in comfort and safety from a long boardwalk. Good views to Bellenden Ker. Information: Josephine Falls.

71 Mt Whitfield (297ha)

#### 三 二 人工 计 平

A scenic open forest and rainforest park on Cairns northern outskirts provides extensive views over the city and surrounds. Information: Cairns.

Barron Gorge (2784ha)

When the 260m falls on the Barron River may now be we only in floodlime. Water dammed for power generation is released periodically for affing on the rainforest-irringed gorge below and for the enjoyment of passengers on the Cairns-Kuranda railway. Information: Cairns.

73 Michaelmas Cay (3ha)

#### X a

Together with the nearby Upolo Cay, this cay is one of the Great Barrier Reel's main seabird nesting areas. Disturbance of nesting is minimised by strict controls on visitors. Information: Cairns.

74 Green Island (7ha)

#### 开针入上之

Most of this densely vegetated coral cay is national park. A walking track passes through the dry rainforest. Most popular destination on the Great Barrier Reef. Access by regular ferry service from Cairns. Information: Cairns.

75 Davies Creek (468ha)

#### 开竹合名标画

Granite-strewn landscape with eucalypt forest north west of Cairns off the Kennedy Highway. The creek flows over a 100m waterfall into a deep valley. Wildflowers in spring. Booking centre: Cairns.

Atherton Tableland and surrounds 76 Lake Eacham (489ha)

#### 

A crater lake surrounded by rainforest off the Gillies Highway. A 5km walking track circles the lake providing excellent opportunities for nature study. Information: Lake Eacham.

77 Lake Barrine (491ha)

#### **画从金人工什么**

Another maar, a lake in the cone of an extinct volcano, 6km from Lake Eacham. The park's 6.5km circuit track passes through rainforest once typical of the north-eastern tablelands. Habitat for reptiles, birds and mammals. Information: Lake Eacham.

78 Mt Hypipamee (The Crater) (364ha)

#### 开针合工放之山

This geological curiosity is a water-filled crater w sheer granitic sides as the result of a volcanic explosion. Walking tracks through rainforest and eucalypt forest. Information: Lake Eacham.

#### 四月月二十二日

This small rainforest environmental park is adjacent to 93 Malanda Falls over an old lava flow on the North Johnstone River. Information: Lake Eacham.

#### 开门会工从之间回

This open woodland park features Millstream Falls. camping. Booking centre: Lake Eacham.

#### 四条 社会 人族 多面

Superb rainforest scenery, gorges, waterfalls and swimming holes are features of this park. White water rating on the North Johnstone River. Self-guiding trail at Tchupala Falls. Off the Palmerston Highway between Innist

#### **₩**₩₩**=**

A series of national parks preserving outstanding examples of a broad limestone belt. Three caves, Donna, Royal Arch and Trezkinn, have regular guided tours. Tour times 9am and 1.30pm. Small camping area. Booking centre: Chillagoe.

Mt Isa district Lawn Hill (12 200ha)

ΑU

#### 四計 5.会入工 2. 从 2. 四

Remote oasis like area in the far north-west betw remote casis like area in the far north-west detween Burketown and Camooweal. Permanent waters of Lawn Hill Creek are contained by rich, red sandstone walls forming a gorge which protects remnant rainforest species, some found only here. Rich in Aboriginal history. Booking centre: Lawn Hill.

Parks north of Cairns

医乳腺 医乳球性 tensive largely undeveloped national park drained many tributaries of the Daintree River. Magnificent by many tribularies of the Daintree Hiver, magnitude tropical rainforest can be enjoyed by walks around Mossman Gorge, just outside Mossman. The rest of the control of the the park is for experienced, self-sufficient bushwalkers. Information: Cairns.

Cape Tribulation (16 965ha)

#### BPUW

This scenic coastal rainforest park extends from reel-fringed beaches to misty mountain tops. Access is via a vehicular ferry across the Daintree River or from Cooktown. Booking centre: Cape Tribulation.

86 Cedar Bay (5650ha)

#### λæ

Lakefield (537 000ha)

#### 

Extensive example of Peninsula country with vegetation ranging from fringing rainforest, stringyba forest and paperbark woodfand to mangrowes, mudflats and open grassy plains and swamps. Major habitat for many species of birds and fresh and saltwater crocodiles. Several popular campgrounds. Access via Laura, Booking centre: Lakefield

88 Iron Range (34 600ha)

#### True wilderness area of global significance containing the largest remaining area of lowland rainforest in Australia as well as mangroves, heathlands and open forest. Booking centre: Iron Range.

89 Rokeby (291 000ha)

This extensive park stretching from the Mollwraith Range to the Archer River flood plain preserves a variety of Peninsula vegetation types and provided habitat for rare and beautiful bridfile and crocodiles. Visit in the dry season only. Booking centre: Rokeby

#### 90 Archer Bend (166 000ha)

This park on the western side of the Peninsula features the Archer River and its fringing tall vine forest. Swamps and lagoons are homes to many waterbirds. Freshwater crocodiles are common in the river. Booking centre: Lakefield.

#### 

Jardine Rive: National Park (235 000ha) is managed with the adjoining Heathlands reserve. A true wilderness area, this park contains most catchments of the largest perennial stream in Queensland, its rainforest, open forest, heath and shrub land provide habitat for a variety of fauna yet to be fully recorded. For the adventurous in the dry. Booking centre: Heathlands.

This continental island almost surrounded by fringing reefs is north-north-east of Cooktown. A walking track leads to The Peak where Captain Cook stood to seek a passage through the Outer Barrier Reef. Limited camping area. Booking centre: Cairns.

C W. Several continental islands in Princess Charlotte Bay. Tracks lead to several outstanding Aboriginal art sites Booking centre: Cairns.

Q.NPWS offices.

Offshore islands 92 1175

ΒV

**▲ ½** 

Most parks listed are detailed in brochures available free at

# What YOU can do to help Rich river heritage

Though prevention and control of environmental damage and pollution is a department responsibility, you are in an excellent position to ensure future generations also enjoy those vital elements of life - air and water.

Consider water quality: Use soap if water is 'soft'; use detergent sparingly if water is 'hard'. Use only the required amount of household cleaners

Scrape dishes before washing. Put scraps on a compost heap or wrap them for disposal. Limit use of appliances like garbage disposals, dishwashers and washing machines. Run them only with full loads.

Use chemical pesticides only when other methods such as encouraging natural predators are inadequate. Follow manufacturers' instructions.

Buy goods in recyclable containers. Save our resources and prevent unnecessary manufacturing. Then you can dispose a minimum of rubbish in declared controlled tips. If you live near a waterway natural or man-made, help keep your section clean.

Consider air pollution: Avoid backyard fires. Recycle paper, cardboard and old clothing. Garden waste makes a great compost heap to add back to your garden.

When driving, ensure your vehicle engine and pollution controls are working properly. Use public transport or share rides



Queensland Premier Mr Mike Ahern and the Brisbane River Committee chairman Mrs Beryce Nelson discussing an entry in Beautiful Brisbane River at the publication's launch recently

Brisbane residents are returning to according to Mrs Nelson.

The Brisbane River is the reason for the very existence of our beautiful expanding city yet over the years it has been taken for granted to the point of becoming our most valuable and most unused asset.

'River oriented tourism, thanks to the entrepreneurial skills behind such enterprises as the Kookaburra Queens and Golden Mile Marine with support and promotion from the Queensland Government — is drawing more and more people towards a river experience,' Mrs Nelson said.

Mrs Nelson's committe, comprising representatives of the community and relevant Queensland Government departments, has published an exciting colour booklet entitled Beautiful Brisbane River which encourages people to discover river heritage

She said her committee had been most effective in its activities to beautify the Brisbane River. Major tree plantings had taken place at St Lucia and Kangaroo Point. Building developers on the river had been guided to work on a co-ordinated river landscaping theme.

The committee's work involves advising the Queensland Government on decisions directly affecting the river liaising with development companies for planned strategies for the river promoting public recreational use of the river and co-ordinating Brisbane River beautification projects.

Brisbane River Committee, PO Box 155, North Quay, 4002, (07) 224 4206.

#### No longer a puzzle

Hidden in this matrix are 18 words, pairs or initials involving the tasks of the Department of Environment, Conservation and Tourism

Words can be read forwards, backwards, up, down, or diagonally.

Turn the page for the

Park). and care, Initials are BFP (Brisbane Forest tor, noise, air, water, advise, quality, tourism and care Initials are pollution, recreation, manage, control, monivironment, marine park, pollution, recreation, park, conservation, enwildlife, plan, national The hidden words are:

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Moreton Island ia Tangaloom

St Helena Base PO Box 66 Manly, Qld 4179 (07) 396 5113

Toowoomba Ma Qid 4352 (076) 35 0689

Moreton Island, Old 4025 (075) 48 2710

Downs-South West Sub-Regional Office

Southern Downs District Office Hermitage Research Station via Warwick, Old 4370 (076) 61 3710

Girraween via Ballandean, Qld 4382 (076) 84 5157

via Glenlyon Dam Road via Stanthorpe, Qld 4380 (067) 37 5235

Main Range Centre Cunningham's Gap MS 394 Warwick, Qld 4370 (076) 66 1133

Bunya Mountains MS501

via Dalby, Old 4405 (074) 68 3127

Crows Nest Falls/Rave PO Box 68 Crows Nest, Old 4355 (076) 98 1296

Lake Broadwater PO 80x 401 Dalby, Qld 4405 (074) 63 3562

South West District Office c/ District Ranger Park Street PO Box 149 Charleville, Old 4470 (074) 54 1255

Omee cmr Wharf and Richmond Streets PO Box 101 Maryborough, Old 4650 (071) 22 2455

Bundaberg District see Sub-Regional Office

4 Alderley Street PO Box 7054 Toowoomba Mail Centre

#### Department of Environment Conservation and Tourism

Brisbane PO Box 155 North Quay, Qld 4002 (07) 227 4111

Queensland National Parks and Wildlife Service 5th, 6th and 7th floors MLC Centre MLC Centre 239 George Street, Brisbane PO Box 190 North Quay, Qld 4002 (07) 227 4111

Southern Region Southern Regional Centre 55 Priors Pocket Road Noggill PO Box 42 Kenmore, Old 4069 (07) 202 0200 202 0232 (wildlife) 202 0212 (parks)

Burleigh Head Gold Coast Highway Burleigh Heads, Old 4220 (075) 35 3032

Fleay's Fauna Centre Kabool Road West Burleigh, Old 4219 (075) 55 2194

Eastern Scenic Rim District 161 Oxley Drive Hollywell, Old 4216 (075) 57 1203

Springbrook via Mudgeeraba, Old 4215 (075) 33 5147

Natural Arch via Nerang, Old 4211 (075) 33 6156

Central Scenic Rim District Office PO Box 135 Beaudesert, Old 4285

Knoll Road North Tamborine, Old 4272 (075) 45 1171

Lamington National Park Binna Burra section Beechmont via Nerang, Old 4211 (075) 33 3584 Green Mountains section via Canungra, Old 4275 (075) 45 1734

Boonah, Qld 4310 (075) 63 1579 (after 6pm)

Moreton Bay and Canning Districts see Regional Centrs

Glass House Mountains Office Roys Road Beerwah, Old 4519 (071) 94 6630

Mt Glorious c/ Post Office Mt Nebo, Old 4520 (07) 289 0200 (3.30-4pm)



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Mon Repos PO Box 1735 Bundaberg, Qld 4670 (071) 79 2628

Great Sandy District Office Fraser Island Recreation Box of Q.NPWS Rainbow Beach Road PO Box 30 Rainbow Beach, Old 4581 (071) 66 3160

Fraser Island Base c/ Park Overseer Dundubara, Old 4570 (071) 28 4434 Waddy Point (071) 28 4576

Freshwater Base Cooloola National Park c/ Park Overseer Rainbow Beach, Old 4851 (071) 49 7959

Noosa District Office Bruce Highway Monkland Gymple, Old 4570 (071) 82 4189

Southern Cooloola Q.NPWS Box via Tewantin, Old 4565 (071) 85 3245 (071) 49 7364

Noosa Park Road Noosa Heads, Old 4587 (071) 47 3243

via Nambour, Qld 4560 (071) 45 7301 (noon and 4pm)

Central Region Central Regional Centre Royal Bank Building 194 Quay Street PO Box 1395 Rockhampton, Old 4700 (079) 27 6511

Heron Island Base (079) 72 5690

PO Box 175 Taroom, Qld 4420

Fitzroy District Office see Regional Centre

Keppel Islands-Capricorn Coast Rosslyn Bay Harbour PO Box 770 Yeppoon, Old 4703 (079) 33 6608

Central Highlands District Office PO Box 908 Emerald, Qld 4720 (079) 82 2246

Carnarvon National Park The Ranger Carnarvon Gorge section via Rolleston, Old 4702 (079) 84 4505 Park Oversøer Mt Moffatt section

Springsure c/ Park Overseer PO Box 157 Springsure, Old 4722 (079) 84 1173

64 Victoria Street PO Box 623 Mackay, Old 4740 (079) 57 6292

Cape Hillsborough MS 895 Seaforth, Qld 4741 (079) 59 0410

Eungella c/ Post Office Dalrymple Heights, Qld 4740 (079) 58 4552

Northern Region Northern Regional Centre Marlow Street Pollarenda PO Box 5391 Townsville Mail Centre, Qld 4810 (077) 74 1411

Great Barrier Reef Wonderland Office Flinders Street East

serpine District Office Conway PO Box 332 Airlie Beach, Old 4802 (079) 46 9430

Magnetic Island c/ Post Office Picnic Bay, Qld 4816 (077) 78 5378

Bowling Green Bay — Mt Ellic PO Box 1954 Townsville, Qld 4810 (077) 78 8203

Charters Towers PO Box 187 Charters Towers, Qld 4820

Hinchinbrook District Office 2 Herbert Street PO Box 1293 Ingham, Qld 4850 (077) 78 1700

Jourama Falls PO Box 1293 Ingham, Qld 4850 (077) 77 3112

Mt Spec (Crystal Creek) Main Street CMB 16 Paluma, Old 4816 (077) 70 8526

Edmund Kennedy PO Box 74 Cardwell, Old 4816 (070) 65 8850

North West District Office 2nd floor Mt Isa House our Camoowsal and Mary Stree PO Box 2318 Mt Isa, Qld 4825 (077) 43 2055

Far Northern Regi 41 Esplanade PO Box 2086 Caims, Old 4870 (070) 51 9811

Daintree District Office see Regional Centre

Cape Tribulation PMB 10 PS 2041 Mossman, Qld 4873

Cape York District see Regional Centre

Lakefield National Park PMB 29 Cairns Mail Centre, Qld 4871 (070) 60 3271

New Laura PMB 79 Cairns Mail Centre, Qld 4871 (070) 60 3260 Bizant

Rokeby PMB 28 Cairns Mail Centre, Old 4871 (070) 60 3256

Jardine River/Heathlands PMB 76 Cairns Mail Centre, Qld 4871 (070) 60 3241

Lake Eacham District Office PO Box 21 Yungaburra, Old 4872 (070) 95 3768

Lawn Hill PMB 12 MS 1463 Mt Isa, Qld 4825

Northern Einsleigh Dist PO 8ox 38 Chillagoe, Old 4871 (070) 94 7163

Trinity District Office 88 Rankin Street Innisfall, Qld 4860

Mission Beach Office Garners Beach Road PO Box 89 Mission Beach, Qld 4854 (070) 68 7183

Josephine Falls PO Box 93 Miriwinni, Qld 4871 (070) 67 6304

(070) 64 5115

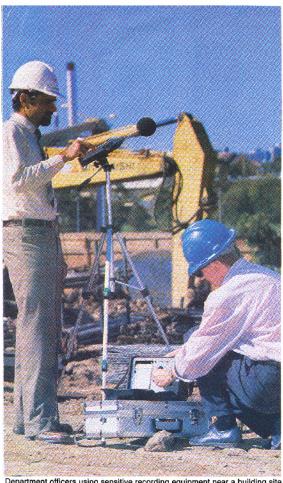
Division of Environment Noise abatement, air pollution control Kantara House 64-70 Mary Street Brisbane GPO Box 2594 Brisbane, Qld 4001 (07) 224 5612 (07) 224 5520

Water quality Old Treasury Building Queen Street Brisbane PO Box 155 North Quay, Qld 4002 (07) 224 2415

Lane PO Box 440 Gladstone, Old 4680 (079) 76 1627

Air, noise, water 2 Barlow Street South Townsville, Qld 4810 (077) 72 1488

Brisbane Forest Park 60 Mt Nebo Road The Gap Brisbane PO Box 155 North Quay, Qld 4002 (07) 300 4855



Department officers using sensitive recording equipment near a building site to obtain tapes to be used for laboratory analysis of the area's noise levels.

# Advice service for industry

Advice concerning the ways industry, business and commercial premises can reduce and control excessive noise and water and air pollution is provided by department officers.

These officers also liaise with local government and other government departments on such problems.

By issuing licences to discharge waste, the waters into which waste is discharged may be protected from pollution.

Frequent inspections ensure licence conditions are being observed.

Research into water quality and onsite inspections of how well wastes entering water are being absorbed enables correct advice to be given to industry and guidelines developed.

In some cases, existing practices are adequate to control pollution.

When the advice concerns sewage treatment, if new or different methods are needed recommendations can be made rapidly.

Remote sensing provides information on temperatures, chlorophyll (green plant material, usually algae), and turbidity.

Dissolved oxygen and nutrient concentrations under future or proposed levels of pollutants are predicted using mathematical models.

Complaints and monitoring can lead to the issue of notices to carry out

Advice can help control before problems arise. Abrasive blasting of metals can be done in a closed chamber. Water can control dust. Incinerator smoke or odour can be controlled by better design, maintenance, or alternative ways of disposal.

Advice on areas of incompatible land use in town plans is given regularly. Care is taken that solving one type of pollution does not create another.

Sources of unacceptable noise levels include construction sites, amplifiers, engineering workshops, commercial refrigeration, and recreation centres.

Controls include fitting of efficient mufflers and rescheduling early morning and late night activities.

Sound amplifiers may be reduced in output and speakers changed in capacity and direction.

Planned natural buffer zones can surround industrial estates. Other acoustic treatments include sealing and screening.

Recreation centres should be sited away from residential areas.

Proper planning and advice about existing problems can reduce pollution and improve relations with neighbours.

# **Quality checks**

Water quality, levels of noise in commercial and industrial areas, and minimizing of air pollution throughout the state are some functions covered by the Division of Environment.

The quality of waters of the state are preserved, restored and enhanced through surveys, investigations, and research into water pollution.

Watch is maintained over wastes discharges, industrial and domestic, and organizations and people are advised on the need to prevent water pollution, and how to reduce existing pollution.

Information on this important aspect of the environment reaches the community via the media and other forms such as publications suitable for school projects.

Functions covered by water quality officers include water pollution control and management, investigation of water quality complaints, incidence of fish and other wildlife mortality, dissemination of information about water quality, and licensing of waste discharges.

A major activity in seeking to improve water quality is the monitoring of all known sources discharging waste into water. Licensed and other waste generating premises are inspected regularly.

The department is responsible for noise emanating from business, commercial and industrial activities. on water air, noise

(Levels of domestic noise from homes, recreation areas and other public places such as halls and clubs — are the responsibility of the police and local government.)

Management of commercial and industrial noise is undertaken at three levels — complaint investigation, development advice, and legislation and liaison

Noice surveys are undertaken before industrial facilities are built, and then in the vicinity of industrial estates.

Recordings are made of the noise present. These tapes are subject to extensive analysis in a laboratory.

An analyser divides the total noise signal into components at standard frequencies.

Variations in the component noise levels can then be examined and compared.

Laboratory analysis is also obviously the basis for identifying the pollutants and their extent in our air.

Monitoring stations throughout the state are used to take air samples regularly.

The kinds of things which

pollute the air commonly measured include sulphur dioxide, ozone, carbon monoxide, nitrogen oxides, total suspended particles, fluoride, insoluble dust, and tiny suspended particles.

Weather variables such as visibility and wind speed/direction are also measured for these will affect types and levels of air pollution at any time.

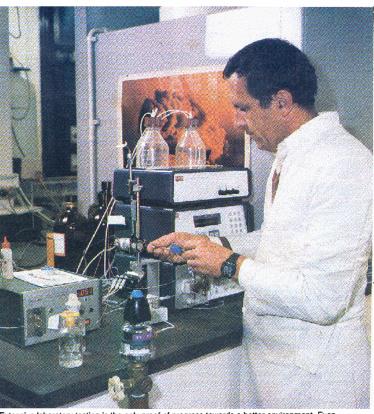
Monitoring extends to urban areas surrounding industrial areas and 24-hour averages are

Officers also make emission tests on exhaust gases from particular industrial plants.

For places like Brisbane, mathematical models have been developed to predict pollution concentrations.

For Brisbane, the model identifies areas where increased emissions of pollutants into the air can be expected to result in undesirable concentrations likely to affect community health, property, and surrounds.

By monitoring the levels of substances released into our environment, department officers can take action before problems occur.



Extensive laboratory testing is the only proof of progress towards a better environment. Even apparently clean water and air can contain many pollutants revealed through careful analysis.