

Great Barrier Reef Marine Park Authority

ANNUAL REVIEW 1987-88

*The Library
Great Barrier Reef
Marine Park Authority
P.O. Box 1379
Townsville, 4810*

**NOT
FOR
LOAN**



Great Barrier Reef Marine Park Authority

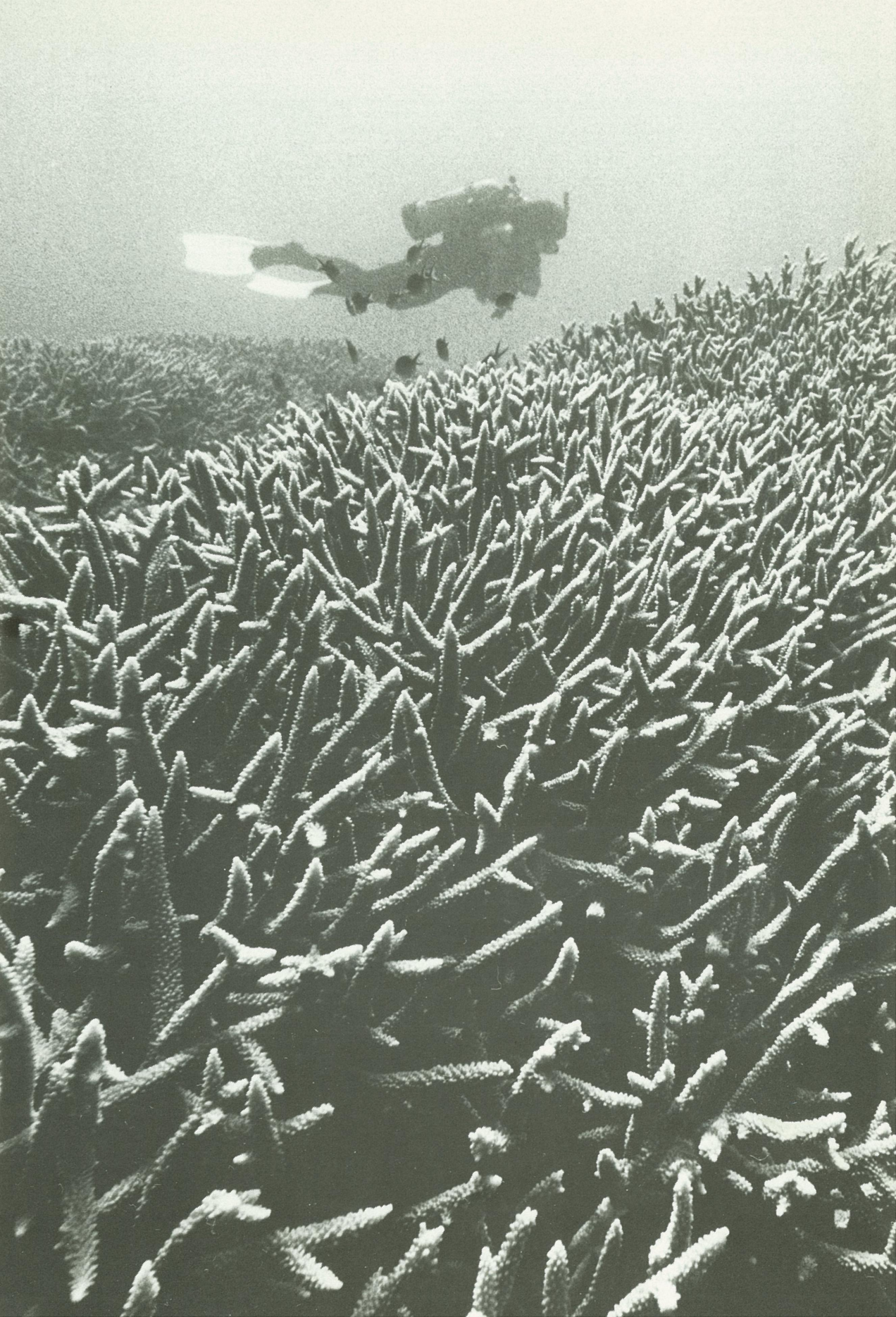
ANNUAL REVIEW

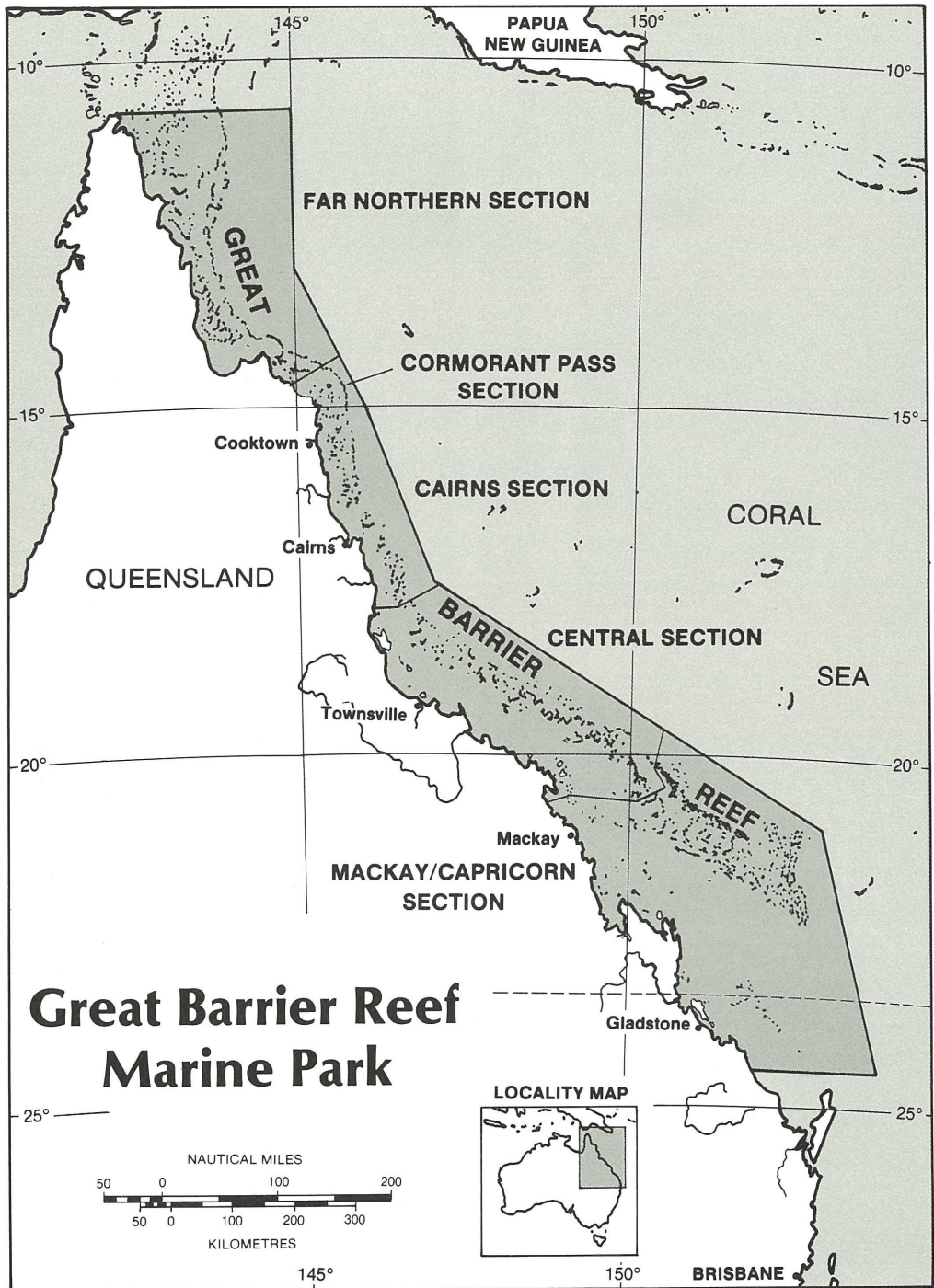
1987-88

Great Barrier Reef Marine Park Authority
PO Box 1379 Townsville Qld 4810
Telephone (077) 818811

December 1988

© Commonwealth of Australia 1988
ISSN 1032-6995





Great Barrier Reef Marine Park

CONTENTS

FROM THE CHAIRMAN	1
GREAT BARRIER REEF MARINE PARK AUTHORITY	5
GREAT BARRIER REEF MINISTERIAL COUNCIL	9
GREAT BARRIER REEF CONSULTATIVE COMMITTEE	11
PLANNING	15
PARK MANAGEMENT	21
RESEARCH AND MONITORING	31
EDUCATION AND INFORMATION	37
AQUARIUM	43
ADMINISTRATION	47
APPENDIXES	
A. Authority Functions	57
B. Consultative Committee Functions	59
C. Authority Senior Officers	59
D. Documents Available to the Public	60
E. Staff papers published/presented in 1987-88	68
F. Research in Progress 1987-88	70
G. Financial Statements	78
H. Auditor-General's Report	97
I. Crown of Thorns Starfish Advisory Review Committee	98



FROM THE CHAIRMAN

Sustainable use Non-government expenditure on activities related to the Great Barrier Reef is increasing at about 10% per annum in real terms. Already, this expenditure amounts to about \$1 000 million per annum.

High rates of development are only sustainable if the natural resources on which development depends are themselves sustained. This is the essential message of the World Conservation Strategy and the National Conservation Strategy for Australia. In the Authority's case, it is expressed in our primary goal which is 'to provide for the protection, wise use, understanding and enjoyment of the Great Barrier Reef in perpetuity through the development and care of the Great Barrier Reef Marine Park'.

The problems in managing this vast area are manifold. They are problems of conflict between different user and interest groups, of scarce human resources, of embryonic knowledge of the processes that sustain and threaten the Great Barrier Reef, and of a need to restrain expenditure.

Education

We have approached the task of allowing reasonable use of the Great Barrier Reef Marine Park, while protecting its natural qualities, by focusing on education. We recognise that the world's largest marine park is owned by the people of Australia. The key to its successful management must be, to a large extent, self regulation by an educated and supportive public.

The Authority's education program has many facets. They include formal public participation in zoning the Marine Park; production of a newsletter, pamphlets, books, activities manuals and research reports; the organisation of workshops on policy issues; and the production of a video newsletter. This annual report is itself designed to inform the public about the achievements and problems of the Great Barrier Reef Marine Park.

*Opposite: Tourism is the fastest growing industry on the Reef with over three million people visiting the region annually. A permit system ensures protection of the Reef environment.
(Photo: Quicksilver Connections)*

The central element in the Authority's education program is the Great Barrier Reef Aquarium in Townsville. This year, more than 300 000 people passed through the Aquarium which encloses the largest living coral reef in an aquarium in the world, and in doing so learned about the processes which sustain the Great Barrier Reef and about those that threaten it. It is evident from their comments that the education process is working. That is to say, the Aquarium education program is increasing public commitment to the protection of the Great Barrier Reef in perpetuity.

The Aquarium operates on a user-pays system. The Government makes no contribution whatsoever to its running costs. These are met mainly from entry fees but major contributions to reducing costs are made by the many volunteers who act as guides in the Aquarium. The fit-out of the Aquarium was paid for by public donations, mainly from the people of Townsville.

User Pays

In common with other government agencies throughout Australia, the Authority is investigating the possibility of raising funds from its users for managing the Great Barrier Reef Marine Park. This process is not without its dangers. Contributors naturally feel that they should have a dominant say in how their contribution should be spent, ('who pays the piper calls the tune'). We shall have to be very careful to make sure that the Authority's ability to make wise decisions for the common good of all Australians is not weakened by demands from specific interest groups who contribute to the cost of management. Also, the commitment of users of the Marine Park to its protection may be undermined if fees are introduced, or applied, in a way that appears unreasonable or unfair. Resolution of these issues may well be the most important and difficult task for the Authority in the coming years.

Zoning Program

During the year, the zoning plan for the last major section of the Marine Park to be zoned was submitted to the Commonwealth Parliament. We expect it to come into effect in early August 1988. This enormous Section of Park, the Mackay/Capricorn Section, will add a further 66% to the area of Marine Park which the Authority, in association with the Queensland National Parks and Wildlife Service, is required to manage. In the 1987-88 financial year, the Central Section Zoning Plan came into effect, which added 59% to the area to be managed. These very rapid increases in the area which the Authority must manage are imposing considerable strains on the agency. Many specific responsibilities including monitoring, day-to-day management, the consideration of applications for tourism developments and general administration increase proportionally with the area to be managed.

These areal increases compound with the yearly increases in the intensity of activity on the Reef to place great demands on the Authority's staff. They have responded, as we have come to expect of them, with enthusiasm, integrity and competence. The challenge for the Authority is to maintain consistency in its dealings with the many interest groups and individual users of the Reef, while avoiding the development of bureaucratic rigidity. Here we face the problems common to all government agencies. Whenever there is an event in the Marine Park that adversely affects the environment, there are demands that regulations should be tightened. At the same time, other sectors of the population demand 'deregulation'. We attempt to meet these conflicting demands by minimising regulations but always observing our goal.

Community Involvement

One of the Authority's major aims is 'to involve the community meaningfully in the care and development of the Marine Park'. This involvement can be maintained only if the Authority and its staff have the time to communicate adequately with members of the community. Sometimes this communication should be with only a few people at a time. The ratio of numbers of staff members to the number of visitor days in the managed area of the Marine Park has declined from about 1:5 200 in 1980-81 to 1:44 000 in 1987-88. This decline can, on the one hand, be seen as an improvement in efficiency. On the other hand, it reduces the time that can be devoted by the Authority or its staff to making sure that communication with the public is sympathetic and conducive to good relations. The Authority is actively seeking ways of achieving its aim of community involvement without increases in staff numbers.

The Queensland National Parks and Wildlife Service, which is responsible to the Authority for day-to-day management of the Great Barrier Reef Marine Park, faces similar pressures. Field staff are limited in number with only seven field officers available on any given day to supervise the area between Cooktown and the top of Cape York Peninsula. Naturally, users complain about the invisibility of field staff. We respond by asking for public self-regulation, by concentrating on heavily used areas, by aerial surveillance and by strong enforcement action after repeated or serious infringements.

Crown of Thorns Starfish

This year was the third in the Government's Crown of Thorns Starfish Research Program. Fifty-eight research projects are underway involving scientists from research institutions all over Australia. Much progress has been made in understanding the characteristics of this reef animal and the part it plays in the Great Barrier Reef ecosystem. The Australian Institute of Marine Science has produced thirteen technical reports detailing results of the long term surveys.

Twenty-seven reports of the management-related research have been produced. In one of these, Associate Professor R Henderson and Mr P Walbran of James Cook University have reported evidence on the past abundances of the starfish on Green Island and John Brewer Reefs. They concluded: 'The sediment record for these two reefs is compatible with a long history of infestation of the sort observed by sightings over the past two decades. The sediment record is not compatible with the proposition that large numbers of crown of thorns starfish are a recent phenomenon on these reefs.' This work is now being extended to other reefs in various parts of the Great Barrier Reef Marine Park. However, much remains to be learned. In particular, we still cannot answer unequivocally the fundamental question of whether human activity contributes to the size and frequency of infestations of these starfish. It is vital that the Crown of Thorns Starfish Research and Monitoring Program be continued until the scientific community is satisfied that an answer has been found to this fundamental question and appropriate management responses have been developed for the whole Reef.

International Assistance

The Authority continues to receive requests from other countries for assistance in developing marine conservation programs. This year, the Authority's chief planning officer, Richard Kenchington, worked with the Government of Ecuador in developing a marine protected area plan for the sea around the historic Galapagos Islands. He also is to provide assistance in establishing training programs for marine park managers in Malaysia. All this is done with funds provided by foreign governments or international agencies. There is no cost to Australia. These requests illustrate Australia's reputation in marine park management as a consequence of setting up and managing, by cooperation between the Commonwealth and Queensland Governments, the world's largest marine protected area. The Authority is going through a period of great challenge and opportunity. Its performance is being used as an indicator of the practicability of achieving sustainable use of marine areas in other parts of the world. Therefore our performance has implications far beyond the Great Barrier Reef.

GREAT BARRIER REEF MARINE PARK AUTHORITY

The Great Barrier Reef Marine Park Authority, which was established under the *Great Barrier Reef Marine Park Act 1975*, is a Commonwealth statutory body consisting of a full-time Chairman and two part-time members, one of whom is nominated by the Queensland Government.

The first appointments to the Authority were made in July 1976 and the Authority's first meeting was held in August that year.

ROLE

The Authority is the principal adviser to the Commonwealth Government on the development and care of the Great Barrier Reef Marine Park. Specific functions defined in section 7 of the Act are listed in Appendix A.

The Authority had adopted a statement of its goal and aims which has been derived from, and is consistent with, the object, functions and powers specified in the Act.

GOAL

To provide for the protection, wise use, understanding and enjoyment of the Great Barrier Reef in perpetuity through the development and care of the Great Barrier Reef Marine Park.

AIMS

These aims are subordinate to the primary goal and must be read in conjunction with it and with each other.

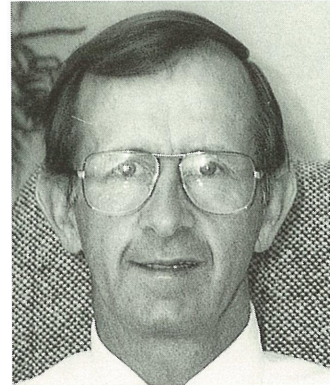
- To protect the natural qualities of the Reef, whilst providing for reasonable use of the Reef's resources.
- To involve the community meaningfully in the care and development of the Marine Park.
- To achieve competence and fairness in the care and development of the Marine Park through the conduct of research, and the deliberate acquisition, use and dissemination of relevant information from research and other sources.
- To minimise regulation of, and interference in, human activities, consistent with meeting the goal and other aims of the Authority.
- To achieve management of the Marine Park primarily through the community's understanding and acceptance of the provisions of zoning, regulations and management practices.
- To minimise cost of caring for and developing the Marine Park consistent with meeting the goal and other aims of the Authority.
- To provide for economic development consistent with meeting the goal and other aims of the Authority.
- To adapt the Marine Park and the operations of the Authority to changing circumstances.

MEMBERSHIP

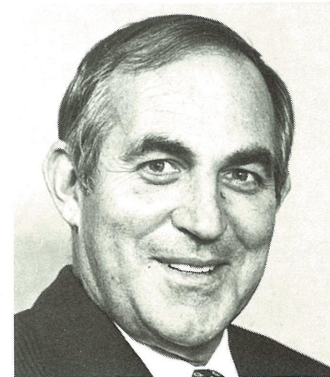
The full-time Chairman (and chief executive) of the Authority is **Mr Graeme Kelleher, AM** who was reappointed for his second five-year term on 20 December 1984. Mr Kelleher has had extensive experience in activities concerned with the environment. He was one of the three commissioners on the Ranger Uranium Environmental Inquiry and served as an examiner of New Zealand's environment policies for the international Organisation for Economic Co-operation and Development (OECD). He is President of the Australian Committee for the World Conservation Union (IUCN) and is Vice-Chairman, Marine, of IUCN's Commission on National Parks and Protected Areas (CNPPA). He was made a Member of the Order of Australia in the Queen's Birthday Honours List, for public service, particularly with the Great Barrier Reef Marine Park Authority.

Sir Sydney Schubert has been one of the two part-time members since 1978. He tendered his resignation from the Authority on 29 June 1988*. As Queensland Co-ordinator-General and Director General of the Queensland Premier's Department, Sir Sydney has for many years had primary responsibility for advising the Queensland Government on resource development and management, and for implementing the Queensland Government's policies in such areas.

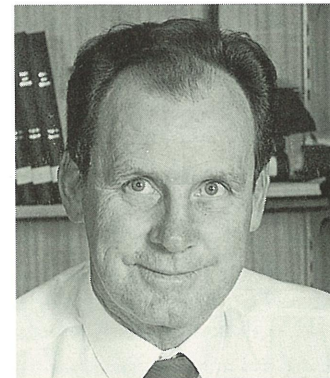
Dr Joe Baker, OBE is the other part-time member. He was originally appointed in 1976 and has been reappointed to this position four times, most recently for a further one-year period to 31 December 1988. Dr Baker is Director of the Australian Institute of Marine Science (AIMS), Townsville. He has had extensive experience in marine scientific research and administration and has been a member of many of Australia's marine scientific and environmental advisory bodies.



Mr Graeme Kelleher



Sir Syd Schubert



Dr Joe Baker

*The Governor-General accepted Sir Sydney's resignation on 25 July 1988.

MEETINGS

During 1987-88, the Authority held the following meetings:

1987		1988	
DATE	LOCATION	DATE	LOCATION
2 September	Townsville	17 February	Townsville
12 November	Brisbane	24 March	Townsville
		11 May	Brisbane
		27 June	Townsville

During the course of these meetings, a zoning plan for the Mackay/Capricorn Section of the Marine Park was adopted and submitted to the Minister for tabling in Federal Parliament.

With 60% of the Marine Park zoned, the Authority increasingly considered matters relating to day-to-day management. Most meetings in 1987-88 were attended by representatives of the Queensland National Parks and Wildlife Service.

THE MINISTER

During most of the year under review, **Senator the Honourable Graham Richardson** has been the Minister with portfolio responsibilities for Great Barrier Reef matters, first as Minister for the Environment and the Arts, and later as Minister for the Arts, Sport, the Environment, Tourism and Territories. Before Senator Richardson, the Hon Barry Cohen, MP, Minister for Arts, Heritage and Environment exercised these responsibilities. The Minister convened one meeting of the Great Barrier Reef Ministerial Council, held in Brisbane in May 1988.

The Act provides that the Authority *'shall perform its functions in accordance with any general directions given by the Minister not inconsistent with this Act'*. No such directions were given to the Authority during the year.

OFFICE OF THE AUTHORITY

The Authority has an office in Townsville and a small office in Canberra. This arrangement arises from the need for the Authority to have its principal technical resources close to the Reef and also to carry out essential functions in Canberra.

The Townsville office, which includes the Great Barrier Reef Aquarium, has an average staffing level of 84 and carries out most of the Authority's operational activities. The actual staffing level at 30 June 1988 was 86, including four inoperative staff on leave with pay. In December 1987, the Townsville office was relocated to the Great Barrier Reef Wonderland complex.

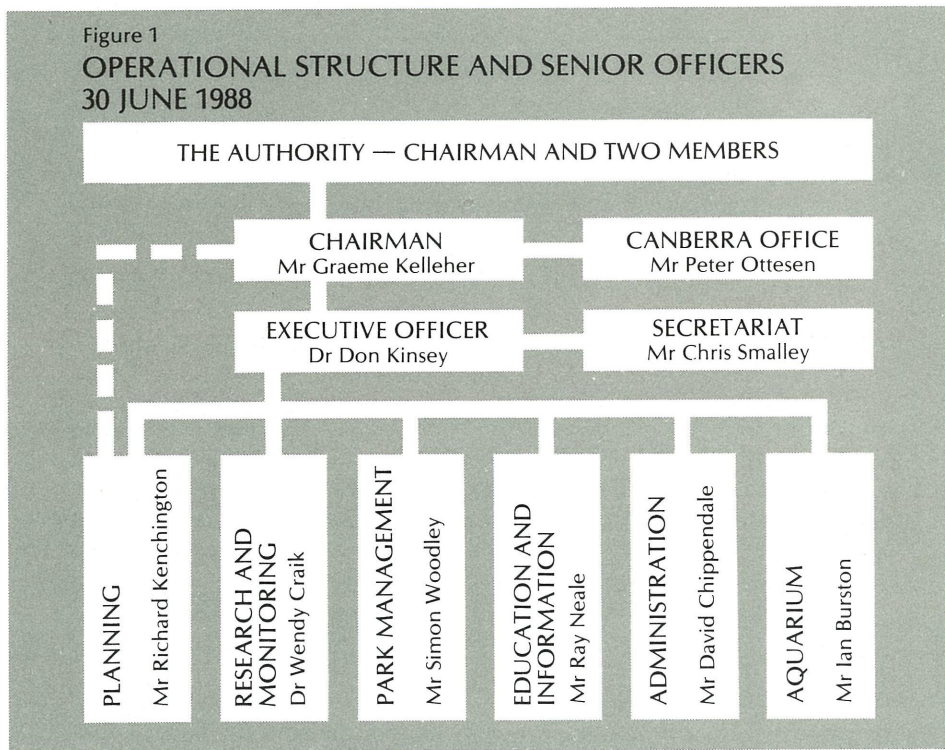
The Canberra office, with a staff of five, serves the Minister, consults with Commonwealth departments whose responsibilities are affected by or affect the Authority's programs, and provides the secretariat for the Great Barrier

Reef Ministerial Council. One staff member provides the secretariat support to the Chairman in his role as Vice-Chairman, Marine, Commission on National Parks and Protected Areas, IUCN, the World Conservation Union.

The Chairman has the powers of, or exercisable by, a Secretary of a Department under the Public Service Act.

EXECUTIVE OFFICER

Dr Don Kinsey is the Executive Officer of the Great Barrier Reef Marine Park Authority. He is responsible to the Chairman for the efficient operation of the Townsville office. He is also Secretary to the three-member Great Barrier Reef Marine Park Authority. Staff of Secretariat support him in this role.



GREAT BARRIER REEF MINISTERIAL COUNCIL

The Great Barrier Reef Ministerial Council was established in June 1979 to coordinate policy on the Reef between the Commonwealth and Queensland Governments at Ministerial level. The Council comprises four Ministers, two from each Government.

The thirteenth meeting of the Council took place in the Parliamentary Annex Building, Brisbane on 10 May 1988.

Ministers who attended the meeting were:

- The Hon Graham Richardson, Minister for the Arts, Sport, the Environment, Tourism and Territories (Convenor)
- The Hon Margaret Reynolds, Minister for Local Government and Minister assisting the Prime Minister for the Status of Women
- The Hon Geoff Muntz, MLA, Queensland Minister for Conservation, Environment and Tourism.

The Hon Mike Ahern, MLA, Premier and Treasurer of Queensland was unable to attend the meeting due to other commitments.

At the meeting, Council:

- signed the Day-to-Day Management Agreement which formalises the continuation of the high level of cooperation between the Commonwealth and Queensland Governments in managing the islands, reefs and waters of the Great Barrier Reef Marine Park and Queensland marine and national parks adjacent to its boundaries.
- examined the Three-Year Rolling Program for the management of the Marine Park during the period 1988-89 to 1990-91, and noted that this will be the first program to provide management, in some degree, for the entire Great Barrier Reef Marine Park and for the adjacent Queensland marine parks.
- noted that there has been a substantial increase in the area of the Park to be managed — 59% this year, and a further 66% in 1988-89 — and that increased management obligations may arise in future years from increasing usage of the Marine Park.
- noted that the Queensland National Parks and Wildlife Service and the Authority have now agreed on a system of procedures to implement dual permits, designed to streamline and regionalise administrative aspects of the permit system. Council supported this development as it would greatly assist reef users and further enhance the cooperative nature of the management regime in the Marine Park.
- noted progress on the implementation of the Mackay/Capricorn Section Zoning Plan which was likely [at the time of the meeting] to come into effect, simultaneously with the zoning plans for adjacent marine areas under Queensland jurisdiction, on 1 August 1988. Council encouraged the further development of such complementary zoning plans.

- noted that both GBRMPA and Q.NPWS have recognised the potential for confusion to the user public in parallel and complementary zoning provisions; and that, consequently, the two agencies have developed joint interpretive maps depicting the zoning provisions of both plans together with relevant written interpretive material.
- examined and confirmed the Authority's existing policy to maintain an ongoing review of zoning plans and management provisions at regular intervals to deal with ever-increasing understanding of the natural system, changing user requirements, technology changes, and the overlying need to conserve the resource.
- noted the Authority's commitment to hold a workshop to investigate innovative ways for planning and managing the Marine Park, involving, among others, the Great Barrier Reef Consultative Committee who have strongly supported the policy of ongoing review of zoning and management.
- reviewed the status of proposed and existing offshore developments in the Marine Park including structures ranging from pontoons and marinas to underwater observatories and floating hotels.
- noted progress on the implementation of comprehensive Commonwealth and Queensland legislation applying to offshore structures or sea installations and discussed progress on the development of comprehensive assessment procedures for dealing with permit applications for these facilities.
- endorsed the principle of charging for commercial use of the Great Barrier Reef Marine Park and Queensland marine parks, but requested that officials of both Governments consult widely with industry on these charges to ensure that such charges would be equitable.
- noted that the research program on the crown of thorns starfish phenomenon was in its fourth calendar year and included 58 distinct projects; and noted that, because of the complexity of the phenomenon, continued research commitment would be sought for a longer term program to be developed following the existing program's review.
- recorded its appreciation of the work of the late Dr Graham Saunders, the former Director of Q.NPWS, who died in February 1988.

GREAT BARRIER REEF CONSULTATIVE COMMITTEE

The Great Barrier Reef Consultative Committee was established by the *Great Barrier Reef Marine Park Act 1975* as an independent advisory body for both the Minister and the Authority. Specific functions defined in section 21 of the Act are listed in Appendix B.

The Consultative Committee represents a wide cross-section of interests in the Great Barrier Reef, from both the public and private sectors, including tourism, fishing, science and conservation. The Committee consists of members appointed by the Minister for a three-year term and a member of the Authority appointed by the Authority for an indefinite term. The current term for all members appointed by the Minister ends on 3 October 1988.

MEMBERSHIP AT 1 JULY 1987

- Professor Kevin Stark (Chairman)
James Cook University of North Queensland
- Mr Michael Blamey
Commonwealth Department of Primary Industry
- Mr Peter Conaty
Queensland Commercial Fishermen's State Council
- Mr Paul Eccles
Commonwealth Department of Transport
- Mr Edward Hegerl
Australian Littoral Society and Queensland Conservation Council
- Dr Tor Hundloe
Australian Conservation Foundation
- Mr Graeme Kelleher (Authority appointee)
Great Barrier Reef Marine Park Authority
- Mr Gordon McKauge
Far North Queensland Promotions Bureau Tourism Task Force
- Mr Andre Maestracci
Hayman Island Resort
- Dr Helene Marsh
James Cook University of North Queensland
- Mr Jim Miller
Queensland Department of Primary Industries

- Mr Keith Nielson
Commonwealth Department of Sport, Recreation and Tourism
- Dr Peter Saenger
Australian Underwater Federation and Queensland Amateur Fishing Council
- Dr Graham Saunders
Queensland National Parks and Wildlife Service
- Mr Leon Wruck
Heron Island Pty Ltd

Mr Blamey resigned when he ceased his association with the Commonwealth Department of Primary Industry in 1987.

Following Dr Saunders's death, the Committee has continued its association with Q.NPWS through liaison with the Service's Acting Director, Mr Jim McEvoy.

Staff of the Authority's Secretariat provide administrative support for the Consultative Committee. Mr Chris Smalley is Secretary.

MEETINGS

The Consultative Committee met three times in 1987-88, at Townsville, Dunk Island and in Brisbane.

During the year, the Consultative Committee responded to requests from the Authority for advice on matters including:

- problems that may be associated with rapid tourism development in relation to the Marine Park, and how such problems might be overcome
- revenue raising in the Marine Park.

In the context of revenue raising, the Committee has discussed the implementation of the Commonwealth's *Sea Installations Act 1987*.

The Committee examined, at the Minister's invitation, a report proposing a program for a baseline pollution study of Torres Strait, in as much as it affects the Marine Park.

The Act provides that '*When the Minister is furnished with advice by the Committee, he shall cause particulars of the advice to be given to the Authority*'.

During the year, the Authority received particulars on:

- application of the 'user-pays' principle to the Marine Park
- the results of a survey of user-groups of the Cairns Section of the Marine Park, carried out by the Committee in 1986.





PLANNING

The Planning Section aims to provide for the protection, wise use, understanding and enjoyment of the Great Barrier Reef in perpetuity by recommending the declaration of sections of the Marine Park; and by developing and reviewing zoning plans, regulations and other management strategies. Involving the public meaningfully in the zoning process is an important part of the planning approach.

The past year was significant as zoning plans for the entire Marine Park have now been prepared. It is intended that the plan for the final unzoned section will come into effect in August 1988. Planning effort will not cease, however, as the Authority is committed to reviewing each zoning plan about every five years. The old Capricornia Section Zoning Plan was reviewed during the drafting of the Mackay/Capricorn Plan, and review of the Cairns and Cormorant Pass Sections Zoning Plans will begin in October 1988.

On behalf of the Authority, the Planning Section objectives for 1987-88 were:

- completion of the Mackay/Capricorn Section Zoning Plan
- strategic planning in relation to resource allocation in the Cairns Section
- continued development of and investigation into databases for planning support, mapping and remote sensing
- preparation for the Innovative Ways Workshop.

MACKAY/CAPRICORN SECTION

The final Zoning Plan, which took into account representations received during the public participation program and information provided through consultation with government departments, was approved by the Authority in September 1987. It passed unchallenged through Federal Parliament in May 1988. The Minister, Senator Graham Richardson, has nominated 1 August 1988 as the date the Zoning Plan is to come into effect.

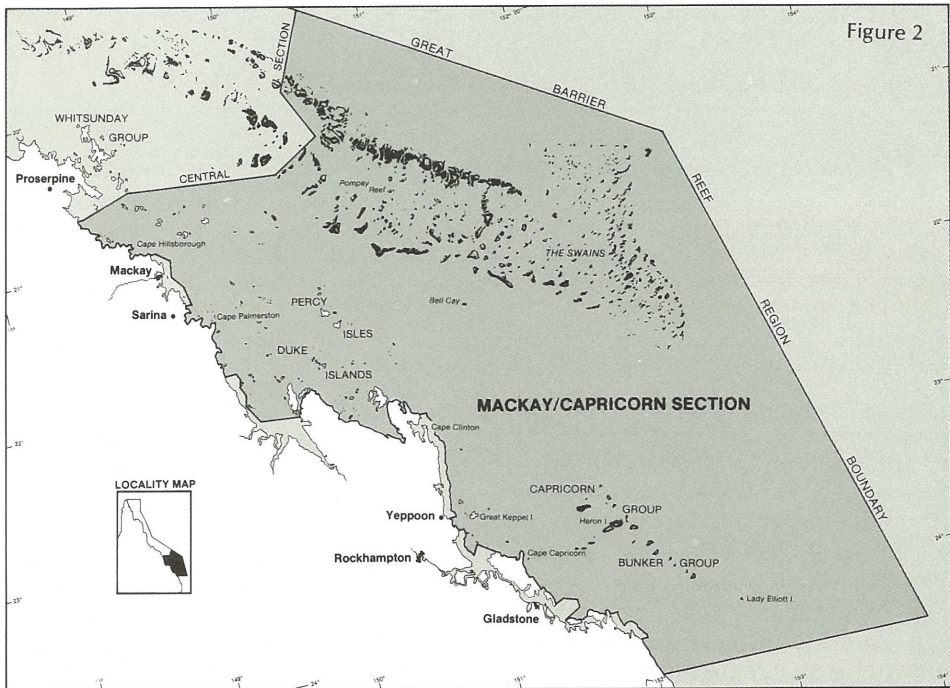
Zoning proposals for adjacent marine areas under Queensland control were developed in parallel with the Zoning Plan for the Mackay/Capricorn Section.

MEMORANDA OF UNDERSTANDING

Memoranda of Understanding with two agencies were drawn up to formalise and streamline ad hoc cooperative arrangements which have developed over

Opposite: Commercial fishing occurs in the Marine Park in General Use zones. The aim of management is to ensure that fishing activities do not exceed sustainable rates.

(Photo: The Pelagic Eye)



the years and to define management roles with agencies whose responsibilities overlap with those of the Authority.

Department of Defence

A draft memorandum of understanding with the Department of Defence was prepared and forwarded to the Department for comment. The memorandum seeks to establish an agreement that military exercises in the Marine Park, particularly aircraft flights, avoid a number of identified environmentally sensitive sites. These sites are mainly bird nesting sites and heavily used recreational areas. Although access to these sites is restricted under the zoning plans, the Memorandum seeks to enhance awareness of the sites among military personnel involved in planning and participating in exercises within the Park.

Government Fisheries Agencies

In the course of planning and management of the Marine Park confusion has at times arisen regarding the relative roles and functions of the Authority and the fisheries management agencies of the Commonwealth and Queensland. During the year a series of meetings took place to develop guidelines to clarify the respective positions of the agencies. The Authority is primarily concerned with conservation of all natural resources within the Marine Park, including fish stocks, while allowing reasonable use of these resources. The fisheries management agencies (Commonwealth Department of Primary Industry, Australian Fisheries Service, the Queensland Department of Primary Industries and the Queensland Fish Management Authority) are primarily concerned with the orderly harvesting of the available fish stocks. By the end of the year the guidelines were developed to a stage ready for consideration and endorsement by senior officials. An important outcome of the improved

understanding of roles is a working group to coordinate and collaborate on research.

MANAGEMENT PLANS

Area Plans

Zoning plans provide mainly for management of resource extractive activities on a section-wide scale but there is also a need for plans of management to cope with new forms of use or rapidly increasing use. For example, reefs in the area within a day trip from Cairns are the focus of an expanding local tourist industry and the most accessible sites for pontoons and moorings are the subject of increasing competition. To resolve these competing demands and to respond to increasing potential environmental impact, appropriate planning and management provisions must be devised.

During the year a study was undertaken to assess the options for development of a plan for tourism in the Cairns area. The study revealed rapidly increasing demand and consequent pressures on a number of sites which are perceived by some users to be at or beyond acceptable social carrying capacities. There were no generally recognised signs that ecological carrying capacity was being exceeded, so the issue clearly demands a complex process of social attitudinal assessment and decision making in order to provide for reasonable use of the reefs in question. At the end of the year the results of the initial study were being used to develop an appropriate consultative approach to address the issues of scarce recreational resource allocation between categories of users.

Site Management Plans

Plans of management are also needed for individual sites which are particularly sensitive to human impact or are heavily used. The first such management plan has been developed collaboratively with the Queensland National Parks and Wildlife Service (Q.NPWS) to control use of Michaelmas Cay and Reef in the Cairns Section and is now in effect. During the year, work was undertaken with Q.NPWS to initiate development of management plans for two other intensively used sites in the Cairns Section, Green Island and Low Isles and their reefs. A moratorium has been imposed on the issue of new tourist permits to Low Isles, pending completion of the management plan.

LEGISLATIVE CHANGES

Amendments were made to the Great Barrier Reef Marine Park Regulations during the year. The purpose of these amendments is to extend the application of the Regulations to the Central Section of the Park, for which a zoning plan is now in effect. Regulations concerning the permit system were also clarified. These relate to the taking of protected species for scientific research or educational purposes, the definition of 'commercial net', advertising of Reef Appreciation and Reef Research Areas, spearfishing with the use of underwater breathing apparatus and offences involving a vessel or aircraft.

The *Sea Installations Act 1987*, which came into effect on 6 November 1987, is new Commonwealth legislation that overlaps with the Great Barrier Reef Marine Park Act in some respects. The new Act seeks to regulate offshore structures that may be sited outside the Australian Territorial Sea but within an area generally consistent with the 200-Mile Fishing Zone. This Act allows application of a body of civil and criminal law to offshore structures and makes

provision for adequate safety and environmental standards. Administrators of the Sea Installations Act have liaised with staff of the Authority to make arrangements for the division of responsibilities where the two Acts overlap.

INNOVATIVE WAYS WORKSHOP

Staff prepared the groundwork for a major Authority workshop to be held in July 1988. The workshop will focus on the examination of innovative approaches to planning and management of the Great Barrier Reef Marine Park, in the light of both changing patterns of use and overall increasing intensity of use.

In particular it will aim to:

- examine and evaluate current approaches to multiple use of marine resource planning and management, with emphasis on the GBR Region
- evaluate other innovative approaches which could be applied in the Marine Park in a manner acceptable to the community.

The Workshop, to be held at a venue on Magnetic Island near Townsville, will analyse the roles and influences of the major user groups of the Marine Park. Specific discussion sessions will be held on the topics: conservation/heritage, fisheries, tourism, planning and management.

Invitations have been extended to individuals and representatives of organisations who have had an active involvement in the planning and management of the Marine Park, or who have a particular interest, expertise or experience in the topics to be discussed. The Great Barrier Reef Consultative Committee will be deeply involved in the workshop.

MAPPING

Preparation of the Great Barrier Reef Series of maps continued to be the major mapping project. This series of 26 individual map sheets, at a scale of 1:250 000, will cover the entire Great Barrier Reef Region. The Series provides the mapping base for zoning plans and there will be ten map sheets covering the Mackay/Capricorn Section. Maps in this Series for the Far Northern and Central Sections have previously been released.

Preparation of the Mackay/Capricorn maps is a joint mapping project with the Q.NPWS; Queensland Marine Parks adjacent to the Section are also displayed. The Mackay/Capricorn maps are being produced with the assistance of the Australian Survey and Land Information Group (AUSLIG), Department of Administrative Services, formerly the Division of National Mapping, Department of Resources and Energy. Other small scale maps were prepared to support the Mackay/Capricorn Section Zoning Plan and Introductory Brochure.

The Bathymetric Survey Program in the Mackay/Capricorn Section continued through the year. The Authority continued to receive large scale maps prepared by AUSLIG. These detailed and highly accurate maps are provided for areas of the Reef identified by GBRMPA or Q.NPWS as needing intensive management in the near future.

REMOTE SENSING

Significant progress in the assimilation of digital mapping technology into the operations of the Authority has been made through the use of the micro-

BRIAN microcomputer system. Ability of the micro-BRIAN system to process remotely-sensed data has been enhanced with the addition of a 1600 bits per inch tape drive unit and an inkjet plotter. Data on magnetic tape may now be fed directly into the microcomputer and copies of images displayed on screen may now be recorded on paper.

Extensive acquisitions of remotely sensed data were made during the year. Several Landsat MSS (multi-spectral scanner) scenes were purchased and eleven Landsat TM (thematic mapper) scenes were allocated to the Authority through participation in the AMIRA (Australian Mineral Industry Research Association)/CSIRO signal processing experiment.

Several Authority staff began micro-BRIAN training courses given by Dr D Kuchler of Mapping and Monitoring Technology Pty Ltd. Knowledge of the micro-BRIAN system will enable remotely-sensed data to be used in a broad range of projects addressed by Authority staff and particularly in management of the resources of the Marine Park.

CZCS (Coastal Zone Colour Scanner) imagery continued to be analysed to chart seasonal variations in phytoplankton distribution and water turbidity through the year. The project, 'Relationships between *Acanthaster* outbreaks and water mass characteristics in the Great Barrier Reef Region', is investigating a possible link between phytoplankton density and the genesis of crown of thorns starfish outbreaks. The project is expected to be completed in early 1989.

AUTOMATED DATA PROCESSING

The Authority mini-computer, a VAX 11/750, supports a number of major databases and has become overburdened with increasing use, both in-house and by an expanding network of remote users. Response speed during times of peak demand has consequently been seriously reduced and precipitated a review of current and projected ADP needs. It was decided to significantly upgrade the Authority's computing capacity and acquire a new mini-computer dedicated to database applications. Following extensive benchmark testing of seven potential units, a Hewlett-Packard 9000/825 mini-computer has been acquired and will be installed in July 1988.

The UNIX operating system will be employed on both mini-computers and on the AT and T 3B2 which is a microcomputer devoted exclusively to word processing applications. The common operating system greatly facilitates inter-connection of the three computers, thus permitting regular network activities such as electronic mail, document transfer and printer resource sharing. The new installation will allow development of further databases of natural resource inventories for monitoring purposes and enable upgrading of existing software, such as the permits issue system.

Expression of considerable interest by staff in graphical and other specialist computing applications has led to the acquisition of a network of Apple MacIntosh personal computers for the Canberra office of the Authority, for word processing and general file management. The number of similar units in the Townsville office will also soon be increased. Although currently there is no communication between the MacIntosh and the UNIX based system, imminent release of UNIX for the MacIntosh will allow inter-connection in the near future.



PARK MANAGEMENT

The Park Management Section aims to achieve cost-effective implementation of zoning plans, regulations and other management strategies in conjunction with Queensland Government agencies and others. The legal and strategic framework for management is provided by the Act, zoning plans and regulations. Under a 1979 agreement between the Commonwealth and Queensland Governments for a complementary approach to the management of the Marine Park, the Authority is responsible for the development of management planning, policy, programs, and objectives, and general oversight of Marine Park management. Queensland National Parks and Wildlife Service (Q.NPWS) is the principal agency responsible to the Authority for day-to-day management of the Marine Park. Other agencies with ancillary responsibilities for day-to-day management are the Queensland Boating and Fisheries Patrol, Queensland Water Police, the Australian Federal Police and the Federal Sea Safety and Surveillance Centre.

During 1987-88 the Section worked towards the following objectives:

- development of a policy for structures on reefs
- introduction of an integrated aerial surveillance system for the whole Marine Park
- introduction of management for the Central Section
- preparation for management of the Mackay/Capricorn Section
- preparation of programs for 1988-89 to 1990-91
- completion of the Agreement between Governments and the Authority on day-to-day management.

Except for the introduction of an integrated aerial surveillance system, these objectives were achieved. Several projects turned out to be unexpectedly complex and with others unforeseen added considerably to the work undertaken by staff. These included:

- arrangements for the introduction of the *Sea Installations Act 1987* in the Great Barrier Reef Region
- development of policy for revenue raising including arrangements for the introduction of a concessions system for commercial operations in the Marine Park

Opposite: Traditional hunting and fishing are managed by cooperation between Aboriginal communities and management agencies to sustain and replenish the Reef's rich resources. (Photo: Ben Cropp)

- permit assessments for reef-based tourism, particularly those involving infrastructure, notably:
 - ‘Fantasy Island’ pontoon — John Brewer Reef
 - Heron Island Harbour dredging
 - Magnetic Keys marina development — Nelly Bay, Magnetic Island
 - Shute Harbour marina
 - Hardy Reef walkway
 - Fitzroy Reef floating hotel.

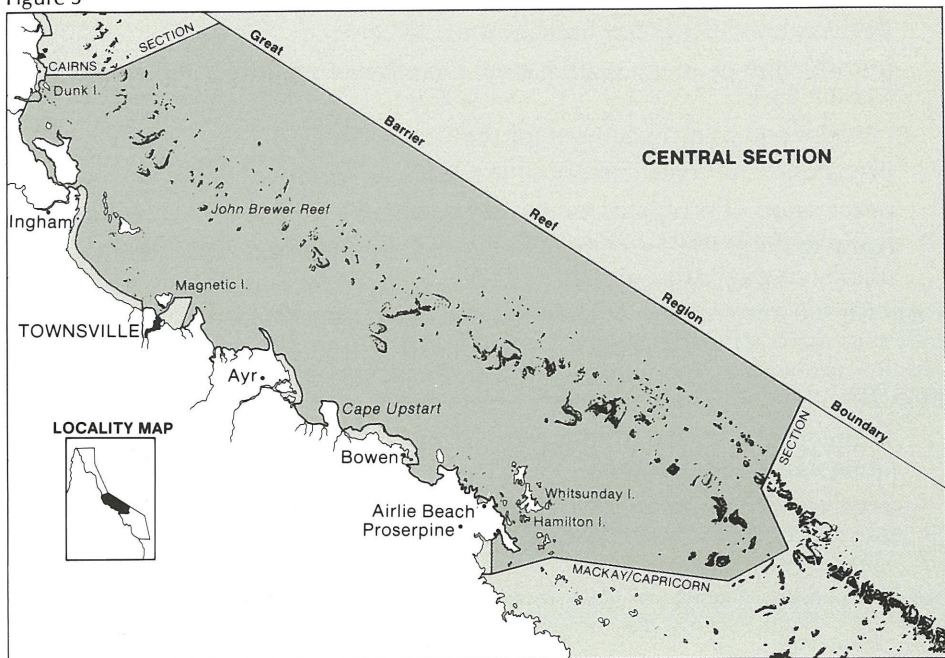
DAY-TO-DAY MANAGEMENT

The Central Section Zoning Plan came into effect on 1 October 1987. The enormous task of establishing management in new areas was begun earlier in the year and will continue for a number of years. The Q.NPWS has recruited an additional five permanent staff and two wages staff to supplement the existing 12 staff based at Airlie Beach, Cardwell, Ingham and Townsville for island and coastal management. They attended an introductory training course at Magnetic Island on 22-27 May 1988.

The initial effort is going into establishment of infrastructure and systems, although substantial progress is being made in management planning for islands and reefs requiring specific controls. Also, tourist operators and other users who now require a permit for activities in the Central Section have been contacted and most have had permits issued.

Day-to-day management for Capricornia Section continued concurrently with substantial preparation for the introduction of the zoning plan for the Mackay/Capricorn Section on 1 August 1988.

Figure 3



Day-to-day management for Cairns and Cormorant Pass Sections has been effective, but now faces new challenges from the huge influx of tourists and new tourist operators for the areas offshore from Cairns and Port Douglas.

Great Barrier Reef Marine Park Management Co-ordinating Committee

This committee is a forum for coordination of management responsibilities within the Great Barrier Reef Region and comprises officers of the Authority, Q.NPWS, the Queensland Departments of Harbours and Marine, Primary Industries and the Premier's Department. The Committee met twice during the year.

Resources

Resources for day-to-day management continue to be of concern. Despite huge increases in the area and responsibilities for day-to-day management, funding has not increased at a commensurate rate. When the Central Section Zoning Plan came into effect on 1 October 1987, the area of Marine Park to be managed increased by 59%. Funding increased by 17%. A further 66% increase in the area to be managed will occur on 1 August 1988. Projected funding increases for 1988-89 are of the order of 21%. However, part of this increase includes pre-existing costs met by Queensland for management of island national parks.

Table 1 shows the rate of funding per unit area of zoned Marine Park.

Table 1

FUNDING FOR DAY-TO-DAY MANAGEMENT OF THE MARINE PARK

Year	Total Cost \$	Total Area km ²	Unit Cost \$/km ²
1981-82	250 432	12 000	20.86
1982-83	533 641	12 000	46.13
1983-84	1 130 747	47 000	24.05
1984-85	1 902 534	47 000	40.48
1985-86	2 294 165	130 000	17.64
1986-87	2 819 780	130 000	21.69
1987-88	3 313 173	207 000	16.00
1988-89	4 020 000	344 000	11.68

Table 2 gives details of the 1987-88 expenditure on day-to-day management of the Marine Park and the funding approved for 1988-89. Table 3 shows how costs are shared between the Commonwealth and Queensland.

Staff resources both in the Authority and Q.NPWS are stretched to the limit, and it is not possible to give adequate management effort to all areas requiring it. Large areas of the Marine Park, particularly in the Far Northern Section, receive little or no management, and usually only on an expeditionary basis.

This situation will not improve in the foreseeable future. Instead it is likely that management resources will need to be concentrated more and more in areas of high intensity use only.

Table 2
EXPENDITURE ON DAY-TO-DAY MANAGEMENT OF THE GREAT BARRIER REEF MARINE PARK

Sections	Expenditure 1987-88 \$	Approved Annual Program 1988-89 \$
Cairns and Far Northern		
Salaries & Operating	1 084 000	1 189 000
Capital (inc. post initial)	29 000	231 000
Central		
Salaries & Operating	543 000	933 000
Capital (inc. post initial)	490 500	260 000
Mackay/Capricorn		
Salaries & Operating	979 000	1 180 000
Capital (inc. post initial)	172 500	227 000
All Sections		
Salaries & Operating	2 606 000	3 302 000
Capital (inc. post initial)	692 000	718 000
TOTAL	3 298 000	4 020 000

Table 3
COST SHARING FOR DAY-TO-DAY MANAGEMENT OF THE GREAT BARRIER REEF MARINE PARK

	Expenditure 1987-88 \$	Approved Annual Program 1988-89 \$
Queensland		
Salaries & Operating	1 303 000	1 651 000
Post-initial Capital	97 000	121 500
Total	1 400 000	1 772 500
Commonwealth		
Salaries & Operating	1 303 000	1 651 000
Post-initial Capital	97 000	121 500
Initial Capital	498 000	475 000
Total	1 898 000	2 247 500
TOTAL	3 298 000	4 020 000

Prosecutions

Twelve prosecutions of offenders occurred during the year with fines being imposed on those who were convicted (up to \$1000).

Replenishment Area

A major fishing research project was mounted by Q.NPWS at Boulton Reef in the Capricornia Section. This reef had been closed in 1983 as a 'replenishment area'. On reopening, extensive fishing effort was measured to determine the catchability of fish and the fraction of available fish stocks taken. Preliminary results show that in 1200 hours of fishing in the two weeks after reopening,

approximately 2000 coral trout were caught which is an estimated 25% of the total population of coral trout on that reef.

Training

Staff of Q.NPWS and the Authority conducted several successful training courses for staff of tourist operators during the year. Further courses are planned.

Shipping and Pilotage

The Authority again expressed the need for compulsory pilotage in the Reef Region in a plenary paper presented by the Executive Officer, Dr D W Kinsey, at the IXth International Maritime Pilots Association Congress 1988.

Agreement

In May 1988, the Commonwealth and Queensland Governments and the Authority signed an Agreement confirming the arrangements for day-to-day management of the Great Barrier Reef Marine Park and Queensland marine and island national parks which had been in place since 1981. In addition, a Deed of Agreement for the control, use, maintenance and disposal of assets created under the main Agreement was signed.

Signs

The Q.NPWS completed a sign manual for the Great Barrier Reef Marine Park. The manual complements the Service's own manual for land-based parks.

Surveillance

Staff of the Authority and Q.NPWS put substantial effort into a review of the Great Barrier Reef Coastwatch surveillance arrangements. Agreement was reached on an efficient and less costly integrated system of contracts managed by the Federal Sea Safety and Surveillance Centre, Canberra, using private aircraft on contract and Q.NPWS staff as observers. Considerable resources were also put into preparation of schedules, tender documents and data handling systems. However, these arrangements have now lapsed and have been superseded by another review of Coastwatch operations by Mr H Hudson.

Volunteers

Some progress was made in assessing the worth of volunteer programs to assist in management of the Marine Park. It is hoped that further progress can be made in 1988-89, recognising that successful volunteer programs require substantial commitment of staff and resources to establish and maintain.

Moorings

A number of approved moorings have been placed in the Marine Park in the Cairns Section primarily for management use. In 1988-89, private boat owners will be encouraged to install approved moorings and adopt anchoring standards.

PERMITS

The number of permits issued increased greatly during the past year largely due to the introduction of the Central Section. Also, more complex permit applications were received due to growth in proposals for reef-based structures, mariculture and marinas.

Figure 4
PERMITS ISSUED 1987-88

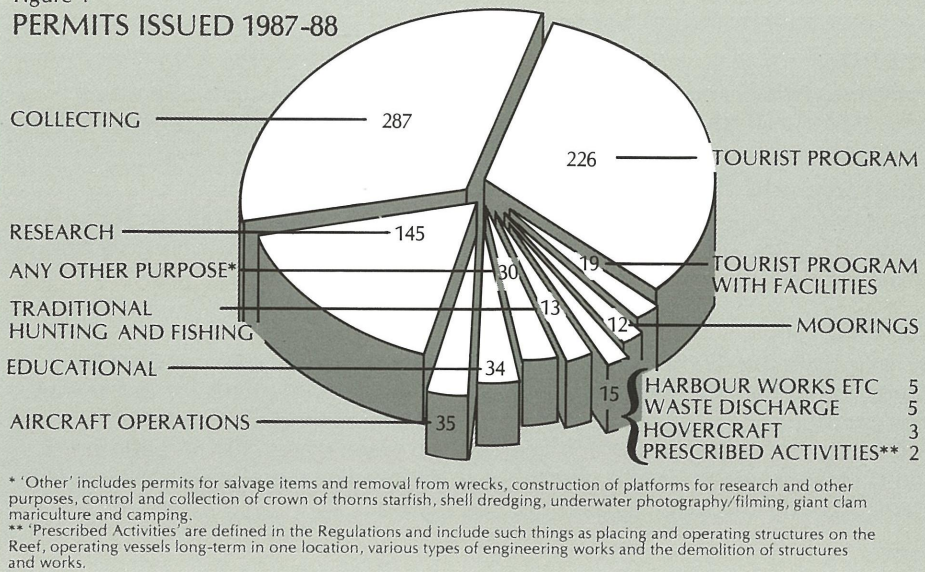


Figure 4 shows the breakdown of permits issued.

During the year agreement was reached with Queensland on the introduction of dual permits for activities requiring permission under both the Great Barrier Reef Marine Park Act and the Queensland Marine Parks Act. This innovation was introduced to simplify administration for the public, promote the concept of complementary management and reduce the possibility of jurisdictional disputes or challenges.

All permits issued are now published at least quarterly in the Australian Government Gazette.

Permit procedures were reviewed during the year to eliminate unnecessary permits, streamline operations and allow more time for more complex issues.

Major Projects

During the year, permits were issued for the following major projects:

- the installation and operation of the floating hotel at John Brewer Reef
- the installation of a new pontoon, 'Fantasy Island', at John Brewer Reef
- the dredging of the harbour at Heron Island
- new reef day trip operations for tourist operators primarily in the Cairns and Central Sections.

'Fantasy Island' was a concrete, doughnut-shaped pontoon, designed as a day-trip reef destination by Reeflink Pty Ltd (owned by Mr Doug Tarca). It was intended to replace a string of steel pontoons. 'Fantasy Island' was constructed as a number of connected units.

Prior to issuing the permit, the Authority required a security bond to be lodged by Mr Tarca.

On 30 May 1988, a week after being put into operation, 'Fantasy Island' sank and subsequently parts of the structure broke up.

Mr Tarca has been asked to remove the wreckage at no cost to the Commonwealth.

Heron Island Pty Ltd was granted permission on 22 September 1987 to dredge and dispose of sediment from **Heron Island Harbour**. Permission was granted after extensive consultation and assessment.

Dredging was undertaken for the maintenance of the existing entrance channel and harbour, to allow some expansion of the harbour basin to facilitate manoeuvring of a new catamaran ferry, for the repair of existing bund walls, and for the construction of a jetty.

Dredging was carried out over a period of approximately two months and approximately 12 500 cubic metres of sediment were removed.

Dredging operations resulted in a large 'chalky' and unattractive plume exuding from the harbour entrance. The sediment spread northwards along the reef flat at each high tide.

The dredging caused a small amount of coral mortality. Two outcrops of brain coral on the reef slope, each about 1.5 m high and 3 m in diameter, have suffered greater than 50% mortality but may recover over a period of years. Several very small coral heads on the reef flat also appeared to have died, as well as some areas of branching corals on the reef slope.

Detailed surveys have shown that the total area of damage is about 30 square metres — out of the total area of Heron Island Reef of 37 500 000 square metres.

Proposals Under Consideration

Major permit considerations included environmental impact assessment for:

- floating hotel at Fitzroy Reef
- marina at Nelly Bay, Magnetic Island
- pontoon at Masthead Island Reef
- day trip destination at Arlington Reef
- walkway at Hardy Reef
- seawater intake pipeline at Heron Island Research Station
- marina at Shute Harbour
- major day trip destination at Thetford Reef.

A Memorandum of Understanding was completed between the Authority and the Department of the Arts, Sport, the Environment, Tourism and Territories (DASETT) on the operation of the *Environment Protection (Impact of Proposals) Act 1975*. It is expected that formal environmental impact assessment under this Act for projects in the Marine Park will at least quadruple during 1988-89. The Authority has adopted the policy that, as far as possible, any proposal to place structures on reefs, or undertake dredging or reclamation, should be subject to some form of environmental impact assessment with public review.

During the year, there were many requests for a moratorium on reef-based structures, particularly floating hotels, because of perceived impacts and loss of social amenity in the form of wilderness values. The Authority is considering this matter carefully.

Permit-Related Issues

Under the **Sea Installations Act 1987**, it is proposed that the Authority Chairman act as delegate of the Minister in administering this Act in the Marine Park, for developments with a capital value not exceeding \$5m. Substantial effort has gone into assisting the Department (DASETT) in introducing the Act to affected operators, preparing delegations and administrative arrangements.

The introduction of a **concessions system**, to apply to commercial operators, has been evaluated. A concession is defined as the right to operate a commercial establishment or activity on public property. Concessions are regulated by contract specifying conditions and standards of operation and require the payment of a fee. The scheme would allow:

- more efficient and equitable allocation of scarce resources
- application of the 'user-pays' principle to operations which profit from using the common property of the Reef
- revenue raised to be applied directly to reef management, particularly to supplement day-to-day management resources.

If such a scheme was introduced, substantial consultation would be undertaken with prospective concessionaires to allow for adjustments to be made in operations and marketing before introduction.

The issue of the onus of **liability** on the Authority for activities in the Marine Park is still very real. The initial action arising from the helicopter accident at Black Reef in 1985 still continues and may not conclude until 1989. A further four writs arising from the same accident have now been served on the Authority. The Authority is contemplating recommending the introduction of legislation limiting its liability for such accidents.

PERFORMANCE INFORMATION

Performance for 1987-88 was assessed in terms of efficiency and effectiveness.

Efficiency is defined as the extent to which day-to-day management infrastructure and systems have been established and their cost as measured by:

- implementation of annual objectives
- permits processed

Most annual objectives were achieved, as well as many other unforeseen activities.

In 1987-88, 816 permits were issued compared with 636 and 521 in the previous two years.

Effectiveness is defined as the extent of community understanding and acceptance of the provisions of zoning, regulations and management practices assessed from day-to-day management data, permit negotiations and surveys.

It is very difficult to gauge objectively whether this performance criterion was met. Informal surveys of reef users have revealed that there is still a lack of understanding of zoning plan provisions in some sections of the community. In permit negotiations, some applicants are well aware of permit requirements and seek consultation before committing funds; in other cases, operators commit funds to substantial projects before inquiring about Marine Park requirements.

The worth of this performance indicator, and the practicality of measuring it, will be reassessed during 1988-89.

THE FUTURE

Management of the Marine Park faces accelerating and more complex demands from issues generated in the Marine Park and resources remain insufficient to meet such demands to the standard that we desire and which the community appears to expect. Non-essential tasks have been shed and streamlining introduced wherever possible.

Improved planning and predictive capability are required in the future to allow resources to be placed where pressures are expected to be greatest. As pressure grows for use of scarce reef resources, especially from tourism, the Authority will be called on more and more to limit use of particular sites and to separate conflicts between users in order to ensure that the long-term aim of conservation is met.



RESEARCH AND MONITORING

The Research and Monitoring Section aims to achieve competence and fairness in the care and development of the Marine Park by obtaining and interpreting information relevant to understanding the Great Barrier Reef and to implementing Authority programs.

Section staff undertake some research, but they are primarily responsible for managing and coordinating commissioned research projects. Projects are determined by their relevance to planning and management of the Marine Park. Most research is contracted externally to agencies including universities, government bodies and private consultants.

Other duties of the Section's staff include reviewing research permit applications, Public Environment Reports and Environmental Impact Statements; contributing to the AMRIP (Australian Marine Research in Progress) database; providing technical advice to the Authority's Education/Information Section; liaison with scientific bodies; reviewing proposals, relevant to management of the Marine Park, for Australian Research Council grants (formerly Marine Sciences and Technologies grants administered by the Marine Research Allocations Advisory Committee) and providing scientific advice under the REEFPLAN oil spill contingency plan.

The annual research program covers a wide range of disciplines including marine biology, physical, chemical and social sciences. Many of these projects are multi-disciplinary to provide a broad appreciation of particular sites or issues.

Research and monitoring priorities are defined annually. Priorities are aimed at addressing specific issues that relate to effective management of the Marine Park.

Priorities for 1987-88 were to:

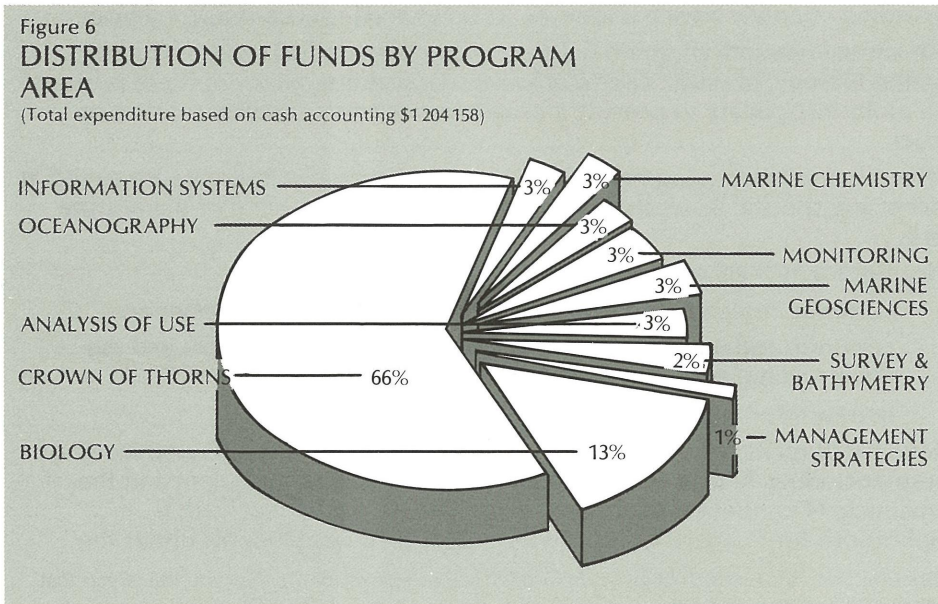
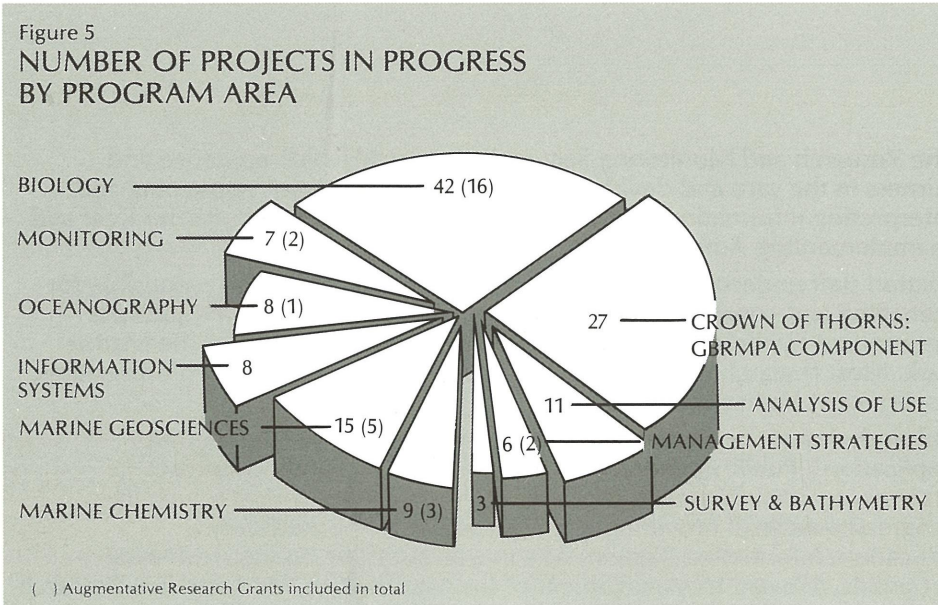
- continue research into the crown of thorns starfish phenomenon
- continue and initiate new site-specific monitoring programs and the development of a reef-wide monitoring program
- review information regarding the impacts of trawling.

Section staff managed 136 projects in 1987-88. Funding was provided for 92 of these (including 10 that were not foreseen in the annual program) and the remaining 44 continued without funding. The Authority received 37 applications for financial assistance from post-graduate students under the

Opposite: Scientific research helps us understand the complexity of the Reef and the effects that human activity may have on it.

Augmentative Grant Scheme. Twenty-one awards (to a maximum of \$1 000) were granted for a total of \$18 500.

Figures 5 and 6 show the breakdown of projects in progress during 1987-88 by program area and in dollar terms respectively. A list of projects is shown in Appendix F.



Of the 136 projects in progress during 1987-88, 21 (16%) were completed during the year, 16 (12%) have funding committed in 1988-89 and the remainder are continuing but do not require further funding.

The Section consolidated and expanded relationships with other regional and national agencies throughout the year. Because of the multi-disciplinary nature of many projects and the number of organisations involved in the management and use of the Park, this liaison is seen as vital to effective operations. The Section works closely with organisations such as Queensland National Parks and Wildlife Service (Q.NPWS), the Queensland Department of Primary Industries (QDPI), James Cook University of North Queensland (JCU), the Australian Institute of Marine Science (AIMS), the Queensland Fish Management Authority (QFMA) and the Queensland Commercial Fishermen's Organization (QCFO).

The Authority chairs the recently established multi-agency Advisory Committee on The Effects of Fishing in the Great Barrier Reef Region which will coordinate research on fishing in the Region. Priorities include the impacts of trawling and reef fishing.

Other activities included the REEFPLAN working group and a meeting of experts to discuss the effects of enhanced nutrients on corals of the Great Barrier Reef. Recommendations from the latter have been put into practice with subsequent monitoring of nutrient levels in the vicinity of tourist resorts.

PERFORMANCE INFORMATION

Efficiency is assessed in terms of the cost of research, monitoring and interpretation and the achievement of targets as measured by compliance with budget and project deadlines and the time taken to disseminate information.

Overall, the Research & Monitoring program remained within the Section's budget of \$1 645 517 for the 1987-88 financial year. An additional 10 projects, not foreseen at the start of the year, were funded from savings in other areas of the program.

Of the 107 projects managed by Section staff (excluding those with Augmentative Grants), 47 (44%) submitted final reports; 36 (34%) are continuing into 1988-89 and the remaining 24 (22%) were behind schedule. Though most (68%) of this last group were from the Marine Biology and Crown of Thorns Starfish sub-programs, these two areas also contained the majority (53%) of projects.

The Section routinely distributes summaries of all relevant reports to other sections of the Authority and the Q.NPWS. Because reports are printed in a variety of formats, ranging from internal summaries to typeset Technical Memoranda (for external distribution), the time taken to disseminate results varies considerably. Internal summaries of final reports are typically distributed within two weeks of their acceptance.

Effectiveness is defined as the extent to which information, gained through research and monitoring, assists in achieving the Authority's objectives. Some shortfalls in the information obtained for planning and park management have been identified. Mechanisms to improve the relevance of commissioned research to the needs of other Sections are being instigated. Some of these include combined Section meetings to determine priority areas of research;

joints supervision of projects; and assessment forms for distributed research reports.

Highlights of the more topical projects undertaken during 1987-88 are described below.

CROWN OF THORNS STARFISH

Following recommendations of the Crown of Thorns Starfish Advisory Committee (COTSAC) and the House of Representatives Standing Committee on Environment and Conservation in 1985, a three to five year program of research on the starfish began.

The crown of thorns starfish phenomenon continued to be a major issue during the year. Accordingly, the program received a special allocation which amounted to 66% of the Section's funding.

Evidence of Past Occurrences

One major finding of the research program was evidence of large numbers of crown of thorns starfish on some reefs for at least 3 000 years. These studies are continuing and being extended to Heron Reef (where crown of thorns starfish outbreaks have not been recorded) and other reefs with known outbreak histories.

Status of Outbreaks

A systematic survey of 228 reefs of the Great Barrier Reef by AIMS in 1985-86 indicated that 28% of reefs sampled had been affected by the crown of thorns starfish to varying degrees. The most seriously affected area was the central third of the Reef (between Lizard Island and Townsville) where 65% of reefs sampled were affected to some extent. The northern and southern thirds were less affected (6-7% of reefs sampled).

The outbreaks are moving southwards out of the Townsville sector. About 27% of reefs sampled by AIMS off Cape Upstart are now infested. Over 100 reefs are surveyed each year by AIMS in the COTSAC research program.* The Authority also maintains a database for users' reports.

Regeneration of Reefs

Studies on Green Island (affected 1979-82) showed that large-scale recruitment of new corals and regeneration from surviving parts of colonies were occurring. 'Replanting' corals on affected reefs accelerated recovery, but is extremely expensive and would be practical only in limited areas such as coral-viewing sites.

Controls

Trials assessing the feasibility of controlling the starfish continued during the year. Over 5 000 starfish were injected with copper sulphate on Holbourne Island Reef during three expeditions by Army and Navy divers at a cost of about \$20 000. Despite the small size of the reef (2 km long), its proximity to

*According to the most recent AIMS survey results released in November 1988, about 31% of reefs surveyed on the Great Barrier Reef have been affected to some extent. In the central third, the figure is 65% of reefs sampled; in the northern third 4%; while in the southern third, the figure is now 20%. Forty per cent of reefs off Cape Upstart are now affected to some extent. Small outbreaks have recently been reported in the Whitsunday Group and monitoring is continuing. Eradication programs are in progress in areas of special importance to tourism operations. These programs have a good chance of success because the outbreaks have been small compared with some of those on outer reefs further north.

shore and the commitment of considerable effort and funds by the Authority, the program was unsuccessful. While all efforts to assist tourist operators in small-scale controls will be continued by the Authority, the trial controls indicate larger-scale operations are extremely costly and are probably ineffectual.

Dissemination of Results and Public Education

Results of the program were widely distributed during the year. The 57th congress of ANZAAS in August featured a full day session on the starfish, with 13 papers covering a range of studies funded under the Crown of Thorns Research Program.

A major session on the research program will also be held at the Sixth International Coral Reef Symposium to be held in Townsville in August 1988. Most researchers funded under the program will be presenting papers.

To better inform the public about the starfish phenomenon, the Authority produced a 40-page booklet and a 28-minute video in mid 1987. Response, particularly to the booklet, has been excellent. It is intended to update the video during the coming year.

Problems

The Authority has sought extensive external advice on all aspects of the management-related research program — in defining research priorities, in reviewing research proposals, in the design and conduct of projects and in the evaluation of final reports. Designing projects to test hypotheses on the causes of outbreaks has continued to prove difficult. The Authority has again advertised nationally for proposals and expressions of interest in this area. Proposals will be reviewed by the advisory group of experts (COTSARC) and work will start later in the year.

Absence of a financial commitment from the Commonwealth beyond each financial year has seriously affected long-term planning and staffing of many research projects. The time span between the two known episodes of the outbreaks (about 15 years), the complexity of the coral reef ecosystem, and the fundamental questions of reef ecology posed by the crown of thorns phenomenon necessitate a long-term research and monitoring commitment.

Logistic problems for field work will increase as the program covers the recovery phase of reefs off Townsville and the necessary surveys to assess the extent of populations of the starfish in the Whitsunday area.

The Crown of Thorns Starfish Advisory Review Committee (COTSARC) will meet again in August 1988 to review research progress and to recommend future directions.

OCEANOGRAPHY

Water circulation patterns through the Great Barrier Reef Region play a critical role in determining distribution and survival of eggs and larvae of most reef animals. They also determine effects and extent of waste water disposal and dispersion of pollutants.

In recognition of this importance to planning and management decisions, the Authority commissioned a review of oceanographic knowledge. The study drew together all relevant information on water movement in the Reef Region

as well as other geographic areas. It has been decided that there is a need to coordinate the Authority's oceanography program and to obtain expert assistance in reviewing sedimentation and pollution impacts of proposed tourism developments.

MONITORING

The Authority continued to monitor key sites and events where there are existing or potential management problems. These included Green Island, Norman and Cape Tribulation Reefs in the Cairns Section; John Brewer Reef and the Whitsunday reefs in the Central Section; and Heron Island Reef in the Mackay/Capricorn Section. Most of these projects are long term and multi-disciplinary, covering aspects such as water quality, coral cover and reef usage.

Many of these are based on the 'user-pays' principle where developers and operators are meeting the cost of the monitoring program.

At the same time, several other issue-oriented, but broader scale and baseline programs have been initiated, often in collaboration with other organisations such as Q.NPWS, JCU and AIMS.

Techniques

The Authority has commissioned projects to review and rationalise the diversity of monitoring techniques used in many previous studies. Analysis of manta tow data, collected over many years by different methods, has commenced. Existing data will be converted to a computer-compatible form that will be readily accessible for planning and management purposes.

Information Management

The Authority has also embarked on a joint project with the Australian Littoral Society to compile a computer-based inventory of everything known about the islands and reefs of the Great Barrier Reef. It includes such information as physical characteristics of the reefs and islands, uses, island tenure and references to research conducted in the area. The inventory will also update the JCU Reef Gazetteer, giving more accurate positions of islands and reefs. When complete, it will form the hub of the Authority's Geographic Information System (GIS).

FUTURE DIRECTIONS

Eight priority areas have been identified by the Section for the 1988-89 financial year:

- Effects of Trawling
- Effects of Demersal Reef Fishing
- Reef Benthos Monitoring
- Water Quality Assessment
- Human Use Monitoring
- Social Impact Assessment
- Management Studies
- Oceanography

A number of baseline and pilot studies have been conducted during the year as groundwork to this program.

Crown of thorns starfish remains a priority area and research and monitoring will continue subject to ongoing government support for the existing program.

EDUCATION AND INFORMATION

The Education and Information Section's objective is to enhance community understanding, appreciation, experience of and support for the Great Barrier Reef, the Marine Park and the Authority. The Section provides advice, education and information materials and services.

The Section's responsibility covers the following services:

- Increasing community awareness, understanding of, and support for Authority policies, programs and services.
- Encouraging public appreciation of, and responsibility towards, the Great Barrier Reef Marine Park.
- Supporting the work of all Sections of the Authority through the provision of design and publications assistance.
- Cooperating with other government departments concerned with the Great Barrier Reef Marine Park to achieve the Authority's goal and aims.
- Disseminating educational materials and information services for the Authority.
- Encouraging community cooperation and participation in planning and managing the Great Barrier Reef Marine Park.
- Supporting community organisations, commercial or otherwise, in providing quality public education, information and interpretive services about the Great Barrier Reef Marine Park.

PERFORMANCE INFORMATION

The **efficiency** of education and information and advisory services is assessed in relation to their cost and the extent to which they meet the Authority's objectives, as measured by:

- compliance with project deadlines and budgets
- extent of utilisation of products
- average cost per unit area of zoned Marine Park.

The **effectiveness** of education, information and advisory services is assessed by the extent to which they inform, satisfy, create awareness, or educate the public about the Marine Park and the Authority as measured by:

- assessment of level of support for services and products (ie, growth in user demand for information/services/products)

- surveyed opinion of target populations to assess user group level of awareness and satisfaction
- expert opinion on quality of GBRMPA products.

The Education and Information Section achieved its planned annual program with only three projects not being completed. Of the program budget, 93% was spent with arrangements made for 4.4% to be carried over to the 1988-89 financial year to finalise:

- the publishing of Project Reef-Ed (a teacher resource for Reef activities and education)
- the printing of the Mackay/Capricorn Zoning Plan information kit
- the editing and printing of a Reef Activities Manual (a tour operator resource for providing better Reef experiences for visitors).

Miscellaneous administrative costs were underspent by 2.6%.

The cost of education/information per unit area of zoned Marine Park is expected to decrease over the two year period to 1988-89 as follows:

	Actual 1987-88	Proposed 1988-89
Area (square kilometres)	207 000	344 000
Cost (net expenditure)	\$999 000	\$1 030 000
Unit Cost	\$4.83	\$2.99

One of the highlights of the program was the growth in demand for education and information products and services by people who use the Reef. In order to maintain the supply of materials, and in line with Government policy, the Section extended the application of 'user pays' and disseminated a greater amount of material with record financial returns. There was a 263% increase, over 1986-87 levels, in revenue from film, video and publication sales which was used to reprint these materials in more cost-efficient quantities. Additional staff time was necessary to achieve these sales and staff have had to cope with increased financial and marketing responsibilities.

PRODUCTION OF NEW EDUCATIONAL MATERIALS

The incorporation of further zoned sections of the Marine Park had to be accompanied by the production of further explanatory, educational and statutory materials. The Central Section Zoning Plan information kit was produced and distributed to key organisations and individuals when this Zoning Plan came into effect in October 1987.

A Public Awareness Program involving television and newspaper advertising; displays; direct mailing and public meetings were among the successful methods used in informing Reef users of the new Plan. Over 1 150 information kits were distributed to Reef user groups and over 600 individual zoning maps were sold. In addition, over 2 000 specialist information brochures were distributed to commercial and recreational fishermen who use this area of the Marine Park.

New audiovisual materials and educational booklets, brochures, and maps were produced to increase public awareness and understanding of the Reef and the Marine Park. The quarterly video program *Reef Report* is now distributed to over 100 interested scientific, tourist, government and educational organisations throughout the world on a cost-recovery basis. Reef Report was also broadcast on some television networks in Australia and overseas in Japan and North America. It is estimated that potentially 30 million people could view the program overseas and more than 500 000 people within Australia. The video program *Encounters with the Reef* which describes the structure and evolution of the Reef was produced for Australian secondary schools. Over 100 copies were distributed on a cost-recovery basis during the first three months of release.

A special publication entitled *Guide to Coastal Queensland* was produced jointly with the Queensland Department of Mapping and Surveying and Q.NPWS. It includes a range of information on the Reef and Marine Park and has been sold widely at Expo and other outlets.

Two further issues of the newsletter *Reeflections* were distributed to interested individuals on the Authority's computerised mailing list. The mailing list database increased its number of contacts by 20% during the year to 5 870. Cost savings in production and postage have resulted in the unit cost of this newsletter being kept under \$1 per issue.

Three new topics were added to the *Reef Note* information brochure series: 'Dugongs', 'Shells', and 'Sharks'. A revised version of 'Turtles' was also produced. The colourful brochure 'Life on the Great Barrier Reef' was also revised. Many tour operators now use these brochures to increase visitor understanding of the Reef.

PUBLICITY

Contact with the public via the print and electronic media is essential to inform people about their Marine Park and to maintain their support for Reef conservation. The Section maintained a high level of media activity and gave assistance to authors publishing information about the Authority, the Reef and the Marine Park.

A monitoring program, established in 1986 to record all known media reports and published articles about the Marine Park that were initiated by the Section, indicated an 11% decrease (171 known reports) in press, radio, television and journal media compared to the previous year (193 known reports). However, the 1986-87 figure included much publicity for the opening of the Wonderland Aquarium and the level of publicity gained during the past year still represents a significant improvement on the baseline survey undertaken in 1986 (+77%). The media have increased their interest in Marine Park matters generally.

A more cost-effective method of distributing media releases was implemented during the year. This has resulted in improved targeting for releases with the special advantage of targeting small outlets that may have been missed previously.

REEF EDUCATION DEVELOPMENT GRANTS

The Section continued to assist community organisations to promote innovative educational materials or programs about the Reef and Marine Park. Under this project, financial assistance was provided to several organisations on a range of approved projects including:

North Queensland Games

In association with Q.NPWS, a consultant was employed to coordinate a 20-week educational program on the Reef for school children and to assist in staging the opening ceremony of the North Queensland Games. The event involved 1500 school children in the Cairns region and was seen by 15000 people. It was also televised throughout Australia. (\$6000)

Windward Publications Pty Ltd

The Section provided printing plates to include zoning information in the publication *100 Magic Miles of the Reef — The Whitsundays*. The 10000 books printed were distributed to Reef visitors. (\$975)

Marine Education Society of Australasia (Queensland)

A grant was made to the Mackay District Marine Studies Unit to cover travel expenses for a secondary school teacher to attend the MESA National Conference in Sydney. Three secondary schools make up this District Unit with over 200 students participating. (\$500)

The Authority promoted 'Seaweek', Australia's first national school awareness program for the marine environment. The grant covered production of publicity materials for the Townsville region. About 500 children visited 'Seaweek'. (\$200)

'On Cue with the Moon'

Ms Donna Toussaint was awarded a grant to assist a community arts Bicentennial dance performance on coral spawning in the Cairns region. Over 15000 people saw the production. (\$600)

REQUESTS FOR INFORMATION

Distribution of information continued to be a major growth area for the Section. Improved marketing of zoning maps, publications, posters, brochures and audio-visual material is reflected by increased wholesale sales from the Section, and by retail sales now referred directly to the Aquarium Shop. Letters requesting information about the Authority or the Marine Park continued at the same rate as in 1986-87. (1570 inquiries).

The Authority's new office, located in the Wonderland complex, has encouraged many more direct inquiries from locals and visitors.

FREEDOM OF INFORMATION

The Authority did not receive any requests under the Freedom of Information Act (FOI) during 1987-88.

The Authority has fulfilled its statutory obligation under FOI by updating as required the documentation called for under sections 8 and 9 of the FOI Act, and by regular reporting. Responsibility for granting or denying access to documents rests with the Executive Officer for requests made to the Authority, and with the Secretary of the Great Barrier Reef Consultative Committee for requests made to that body. Final responsibility for decisions rests with the

Chairman of the Authority and the Chairman of the Committee respectively. Documents available to the public are listed in Appendix D.

LIBRARY

The library provides an information service, based on published and unpublished material, to assist the Authority and its staff undertake their duties. To fulfil this function, the library provides a wide reference, bibliographic and current awareness services. The library also maintains the computer-based REEF bibliographic database which aims to index all published material about the Great Barrier Reef. To date, the number of documents on REEF database totals 10 338. A regular cumulation of entries is published.

The library collection reflects the wide interests of the Authority. Although the emphasis is on the Great Barrier Reef, the collection also contains material on tourism, environmental issues and wilderness management.

The library was relocated to the first floor of the Reef Wonderland complex in November 1987. More spacious accommodation has enabled staff to reorganise the collection and plan new directions with regard to the extensive map and aerial photograph collection. A new librarian was appointed in March 1988.

PROBLEMS AND SOLUTIONS

Effective communication with a huge range of relevant audiences is always going to be a problem in terms of the costs and techniques involved.

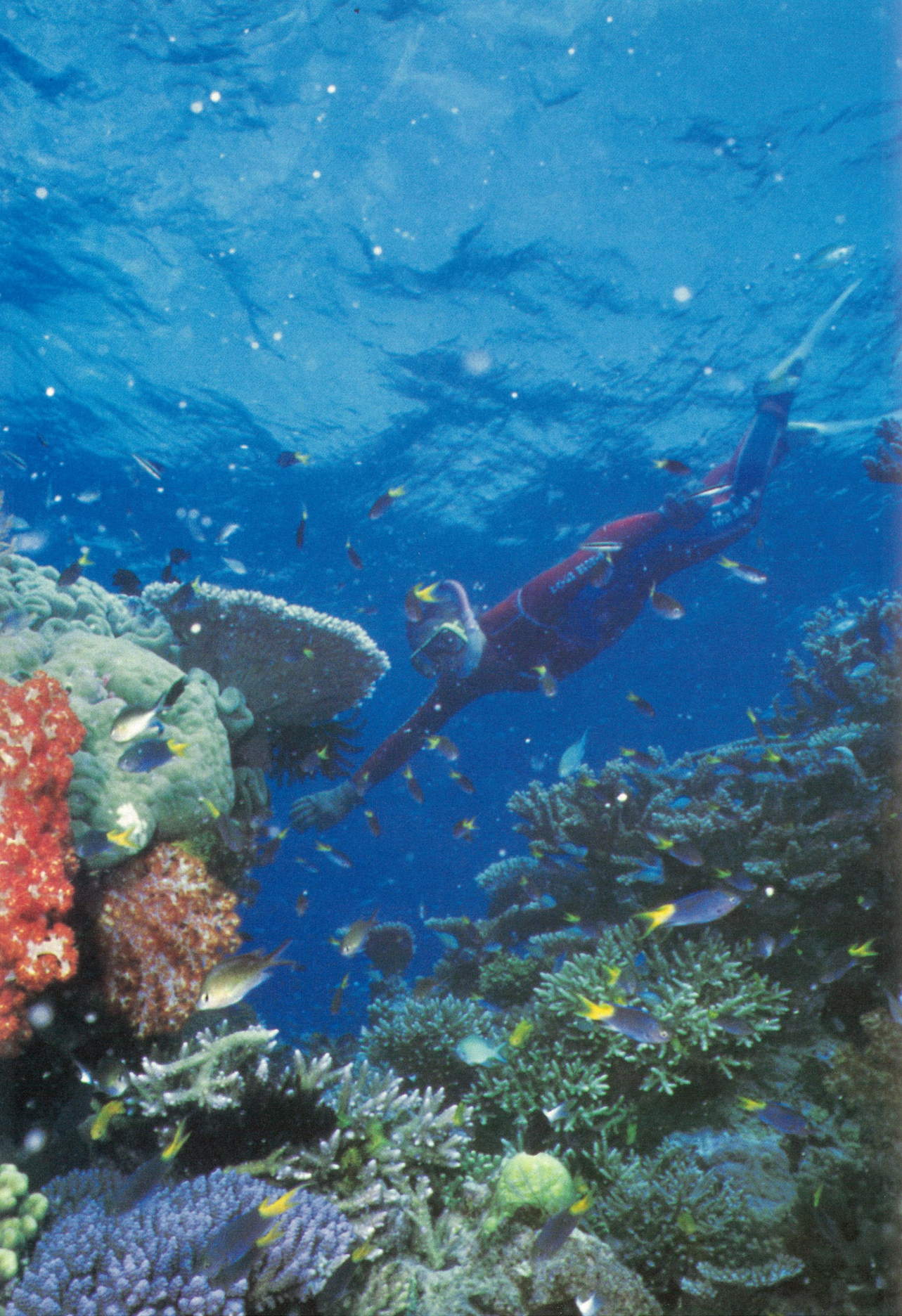
Communicating the Marine Park message is essential to continued management and the development of self-regulating behaviour in Reef users so the Section will continue to develop better ways of achieving this aim.

Revenue raising presents problems as it costs staff time and money to change to a 'selling mode'. Financial methods and organisational infrastructure are changing to conform to the 'user-pays' thrust where it clearly supports the Authority's goal and aims.

Other problems appearing during 1987-88 relate to the increasing demand for publication-quality photographic images and the high costs of purchase of images from private suppliers. Astute purchasing is barely keeping pace with demand but there are many aspects of life on the Great Barrier Reef that are simply not photographed by commercial photographers.

The Authority has deliberately not purchased video camera or editing equipment despite recognising that video and television are most effective ways of reaching target audiences. Instead it utilises local expertise in those high cost fields and restricts itself to directing production, thereby keeping both staff and equipment costs at acceptable levels.

Disseminating information direct to schools via a separate newsletter has been abandoned by the Section on a cost-benefit basis. Instead staff now produce materials for inclusion in existing student publications which has resulted in far greater distribution for the same cost.



AQUARIUM

The Great Barrier Reef Aquarium opened on 24 June 1987. Its objective is to enhance community understanding, appreciation, experience of and support for the Great Barrier Reef, the Marine Park and the Authority by providing a readily accessible onshore reef environment and interpretive facilities. It was developed as part of the Great Barrier Reef Wonderland Bicentennial Commemorative project which has these total objectives:

- to establish a national monument on the occasion of the Australian Bicentenary which will offer interpretive and educational services about the Great Barrier Reef for local, national and overseas visitors, and thus contribute to management of the Great Barrier Reef Marine Park
- to recognise and record in an enduring manner the roles of the Queensland and Commonwealth Governments in the conservation of the Great Barrier Reef, and its inscription on the World Heritage List
- to develop Great Barrier Reef Wonderland as a tourist attraction of international status, with an integration of outstanding facilities having wide appeal and involving Government and private sector funding.

The Aquarium features a coral reef system incorporating a walk-through viewing tunnel that provides a reef experience which is both fascinating and realistic, and stimulates the visitor to further explore the Great Barrier Reef. The Aquarium is operated by the Authority on a full cost-recovery basis.

Great Barrier Reef Wonderland also incorporates a branch of the Queensland Museum concentrating on the natural sciences, history, culture and development of North Queensland and features specialist exhibits relating to the Great Barrier Reef. Both these facilities were funded through Bicentennial grants.

An Omnimax cinema and commercial centre of shops, offices, food outlets and charter boat services were developed with private sector funding. High speed catamarans provide a service to the Great Barrier Reef.

PERFORMANCE INFORMATION

The extent to which the Aquarium met its objective in the past year is assessed in terms of the following performance indicators:

Opposite: Recreational divers have many opportunities to enjoy the beauty of the Reef, which is protected by the world's largest Marine Park. (Photo: Ben Cropp)

Maintenance of Biological and Interpretive Displays and Services

Stocking of the reef tanks with the many hundreds of species of plants and animals found in a coral reef continued throughout the year to the extent that the reef is now close to a typical coral reef ecosystem.

Continued improvements to the functioning and management of the 'algal turf farm', which is the Aquarium's water quality control system, improved water quality, particularly clarity, even with the greater biological load.

In November and December 1987 corals in the reef tanks spawned on exactly the same nights as corals on the Great Barrier Reef. This is strong evidence that the environment created in the reef tank is close to natural.

During the year, Aquarium staff developed new and innovative filtration systems for the fourteen stand-alone display tanks in the Aquarium's interpretive area. These systems are regarded by some elements of the aquarium industry as the best available.

The Aquarium's interpretive displays were improved during the year by the provision of additional signs, and improved audio-visual in the Aquarium theatre, a new video unit dealing with traditional hunting and fishing and the addition of two algal turf scrubber displays to a renovated touch tank area. A classroom complete with aquariums, microscopes, shell collections and a range of teaching aids was developed for use in the Aquarium's school programs.

In October 1987, the Aquarium launched a Volunteer Scheme with the dual objectives of encouraging community interest and involvement in the operations of the Aquarium and of increasing the level of service and advice available to the public. In return for two to four hours voluntary service each week, mainly as guides and interpretive officers, volunteers are given a six-week course in marine biology, aquarium operation and maintenance and public education techniques. Fifty-three volunteers graduated from the first volunteer training course. A second course conducted in April-May 1988 saw thirty volunteers graduate. Volunteers also participate in a range of functions and social activities sponsored by the Aquarium. With the advantage of their training and experience several volunteers have successfully applied for paid staff vacancies in the Aquarium.

Public Impact

During 1987-88, 311 000 people visited the Aquarium. Of these more than 8 500 were students attending as part of organised groups from 220 schools.

Public reaction to the facility has been outstanding as evidenced by:

- comments in the Aquarium's visitors book
- letters of appreciation
- very favourable media reports and reviews locally, nationally and internationally
- a high level of scientific interest and commendation
- endorsement by the travel and tourism industry as a world-class tourist destination.

Great Barrier Reef Wonderland was judged to be Queensland's best tourist attraction in the 1988 Queensland Tourist and Travel Corporation Awards.

The following indicators suggest that the Aquarium has had a significant positive effect on public awareness and understanding of the Great Barrier Reef and the Marine Park concept:

- more informed public comment and inquiries to the Authority
- favourable feedback from educational institutions about student reactions
- reports from reef tourist operators that clients who have visited the Aquarium have been noticeably more knowledgeable about the Reef and the need to use it wisely.

Achievement of Cost Recovery

Despite visitor numbers falling off dramatically in the last three months of 1987-88 as a result of World Expo in Brisbane (this is consistent with the trend experienced in other parts of Queensland), revenue from admissions to the Aquarium was sufficient to cover all day to day operating costs. However, there were no funds available to be set aside for depreciation of fixed assets. This is not regarded as serious in view of the newness of the facility and the prospect that the longer term effects of World Expo on tourism in Queensland will enable the Aquarium to make up lost ground in future years.



ADMINISTRATION

The Administration Section is part of the corporate management and services program, the objective of which is to achieve cost effective delivery of programs by providing executive management and administrative support and advice to the Minister, the Authority and its staff.

The Section's responsibility covers the following corporate services which are centralised in the interests of efficiency:

- personnel management
- finance management
- general services including property, stores, travel coordination and registry.

The objective of the sub-program requires continual development of an appropriate infrastructure for operations.

Within the limits of Authority direction and regulation, the Section seeks to meet particular operating needs through informality and simplification of procedures and systems.

PERFORMANCE INFORMATION

The **efficiency** of corporate services is assessed in relation to their cost and the extent to which they comply with Authority and external requirements, as measured by:

- management of Average Staffing Level (ASL) — % variation
- management of funds — % variation
- cost of support services in relation to Authority outlays (and time/cost for key tasks or services, eg. payment of accounts, recruitment)
- compliance with standards of quality (audit findings).

The **effectiveness** of corporate services is assessed by the extent to which the administrative infrastructure is adapted to support all programs and central resource management requirements as measured by:

- the degree of 'client' satisfaction with the standard of support services
- implementation of Authority policies and decisions

Opposite: Fishing and boating are popular activities in the Marine Park. They are managed so as to ensure the protection of the Reef's natural qualities. (Photo: Gavin Ryan)

- implementation of central policies eg. Equal Employment Opportunity (EEO), Industrial Democracy, Occupational Health & Safety
- resource outcomes — additional estimates or unused resources.

PERSONNEL MANAGEMENT

Recruitment

From a structure of 101 positions, 21 were advertised for filling within the ASL of 90. The target for completion of vacancy action was 12 weeks.

In 1987-88 the average time between advertising and notification of promotion/appointment was 13 weeks for 21 positions advertised, compared with 18 weeks for 26 positions advertised in 1986-87. Considering the weight of applications and the necessity for officers to combine selection work with their mainstream responsibilities, the outcome is satisfactory.

The improvement is attributable to the availability in Townsville of suitable ex-staff who are contracted to assist certain selection committees. In addition, government streamlining policies and the office structures review have reduced recruitment workload.

Average Staffing Level/Salary Expenditure

The average for 1987-88 was 88.7, a variation of -1.4% from the approved ASL of 90.

Overall expenditure on salaries and related costs was \$2771 175, being \$15 000 over the budget of \$2756 000, a variation of +0.5%. The cost of the second tier and national wage increases exceeded savings from the ASL variation.

Although Aquarium staff costs are in the above figures, they are funded from revenue, not Appropriation because the Aquarium operates on a cost-recovery basis.

Six permanent staff (6.7%) left the Authority compared with eight (10.3%) in 1986-87. This greater stability was predicted but the incidence of extended leave plus the ability of staff to gain promotion elsewhere are expected to result in turnover remaining significant.

Establishment

In accordance with his powers under section 27 of the Public Service Act, the Chairman created the following positions during 1987-88:

Corporate Management (Canberra Office)

Administrative Service Officer, Class 4

Research and Monitoring

Science 1 (fixed term on crown of thorns starfish research program)

Planning

Computer Systems Officer, Grade 2

Aquarium

Technical Assistant Grade 1 — six positions.

Due to changes in work value the following positions were reclassified:

Corporate Management (Canberra Office)

Administrative Service Officer (ASO), Class 6 to ASO, Class 7

Park Management

Project Officer (Planning), CLAD Class 6 to Park Management Officer, CLAD Class 7.

Figure 7
STAFF OF THE AUTHORITY
AT 30 JUNE 1988
 (Full time Equivalent)

	PERMANENT	TEMPORARY	TOTAL
OPERATIVE			
Townsville: Executive and Secretariat	4.0	—	4.0
Research and Monitoring	5.0	1.0	6.0
Planning	7.0	1.9	8.9
Park Management	14.0	—	14.0
Education and Information	11.0	1.0	12.0
Administration	15.0	2.0	17.0
Aquarium	11.0	8.7	19.7
TOTAL TOWNSVILLE	67.0	14.6	81.6
Canberra: Executive	1.5	0.5	2.0
Support	3.0	0.8	3.8
TOTAL CANBERRA	4.5	1.3	5.8
TOTAL JUNE 1988	71.5	15.9	87.4
June 1987	70.3	14.0	84.3
INOPERATIVE			
Leave with pay	4.0	—	4.0
Leave without pay — Study	1.0	—	1.0
— Public Interest	1.0	—	1.0
— Other	3.0	—	3.0
TOTAL	9.0	—	9.0

In accordance with the Office Structures Review, all Clerical Administrative, Clerical Assistant and Keyboard positions were reclassified under subsection 29A(1) of the *Public Service Act 1922* to Administrative Service Officer Class 1-8, with effect 21 January 1988.

Figure 7 shows the distribution of staff by program.

Office Structures Review

Most positions in the Authority were covered by the new structure agreed to by the Government and unions and ratified by the Conciliation and Arbitration Commission under its second tier wage principles.

Authority job design policies were to a large extent reflected in the new structure, particularly the emphasis on multi-skilling, flexibility and mobility. Generic job statements, project teams, new technology, computer/keyboard training and recruitment policies are examples of Authority measures introduced over time.

Further job redesign and skills training are being implemented in consultation with unions.

The Office Structures Review is a very welcome major reform of the staffing framework within which the Authority is required to operate.

Equal Employment Opportunity (EEO)

The Authority was established during the late 1970s, a period when awareness of EEO issues was increasing rapidly. Therefore there were no entrenched practices, systems or corporate attitudes of the kind which contribute to discrimination. The Authority's commitment to EEO has been demonstrated through information dissemination and personnel policies in relation to conditions of employment, recruitment/selection procedures and personal development.

This commitment is reflected in an EEO Plan currently being reviewed in consultation with unions, the Public Service Commission and staff, particularly those in the target groups viz. women, Aborigines and Torres Strait Islanders, people from non-English speaking backgrounds and people with disabilities.

EEO considerations are not confined to the personnel management areas. The Authority's goal, aims and Marine Park programs reflect the principle of equity and in a number of ways are directly related to EEO. For example, traditional hunting and fishing is an important activity in the Great Barrier Reef Region and has received appropriate priority in research, monitoring, zoning and management. At its meeting in June 1988 the Authority considered a report entitled 'Usage of Marine Resources by Aboriginal Communities on the East Coast of Cape York Peninsula' and supported a recommendation that a representative of those communities be appointed to the Great Barrier Reef Consultative Committee.

The Great Barrier Reef Aquarium and its interpretive facilities are intended to encourage people to visit the Reef, but the Aquarium provides a similar experience for those who are unable to do that. People with disabilities are especially appreciative of the Aquarium and are well catered for in its design and visitor programs.

Opposite: The Reef provides us with a fascinating outdoor classroom to learn about the marine environment. Education is the key to responsible use and enjoyment. (Photo: Q.NPWS)



Recruitment to the Aquarium was a significant factor in terms of EEO in 1987-88 because it involved:

- the special placement of a person with disabilities
- employment of persons from non-English speaking backgrounds
- an increase in women occupying higher level positions, in Science classifications
- the employment of women in technical classifications.

The improved accessibility of the Authority's new office should be mentioned in the EEO context. Other achievements in 1987-88 were:

- the engagement of an Aboriginal administrative trainee
- the implementation of the Office Structures Review
- a review of sexual harassment guidelines
- further training and awareness activities.

During the year the Authority also provided work experience for immigrants and was commended by the Queensland Director-General of Education for this action. There were no EEO related grievances during the year. EEO data are summarised in Tables 4 and 5. The situation is similar to service-wide levels but the level of Aboriginal and Islander employment is lower than the percentage of this group in the Townsville community.

The Chairman and Executive Officer are the senior executives responsible for EEO. The Manager, Personnel and General Services (ASO 6) is the EEO Coordinator. The Administration Section's contribution to EEO implementation involves about 0.5 staff year.

Future priorities are reflected in the EEO Plan. Its review will be completed in 1988-89.

Industrial Democracy

The consultative process (public participation) in relation to the care and development of the Marine Park is clearly established by the GBRMP Act and reinforced in the goal and aims of the Authority.

While the ultimate responsibility for management rests with the Authority, its effectiveness is also enhanced by the commitment of staff to the implementation of decisions. This requires processes of involvement and consultation which:

- allow staff to fully apply their skills and experience
- recognise the dignity of all staff
- provide staff with the opportunity to influence the decisions which affect the quality of their working lives.

A revision of the industrial Democracy Plan is underway in consultation with unions.

Personal Development

In line with self-assessed and management initiated personal development requirements, the Authority selects from training opportunities offered by Departments, management consultants and other bodies.

Table 4
REPRESENTATION OF EEO GROUPS WITHIN SALARY LEVELS
30 JUNE 1988

SALARY	TOTAL NO. OF STAFF		WOMEN		NESB	ATSI	PWD	STAFF WITH EEO DATA
	1987	1988	1987	1988				
Below \$19 363 (to top of AS01)	13	8	11 (85%)	7 (87%)	0	2 (25%)	1 (12%)	8
\$19 364 to \$22 313 (to top of AS02)	17	23	13 (76%)	14 (61%)	} 6 (17%)	0	4 (11%)	35
\$22 314 to \$27 728 (to top of AS04)	10	12	6 (60%)	10 (83%)				
\$27 729 to \$35 448 (to top of AS06)	28	32	11 (39%)	9 (28%)	} 2 (5%)	0	1 (2%)	43
\$35 449 to \$44 513 (to top of AS08)	17	17	1 (6%)	4 (23%)				
\$51 184 and above (SES)	2	2	0	0	0	0	0	2
Unpaid Leave	4	4	3 (75%)	2 (50%)	0	0	0	4
TOTAL	91	98	45 (49%)	46 (47%)	8 (9%)	2 (2%)	6 (6%)	92

(1988 numbers in bold type)

Key: NESB Non English Speaking Background
 PWD People with a Disability
 ATSI Aboriginal and Torres Strait Islander
 SES Senior Executive Service

Note: Percentages for women based on total staff; percentages for other groups based on staff for whom EEO data was available (94% of all staff).

Salary bands above AS0 1 have been combined for the other groups.

Source: Continuous Record of Personnel, GBRMPA Staff Report and Personnel Records.

Table 5
REPRESENTATION OF EEO GROUPS WITHIN OCCUPATIONAL GROUPS
30 JUNE 1988

OCCUPATIONAL GROUP	TOTAL NO. OF STAFF	WOMEN	NESB	ATSI	PWD	STAFF WITH EEO DATA
SES	2	0	0	0	0	2
ASO	78	40(51%)	7(9%)	2(3%)	6(8%)	73
Professional & Technical	9	4(44%)	0	0	0	8
Other	9	2(22%)	1	0	0	9
TOTAL	98	46(47%)	8(9%)	2(2%)	6(6%)	92

Key: NESB Non English Speaking Background
 PWD People with a Disability
 ATSI Aboriginal and Torres Strait Islander
 SES Senior Executive Service
 ASO Administrative Service Officer and related areas

Note: Percentages for women based on total staff; percentages for other groups based on staff for whom EEO data was available (94% of all staff).

Source: Continuous Record of Personnel, GBRMPA Staff Report and Personnel Records.

Work related conferences and seminars also contribute to professional development. The Authority also enjoys a number of occasional presentations by visiting and staff experts. During the year 48% of staff were involved in one or more personal development activities.

Dr Wendy Craik completed her participation in the Executive Development Scheme. One officer is on leave to study full-time and four have part-time study leave.

During the year a young person joined under the Australian Traineeship System. The Authority also provided a number of work experience placements for local high school students.

Occupational Health and Safety

The continued health and safety of staff is paramount. Measures to prevent repetitive strain injury (RSI) continued and there were no new cases reported during the year. Eyesight testing for screen-based operators continued and staff who SCUBA dive in connection with their duties undergo annual medicals. Prohibitions on smoking in the office were confirmed during the year and publicity is given to sporting and recreational activities which encourage healthy lifestyles.

FINANCE MANAGEMENT

In the 1987-88 budget, Parliament appropriated \$8 840 500 for the Authority's programs, other than the Great Barrier Reef Aquarium which operates at no cost to the Government. Further funds of \$112 525 carried forward from 1986-87 were also available. Under the cost-sharing arrangements for day-to-day management of the Marine Park, receipts from the Queensland Government were \$1 400 000. Receipts from other sources including the sale of information materials amounted to \$318 613.

Expenditure for the year on programs, other than the Great Barrier Reef Aquarium, was \$10 059 019, 94.3% of funds available. Expenditure of \$2 143 751 on the Great Barrier Reef Aquarium program was from its income-generating activities. Full details are provided in Appendix G.

The expenditure of funds for all programs is shown in Figure 8. This figure reflects the allocation of salaries and certain overheads to each program.

GENERAL SERVICES

The cost of corporate (administrative) services in 1987-88 represents 18% of the Authority's expenditure (except Great Barrier Reef Aquarium) compared with 11.9% in 1986-87. The variation is mainly due to the one-off costs of fit out and relocation of the office.

Property

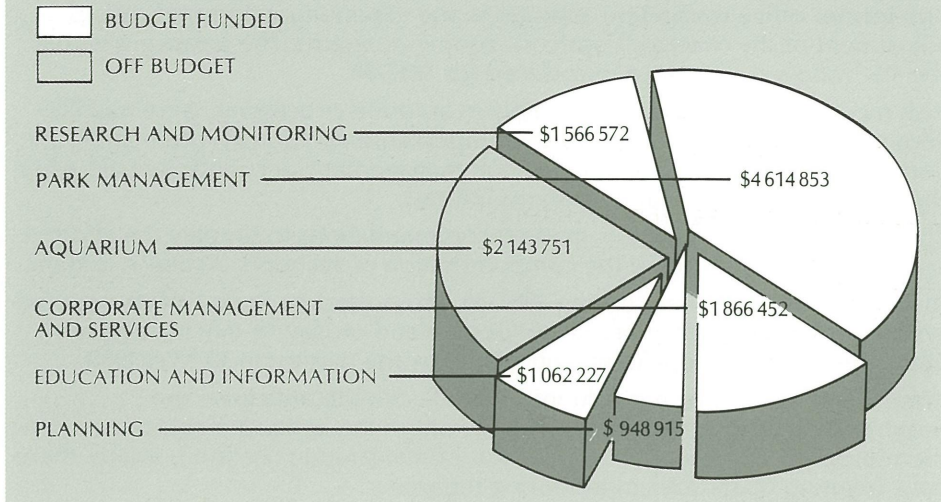
The major project undertaken during 1987-88 was the Townsville office move to the Great Barrier Reef Wonderland complex. This involved the design and coordination of fit-out, packing and relocation from one part of Townsville's central business district to another. Construction and removals were arranged by the Department of Administrative Services.

Interior layout, decor and materials were decided in consultation with an accommodation committee comprising representatives from each section of the office. Occupational health, safety and functional interrelationships are requirements which have been met in a design which takes advantage of the

Figure 8

EXPENDITURE OF FUNDS BY PROGRAM 1987-88

(Total expenditure \$12 202 770)



waterside location. The move was staged over November-December 1987 without major disruption to staff or the public.

As the permanent home of the Authority, the office in Great Barrier Reef Wonderland has considerably enhanced public identifiability and public accessibility — factors which are critical to the achievement of the Authority's goal and aims.

Travel

Recommendations of the Efficiency Scrutiny Unit have been adopted in so far as arrangements are now made through Jetset Tours Pty Ltd and officer-calculated travelling allowance is being introduced. Delegations to approve travel (and associated costs) were made to program managers some years ago. This measure and other efficiencies in the past led to the saving of a Travel Clerk position and assignment of the travel function to the Staff Clerk.

CAPITAL WORKS AND SERVICES

The major outlay was for a new super mini-computer in the Townsville office. Computer operations are under the Planning Program. Further information is in that section of the report.

SUMMARY OF PERFORMANCE INFORMATION

The Authority did not exceed the approved ASL of 90 which includes the Great Barrier Reef Aquarium. ASL in 1986-87 was 78. Having regard to the ASL increase, staff turnover and leave requirements, the marginal (1.4%) under usage of ASL is considered acceptable. It certainly does not indicate any diminution of workload. In fact, the increase in staff was 15% compared with a 59% increase in the area of Marine Park covered by zoning plans.

The time/cost of recruitment represents a marked improvement but further reductions are targeted.

In terms of expenditure, estimates of program requirements in 1987-88 were largely met. The carry over includes unfilled orders/contracts, residual fit-out/former office restoration allocations and expenditure deferred due to adjustment of the Mackay/Capricorn zoning programs. The balance is within the 4% 'rollover' allowance introduced for 1987-88.

Risk management policies, particularly in accounts processing, were quickly adopted by the Authority and further improvements, such as credit-cards, are imminent. Consistent with efficient cash management, accounts are paid when they become due. Cash at bank earns interest.

The internal audit contractors made recommendations to simplify the chart of accounts and to redevelop the computerisation of accounts. Action is in train.

In its report to Parliament during 1987-88, the Australian Audit Office reported on the outstanding agreement with Queensland on day-to-day management. The agreement was concluded and signed by the parties on 10 May 1988.

Every effort is made by the Administration Section to anticipate the requirements of program managers and, within the limits of resources, to meet them properly and quickly. As far as the Administration Section is aware, there have been no major difficulties during the year.

APPENDIX A

AUTHORITY FUNCTIONS

The functions of the Authority, defined in section 7 of the Act as amended in November 1983 and June 1985, are as follows:

- (a) to make recommendations to the Minister in relation to the care and development of the Marine Park including recommendations, from time to time, as to —*
 - (i) the areas that should be declared to be parts of the Marine Park; and*
 - (ii) the regulations that should be made under this Act;*
- (b) to carry out, by itself or in co-operation with other institutions and persons, and to arrange for any other institutions or persons to carry out, research and investigations relevant to the Marine Park;*
- (c) to prepare zoning plans for the Marine Park in accordance with Part V;*
- (ca) to furnish information and advice to the Minister in respect of matters relating to the Marine Park, including —*
 - (i) information and advice in relation to any agreement (including any proposed agreement) between the Commonwealth and Queensland on such matters;*
 - (ii) information and advice on the following matters:*
 - (A) whether the Commonwealth should grant financial assistance to Queensland in respect of a matter relating to the Marine Park;*
 - (B) the amount and allocation of such assistance;*
 - (C) the terms and conditions (if any) on which such assistance should be granted; and*
 - (iii) information and advice on the following matters:*
 - (A) whether it is desirable that Queensland should make payment to the Authority in respect of a matter relating to the Marine Park;*
 - (B) the amount and allocation of such payment;*
 - (C) the terms and conditions (if any) on which such payment should be given;*
- (cb) to receive and disburse moneys appropriated by the Parliament for payment to the Authority for the purpose of payment of the moneys to Queensland by way of financial assistance to Queensland in respect of matters that relate to the Marine Park;*
- (cc) to receive and disburse moneys paid to the Authority by Queensland under an agreement between -*
 - (i) the Commonwealth and Queensland;*

- (ii) Queensland and the Authority; or
 - (iii) the Commonwealth, Queensland and the Authority;
- (cd) to provide, and arrange for the provision of, educational advisory and informational services relating to the Marine Park;
- (d) such functions relating to the Marine Park as are provided for by the regulations; and
- (e) to do anything incidental or conducive to the performance of any of the foregoing functions.
- (1A) For the purposes of this section but without limiting the generality of paragraph (1) (ca), (cb), or (cd), a matter shall be taken to relate to the Marine Park if it relates to:
 - (a) the use or management of an area (which may be a Queensland national park or a Queensland marine park) the use or management of which would or might affect the Marine Park; or
 - (b) the use of a place outside the Marine Park for a purpose relating to the Marine Park.'

Section 7 of the Act also confirms that the Authority is responsible for the management of the Marine Park:

(1B) 'The Authority is responsible for the management of the Marine Park.'

APPENDIX B

CONSULTATIVE COMMITTEE FUNCTIONS

The functions of the Consultative Committee, defined in section 21 of the Act, are as follows:

- (a) to furnish advice to the Minister, either of its own motion or upon request made to it by the Minister, in respect of matters relating to the operation of this Act; and*
- (b) to furnish advice to the Authority in respect of matters relating to the Marine Park, including advice as to the areas that should be parts of the Marine Park, referred to it by the Authority.'*

APPENDIX C

AUTHORITY SENIOR OFFICERS

Townsville Office:

Dr Don Kinsey (Executive Officer)

Richard Kenchington (Assistant Executive Officer, Planning)

Simon Woodley (Assistant Executive Officer, Park Management)

Dr Wendy Craik (Assistant Executive Officer, Research and Monitoring)

Ray Neale (Assistant Executive Officer, Education and Information)

Ian Burston (Assistant Executive Officer, Aquarium)

David Chippendale (Assistant Executive Officer, Administration)

Canberra Office:

Peter Ottesen (Assistant Executive Officer)

APPENDIX D

DOCUMENTS AVAILABLE TO THE PUBLIC

BOOKS

Nomination of the Great Barrier Reef by the Commonwealth of Australia for inclusion in the World Heritage List.

Townsville, GBRMPA, 1981. ISBN 0-642-52281-2.

Research Report 1976-1982. Townsville, GBRMPA, 1983. ISBN 0-642-52345-2.

Polyp. Geraldine Carlin. Townsville, GBRMPA, 1986. ISBN 0-7244-8717-4.

TECHNICAL MEMORANDUM SERIES (ISSN 0817-6094)

Reef Cover Zonation Classification System for Use with Remotely Sensed Great Barrier Reef Data. D Kuchler. Townsville, GBRMPA, 1986. (Technical Memorandum GBRMPA-TM-7) 72p. ISBN 0-642-52513-7.

Geomorphological Nomenclature: Reef Cover and Zonation on the Great Barrier Reef. D Kuchler. Townsville, GBRMPA, 1986. (Technical Memorandum GBRMPA-TM-8) 35p. ISBN 0-642-52521-8.

Reef Cover And Zonation Classification System for Use with Remotely Sensed Great Barrier Reef Data: User Guide and Handbook. D Kuchler. Townsville, GBRMPA, 1987. (Technical Memorandum GBRMPA-TM-9) 32p. ISBN 0-642-52561-7.

Geomorphological Separability, Landsat MSS and Aerial Photographic Data: Heron Island, Great Barrier Reef. D Kuchler. Townsville, GBRMPA, 1987. (Technical Memorandum GBRMPA-TM-10) 12p. ISBN 0-642-52569-2.

An Atlas of the Skeletal Components of the Crown of Thorns Starfish. P D Walbran. Townsville, GBRMPA, 1987. (Technical Memorandum GBRMPA-TM-11) 42p. ISBN 0-642-52641-9.

Aquarium Fishes and their Collection in the Great Barrier Reef Region. Michael Whitehead et al. Townsville, GBRMPA, 1986. (Technical Memorandum GBRMPA-TM-13) 39p.

Sedimentary Framework of Mainland Fringing Reef Development, Cape Tribulation Area. D P Johnson and R M Carter. Townsville, GBRMPA, 1987. (Technical Memorandum GBRMPA-TM-14) 37p. ISBN 0-642-12000-5.

WORKSHOP SERIES (ISSN 0156-5842)

Workshop on Reef Fish Assessment and Monitoring held at Heron Island, 18-28 November, 1978. Townsville, GBRMPA, 1978. (GBRMPA Workshop Series No. 2) 64p. [Reprinted 1985].

Workshop on Coral Trout Assessment Techniques held at Heron Island, 21 April-4 May, 1979. Townsville, GBRMPA, 1979. (GBRMPA Workshop Series No. 3) 85p. [Reprinted 1985].

Workshop on the Offshore Effects of Cyclone Winifred. I M Dutton (Ed) Townsville, GBRMPA, 1986. (GBRMPA Workshop Series No. 7) 111p. ISBN 0-642-52529-3.

Fringing Reef Workshop: Science, Industry and Management. C L Baldwin (Ed) Townsville, GBRMPA, 1987. (GBRMPA Workshop Series No. 9) 280p. ISBN 0-642-52633-8.

SPECIAL RESEARCH PUBLICATION SERIES (ISSN 0810-6983)

Fisheries of the Great Barrier Reef. Tor Hundloe. Townsville, GBRMPA, 1985. (GBRMPA Special Publication Series No. 2) 158p. ISBN 0-642-52417-3.

Guide to the Identification of Seagrasses in the Great Barrier Reef Region. Janet Lanyon. Townsville, GBRMPA, 1986. [Cover title: Seagrasses of the Great Barrier Reef] (GBRMPA Special Publication Series No. 3) 54p. ISBN 0-642-52489-0.

RESEARCH PUBLICATIONS

Green Island Economic Study. Economic Associates Australia. Townsville, GBRMPA, June 1983. 68p. ISBN 0-642-52337-1.

Economic Impacts of Activities on the Great Barrier Reef. S Driml. Townsville, GBRMPA, 1987. 86p. ISBN 0-642-52649-4.

A User-Based Evaluation of the Zoning Plan and Day-to-Day Management in the Capricornia Section of the Great Barrier Reef Marine Park. Environment Science and Services. Townsville, GBRMPA, 1987. 53p. ISBN 0-642-52657-5.

Great Barrier Reef Tourism. A Review of Visitor Use. S M Driml. Townsville, GBRMPA, 1987. 50p. ISBN 0-642-52689-3.

ANNUAL REPORTS (ISSN 0155-8072)

Annual Report 1981-82

Annual Report 1982-83

Annual Report 1984-85

Annual Report 1986-87

POSTERS

Turret Coral. 1984

Clown Fish and Anemone. 1984

Snorkelling at Heron Island Reef. 1985

Reef Walking at North West Reef. 1986

Gorgonia and Feather Star. 1986

Aerial of Hardy Reef. 1986

Cairns Zoning Map. 1983

Portraits of the Reef. [2 prints + notes] Robert Ingpen. Ruskin Press, October 1981

Coral Trout of the Great Barrier Reef. 1985

ZONING PLAN PUBLICATIONS

Cairns Section Zoning Plan and the Cormorant Pass Section Zoning Plan. Townsville, GBRMPA, May 1983. 16p. + maps. ISBN 0-642-52329-0. [another edition, November 1983].

Far Northern Section Zoning Plan. Townsville, GBRMPA, August 1985. 42p. + maps. ISBN 0-642-52433-5.

Central Section Zoning Plan. Townsville, GBRMPA, 1987. 42p. ISBN 0-642-52553-6.

Mackay/Capricorn Section Zoning Plan. Townsville, GBRMPA, December 1987. 52p. ISBN 0-642-12008-0.

BROCHURES

Great Barrier Reef Marine Park: Cairns Section and Cormorant Pass Section: Introduction. Townsville, GBRMPA, November 1983.

Great Barrier Reef Marine Park: Cairns Section and Cormorant Pass Section: Activities Guide. Townsville, GBRMPA, November 1983 —

- 1 Lizard Island Area
- 2 Offshore Cooktown
- 3 Offshore Port Douglas
- 4 Offshore Cairns
- 5 Offshore Innisfail

Great Barrier Reef Marine Park: Far Northern Section: Introduction. Townsville, GBRMPA, February 1986.

Great Barrier Reef Marine Park: Central Section Zoning Information: Introduction. BRA Q128 and BRA Q129. Townsville, GBRMPA, June 1987.

Zoning Information: Great Barrier Reef Marine Park: Central Section — Townsville/Whitsunday: Fishing. Townsville, GBRMPA, [1987].

Great Barrier Reef Marine Park: Mackay/Capricorn Section Zoning Information. Townsville, GBRMPA, 1988.

Zoning Information: Great Barrier Reef Marine Park: Mackay/Capricorn Section: Fishing. Townsville, GBRMPA, [1988].

Life on the Great Barrier Reef: An Introductory Guide. Townsville, GBRMPA/Reef Biosearch, June 1988.

... Ours to use Wisely. Townsville, GBRMPA, July 1988.

SERIAL PUBLICATIONS

Reflections (ISSN 0314-6510)

- Number 18, September 1986
- Number 19, February 1987
- Number 20, September 1987
- Number 21, March 1988

Reef Notes. Joint Series GBRMPA and Q.NPWS (ISSN 0814-9453).

Crown of Thorns. February 1985

Reef Region Fisheries. February 1985

The Coral Polyp. February 1985

The Soft Touch — another View of Coral. February 1985

Coral Cays. July 1985
Fringing Reefs. July 1985
Turtles. June 1988
Seabirds. July 1985
The Great Barrier Reef. July 1986
The Annual Coral Spawning Event on the Great Barrier Reef. July 1986
Whales. September 1986
Wrecks of the Reef. May 1987
World Heritage Site. June 1987
Larval Fishes. June 1987
Captain Cook. June 1987
Trochus Shells. June 1987
Dugongs. June 1988
Sharks. June 1988
Shells. June 1988

REEF Current Awareness Bulletin (ISSN 0813-7897)
1985 Annual. Townsville, GBRMPA, 1987. 48p.
1986 Annual. Townsville, GBRMPA, 1987. 100p.
Reef Report. Video magazine.
Numbers 1-3, 1987
Numbers 1-2, 1988

MAPS

The Great Barrier Reef Marine Park 1: 5 000 000 (A3 size, coloured) August 1988 (BRA Q148)

Companion Map to Great Barrier Reef 1: 2 200 000 (Strip map, coloured) March 1988 (BRA Q144)

Cairns Section, Great Barrier Reef Marine Park Zoning Plans — Zoning Maps (2) to (6) 1: 300 000 (A3 size, coloured) May 1983 (BRA Q51) to (BRA Q55)

MAPS — GREAT BARRIER REEF SERIES

Far Northern Section Zoning Plan Maps 1: 250 000 (A1 size, coloured) August 1985 —

Thursday Island (BRA Q100)
Ashmore Reef (BRA Q101)
Cockburn (BRA Q102)
Weymouth Bay (BRA Q103)
Tijou Reef (BRA Q104)
Princess Charlotte (BRA Q105)
Lizard Island (BRA Q106)

Central Section Zoning Information: Guide for Users 1: 250 000 (A1 size, coloured) [1987] —

Dunk Island (BRA Q109)
Hinchinbrook Island (BRA Q110)
Broadhurst Reef (BRA Q111)
Cleveland Bay (BRA Q112)
Hardy Reef (BRA Q113)
White Tip Reef (BRA Q114)
Whitsunday Group (BRA Q115)
Hydrographers Passage (BRA Q116)

**Mackay/Capricorn Section and Queensland Mackay/Capricorn Marine Park:
Guide for Users 1: 250 000** (A1 size, coloured) July 1988 —

Whitsunday Group (BRA Q115a)
Hydrographers Passage (BRA Q116a)
The Hard Line (BRA Q117)
Northumberland Islands (BRA Q118)
Riptide Cay (BRA Q119)
Shoalwater Bay (BRA Q120)
Howard Patch (BRA Q121)
Keppel Islands (BRA Q122)
Capricornia (BRA Q123)
Lady Elliott Island (BRA Q124)

OTHER PUBLICATIONS

The Richest Reef. Young Australia Reader Series: Thomas Nelson, Australia and the Great Barrier Reef Marine Park Authority, Melbourne, 1983.
[Reprinted 1987]

Plant Life of the Great Barrier Reef and Adjacent Shores. A B Cribb and J W Cribb. University of Queensland Press, St. Lucia, Queensland 1985.

Poetry in Pictures: the Great Barrier Reef. Mark O'Connor and Neville Coleman. Hale & Iremonger, Sydney, 1985.

Corella: Journal of the Australian Bird Study Association. Volume 9, Number 3, 1985 and Volume 10, Number 3, 1986. Special issues on Seabird Islands of the Great Barrier Reef sponsored by GBRMPA.

Oceanus: American-Australian Bicentennial Issue. Volume 29, Number 2, 1986 on the Great Barrier Reef: science & management. Woods Hole Oceanographic Institution, Massachusetts, USA.

The Crown of Thorns Starfish. A special feature of *Australian Science Mag.* Leon Zann and Elaine Eager (Eds.) Joint publication with Darling Downs Institute Press, Toowoomba, 1987.

Junior Survival: the Great Barrier Reef. Published for the Great Barrier Reef Marine Park Authority by the Gould League of Victoria Inc. with the assistance of the Australian Conservation Foundation. Melbourne, 1987.

Australian Tropical Marine Science and Technology: Current Status and Opportunities. A report prepared and published by the Australian Marine Sciences and Technologies Advisory Committee in collaboration with others including GBRMPA. [1988].

Australian Marine Research in Progress 1988. Australian Institute of Marine Science, Commonwealth Scientific & Industrial Research Organization, Great Barrier Reef Marine Park Authority and Victorian Institute of Marine Sciences, 1988.

Discovering Coastal Queensland. Queensland Department of Geographic Information and Great Barrier Reef Marine Park Authority. University of Queensland Press, St. Lucia, Queensland, 1988.

Project Reef-Ed: Great Barrier Reef Educational Activities. Ann Byrnes et al. GBRMPA, Townsville, 1988.

Great Barrier Reef Aquarium. A special feature of *Australian Science Mag.* Compiled by Elaine Eager and Kirk Peterson. Joint publication with Darling Downs Institute Press, Toowoomba, 1988.

AUDIO-VISUAL PRODUCTIONS

Encounters with the Reef: Structure and Evolution of the Great Barrier Reef. 50 slides and audio cassette. Townsville, GBRMPA, 1987.

The Crown of Thorns Story. Video, 25 minutes. Townsville, GBRMPA, 1987.

A Day on the Great Barrier Reef. Video, 8 minutes. Townsville, GBRMPA, 1987.

Encounters with the Reef. Video, 30 minutes. Townsville, GBRMPA, 1987.

OTHER CATEGORIES OF DOCUMENTS

Great Barrier Reef Marine Park Authority

Minutes, memoranda, letters and working papers on matters relating to the operation of the Great Barrier Reef Marine Park Authority and its Office, and to the management of the Great Barrier Reef Marine Park, including:

- Meeting papers of the Authority
- Meeting papers of the Great Barrier Reef Ministerial Council
- Meeting papers of the Great Barrier Reef Marine Park Management Co-ordinating Committee
- Reports submitted to the Authority by consultants or other research workers
- Representations from members of the public and from organisations relating to the zoning plans
- Policy guidelines, programs and operational procedures for day-to-day management of the Marine Park
- Basis of agreement between the Queensland and Commonwealth Governments on day-to-day management of the Marine Park
- Agreement on the control and ownership of day-to-day management buildings
- Applications for research grants
- Applications for permits
- Procedures manuals, circulars, and administrative instructions
- Freedom of Information procedures manual
- Films, video and audio tapes, photographic slides and prints relating to the Great Barrier Reef and the Marine Park.

Great Barrier Reef Consultative Committee

Meeting papers, minutes, memoranda, letters and working papers concerned with the functions and operations of the Great Barrier Reef Consultative Committee.

AVAILABILITY

Documents available for purchase through AGPS bookshops:

Current Annual Report

Nomination of the Great Barrier Reef by the Commonwealth of Australia for inclusion in the World Heritage List. GBRMPA, 1981

Bibliography of the Great Barrier Reef Province. Edgar Frankel, 1978

Great Barrier Reef Marine Park Acts and Regulations

Documents available free of charge for single copies from the Authority's Townsville office:

The Great Barrier Reef Marine Park Act 1975

Regulations

Zoning Plans

Research Report 1976-82

Information brochures, bulletins and leaflets

Selected maps of the Great Barrier Reef Marine Park

REEF database publications

Reef Notes series

Newsletters (serial publications)

Media releases and communiques

Documents available for bulk-purchase from the Authority's Townsville office:

Posters

Various information brochures, books, and audio-visual productions

Research Reports and Workshop Proceedings

Maps of Great Barrier Reef Marine Park

Single copies may be purchased through the Great Barrier Reef Wonderland Aquarium Shop.

FACILITIES FOR ACCESS

The Townsville office holds most of the documents relating to the Authority, its Office and the Great Barrier Reef Consultative Committee. It is possible to arrange access to documents, available under provisions of the Act, through either the Canberra or Townsville office (see addresses below), or at the State FOI Information Access Office. Staff are available to provide assistance in relation to any aspect of FOI requests.

Members of the public may make inquiries on FOI matters and inspect documents to which access has been granted at either office. Business hours, Monday to Friday, are 8.30 am-4.51 pm. Formal requests for access to documents must be directed to the office listed in the following section.

Information about facilities for access by disabled persons can be obtained by contacting the FOI Officer at the Townsville office.

The following facilities for access are maintained at the Townsville office:

- computer printer
- microfiche reader
- film and slide projectors

- video and audio tape recorders
- photocopy machine
- reading room.

FOI PROCEDURES AND INITIAL CONTACT POINTS

Inquiries may be made in writing, by telephone or in person at the official FOI access points listed below. Request forms are available for use in making formal FOI requests. Use of the form is not obligatory but does help to identify and process an FOI request more speedily. Formal FOI requests must be in writing. It is also suggested that inquirers give a telephone number.

Great Barrier Reef Marine Park Authority
 Wonderland PO Box 1379
 1-37 Flinders St TOWNSVILLE
 TOWNSVILLE QLD 4810 QLD 4810
 Telephone (077) 81 8811; Telex GBRMPA 47332

OR

Great Barrier Reef Marine Park Authority
 2nd Floor, Gas Industry House GPO Box 791
 Cnr Moore & Rudd Streets CANBERRA
 CANBERRA CITY ACT 2600 ACT 2601
 Telephone (062) 47 0211; Telex ARRIC 62552

If any difficulty arises in the identification of a document or in providing access in the form requested, an officer of the Authority will contact the applicant with a view to resolving the difficulty.

In consultation with applicants, documents will be made available as follows:

- by mail to the address specified by the applicant
- at the official FOI access point
- at the Information Access Office, located within the regional office of Australian Archives nearest to the applicant's normal place of residence.

The authorised decision-makers under the Act for the Authority and the Consultative Committee, with official addresses for the lodging of requests, are:

The Executive Officer
 Great Barrier Reef Marine Park Authority
 PO Box 1379
 TOWNSVILLE QLD 4810

The Secretary
 Great Barrier Reef Consultative Committee
 PO Box 1379
 TOWNSVILLE QLD 4810

APPENDIX E

STAFF PAPERS PUBLISHED/PRESENTED IN 1987-88

(*collaborators from other institutions)

Baldwin, Claudia. **Hunting by the people of Hopevale in the Great Barrier Reef Marine Park: approaches to management.** Paper presented to the session on Conservation in Aboriginal and Islander Environments, 57th ANZAAS Congress, Townsville, 24-28 August 1987.

Baldwin, C L, G J S Craik and I M Dutton. **Cyclone Winifred — implications for offshore design and management.** *Proceedings of the 8th Australasian Conference on Coastal and Ocean Engineering, Launceston, 30 November-4 December 1987* : 52-57.

Baldwin, Claudia, Peter McGinnity and Grahame Byron. **Waste discharge in the Great Barrier Reef Marine Park.** Paper presented to the Workshop on Nutrients in the Great Barrier Reef, GBRMPA, Townsville, 26-27 November 1987.

Cavanagh, Debbie and Lesley Murdoch. **Sharks in Wonderland.** *Explore* (1) : 2-5, 1988.

Craik, Wendy and Ian Dutton. **Assessing the effects of sediment discharge on the Cape Tribulation fringing coral reefs.** *Coastal Management* 15 : 213-228, 1987.

Hamner, W M*, M S Jones, J H Carleton*, I R Hauri* and D McB Williams*. **Zooplankton, planktivorous fish, and water currents on a windward reef face: Great Barrier Reef, Australia.** *Bulletin of Marine Science* 42 (3) : 459-479, 1988.

Hopley, D* and D W Kinsey. **The effects of a rapid short-term sea level rise on the Great Barrier Reef.** *Greenhouse: planning for climate change* (CSIRO). Edited by G I Pearman. Leiden, Brill, 1988 : 189-201.

Jones, M S. **The Great Barrier Reef Aquarium — a matter of scale.** Paper presented to the Northern Engineering Conference, Townsville, 10-13 June 1988.

Kelleher, Graeme. **Management of the Great Barrier Reef Marine Park.** *Australian Parks and Recreation* 23 (5) : 27-33, 1987.

Kelleher, Graeme and Sally Driml. **Environmental limits to tourism in the Great Barrier Reef Marine Park.** Paper presented to 'Frontiers of Australian Tourism' Conference, Canberra, 29 June-1 July 1988.

Kennington, Richard. ***Acanthaster planci* and management of the Great Barrier Reef.** *Bulletin of Marine Science* 41 (2) : 552-560, 1987.

Kinsey, D W. **Coral reef system response to some natural and anthropogenic stresses.** Paper presented to the International Symposium on the Conservation and Management of Coral Reef and Mangrove Ecosystems, University of the Ryukyus, September-October 1987.

Kinsey, D W and P Ottesen. **Environmental monitoring of marine oil spills in tropical waters of the Great Barrier Reef.** *Spillcon '87* Proceedings of the Australian National Oil Spill Conference, Melbourne, 1987 : 5.00-5.21.

Kinsey, D W. **Stress responses in coral reefs.** Paper presented to School of Marine Sciences Symposium, Siliman University, Philippines, September 1987.

Kinsey, D W and D Hopley*. **Potential effects of a rapidly rising sea level on the Great Barrier Reef.** Paper presented to the Annual Conference of the Australian Coral Reef Society, Brisbane, October 1987.

Kinsey, D W. **Responses of coral reef systems to elevated nutrient levels.** Paper presented to the Workshop on Nutrients in the Great Barrier Reef, GBRMPA, Townsville, 26-27 November 1987.

Kinsey, D W, R Childs and S Woodley. **Piloting in the Great Barrier Reef.** *Proceedings of the IXth International Maritime Pilots Association Congress, Gold Coast, Queensland, 1988.*

Morrissey, Janice. **Nutrient history of the Great Barrier Reef Aquarium.** Paper presented to the Workshop on Nutrients in the Great Barrier Reef, GBRMPA, Townsville, 26-27 November 1987.

Murdoch, Lesley. **Journey to the bottom of the sea.** *Eyespy* (2) : 14-17, 1988.

Zann, Leon, Jon Brodie*, Christine Berryman* and Milika Naqasima*.

Recruitment, ecology, growth and behaviour of juvenile *Acanthaster planci* (L) (Echinodermata: asteroidea). *Bulletin of Marine Science* 41 (2) : 561-575, 1987.

Zann, Leon. **A case history from Tonga.** Paper presented to the Workshop on Nutrients in the Great Barrier Reef, GBRMPA, Townsville, 26-27 November 1987.

APPENDIX F

RESEARCH IN PROGRESS 1987-88

Detailed descriptions of projects are available on the database **Australian Marine Research in Progress** (AMRIP) on CSIRONET. A special printed edition for the Great Barrier Reef Region is also published by the Authority.

* Project completed during 1987-88
+ Augmentative Research Grant

ANALYSIS OF USE

The objectives of research in this field are to define resource utilisation of the Great Barrier Reef Region and to enable management to record the intensity, variability and periodicity of use of the Marine Park. The research includes collection of socio-economic data as well as evaluation of methods of investigation of usage.

186, 254 *Traditional uses of marine resources by Aboriginal Communities on the east coast of Cape York Peninsula: Stages 1 and 2

PROJECT LEADER: Mr A Smith (Sir George Fisher Centre for Tropical Marine Studies, Departments of Marine Biology and Behavioural Sciences, James Cook University)

190 *Application of Recreational Opportunity Spectrum to a Marine Park+

PROJECT LEADER: Ms K Means (Australian Environmental Studies, Griffith University)
SUPERVISORS: Dr T Hundloe, Dr R Rickson

255 Shell collecting in the Great Barrier Reef Region

PROJECT LEADER: Ms B Barnett (consultant)

257 Traditional Fisheries Workshop

PROJECT LEADER: Dr L Zann (GBRMPA)

260 The economic characteristics and significance of the Great Barrier Reef Region shell trade+

PROJECT LEADER: Miss K Herbert (Australian Environmental Studies, Griffith University)
SUPERVISORS: Dr T Hundloe, Mr J Ware

283 A preliminary review of the effects of trawling in the Great Barrier Reef Region

PROJECT LEADERS: Dr I Poiner, Dr K Sainsbury (CSIRO, Cleveland Marine Laboratory)

284 *Attitudes of tourists to North Queensland with emphasis on the Great Barrier Reef

PROJECT LEADERS: Dr T Hundloe, Mr F Vanclay (Australian Environmental Studies, Griffith University)

304 Norman Reef amenity study

PROJECT LEADER: Dr P Pearce (Behavioural Sciences, James Cook University)

334 Dive tourism study

PROJECT LEADER: Centre for Studies in Travel and Tourism (James Cook University)

335 Social carrying capacity in recreational settings: a literature review

PROJECT LEADER: Ms M Watson (consultant)

BIOLOGY

Biological research is undertaken to increase our understanding of the ecosystems of the Great Barrier Reef Region and involves studies on many aspects of the reef environment. Work undertaken involves bird, dugong and turtle research as well as the obvious fields of fish and coral investigations. The Authority has a mandate to protect the health of the Reef and biological research is fundamental to this task. Much of the work is new and research has had to be carried out to determine methods of survey suitable for the task at hand and to assess the suitability of existing techniques.

124 The effects of fuel oil, oil emulsifier, and lower salinity upon the common Indo-Pacific reef coral *Acropora formosa*

PROJECT LEADERS: Mr P Harrison, Dr C G Alexander, Dr J D Collins (Sir George Fisher Centre for Tropical Marine Studies, and Biological Sciences, James Cook University)

163, 225 *Methods for the re-establishment of hard corals in denuded reef systems

PROJECT LEADER: Dr V Harriott (Sir George Fisher Centre for Tropical Marine Studies, and Marine Biology, James Cook University)

165 Coral reef metabolism and calcification

PROJECT LEADERS: Assoc Prof M Pichon, Dr J Morrissey (Marine Biology, James Cook University)

177 Analysis of fish tagging data

PROJECT LEADER: Mr R Giddins (consultant)

200 Demersal reef fish study

PROJECT LEADERS: Mr R Pearson, Dr G Goeden (Fisheries Research, Qld Department of Primary Industries)

201 Giant clam study

PROJECT LEADERS: Mr R Pearson (Fisheries Research, Qld Department of Primary Industries), Dr J Munro (James Cook University and International Centre for Living Aquatic Resource Management)

202 Red spot king prawn by-catch study

PROJECT LEADERS: Mr R Pearson, Mr M Dredge (Fisheries Research, Qld Department of Primary Industries)

213 The role of crustose coralline algae in coral reef ecosystems+

PROJECT LEADER: Mr J Chisholm (Botany, James Cook University)
SUPERVISORS: Dr I Price (Botany, James Cook University), Dr B Chalker (Australian Institute of Marine Science)

214 Analysis of mollusc benthic community structure in Capricornia Group coral reef lagoon sediments+

PROJECT LEADER: Mr B Long (Zoology, University of Queensland)
SUPERVISOR: Dr T Hailstone

215 Sexual and asexual reproduction: an electrophoretic examination of the brood planulae of scleractinian corals+

PROJECT LEADER: Ms J Resing (Zoology, Duke University, USA; Australian Institute of Marine Science)
SUPERVISORS: Dr S Wainwright (Duke University), Dr J Stoddart (Australian Institute of Marine Science)

216 *Movements and behaviour of coral trout at Heron Island+

PROJECT LEADER: Ms M Samoily (Zoology, University of Queensland)
SUPERVISORS: Dr T Hailstone, Dr K Warburton

237 Biological basis for managing populations of dugongs and other marine mammals in the Great Barrier Reef Marine Park

PROJECT LEADER: Dr H Marsh (Zoology, James Cook University)

238 Monitoring and mapping of coral spawn slicks using remote sensing techniques (Pilot Study)

PROJECT LEADERS: Dr J T Baker, Mr J Oliver, Ms B Willis (Biological Sciences, James Cook University), Dr D Kuchler (Mapping & Monitoring Technology Pty Ltd)

248 *Shearwater census and distribution for North West Island+

PROJECT LEADER: Miss M Donohoe (Geography, University of Queensland)
SUPERVISOR: Dr G Hill

250 The effect of potential pollutants on the growth of tropical hydroids+

PROJECT LEADERS: Mr R Ireland (Marine Biology, James Cook University)
SUPERVISORS: Dr C G Alexander, Dr G Denton

290 Seagrass habitat survey — southern sections of the Marine Park

PROJECT LEADER: Dr R Coles (Qld Department of Primary Industries)

291 Coral Spawning Experiment (CORSPLEX)

PROJECT LEADER: Ms B Willis et al. (Biological Sciences, James Cook University)

292 Reef survey of coral trout — report production

PROJECT LEADER: Dr A M Ayling (Sea Research)

294 Population dynamics of green turtles

PROJECT LEADER: Mr C Limpus (Q.NPWS)

- 295 Trawling impact — red spot king prawn**
PROJECT LEADER: Mr M Dredge (Qld Department of Primary Industries)
- 296 *Baseline survey — Hayman I and Hamilton I fringing reefs**
PROJECT LEADERS: Mr R van Woesik, Mr A Steven (James Cook University)
- 298 Coral Trout Workshop**
PROJECT LEADERS: GBRMPA, Q.NPWS
- 299 Norman Reef environmental study**
PROJECT LEADER: Dr A M Ayling (Sea Research)
- 305 Spawning, recruitment and juvenile ecology of coral reef fishes at Lizard Island, northern Great Barrier Reef+**
PROJECT LEADER: Mr M Meekan (Australian Environmental Studies, Griffith University)
SUPERVISOR: Dr P J Doherty
- 306 Studies on the spatial and temporal abundance of fish larvae in the waters around Lizard Island, northern Great Barrier Reef+**
PROJECT LEADER: Ms M Milicich (Australian Environmental Studies, Griffith University)
SUPERVISOR: Dr P J Doherty
- 307 The influence of algal cover on recruitment in reef fishes+**
PROJECT LEADER: Mr K Clements (Marine Biology, James Cook University)
SUPERVISOR: Prof J H Choat
- 308 The population biology and ecology of fungiid corals in Alma Bay, Magnetic Island+**
PROJECT LEADER: Mr R Paterson (Marine Biology, James Cook University)
SUPERVISOR: Dr J D Collins
- 309 Aspects of the growth and development of giant clams+**
PROJECT LEADER: Mr C Shelley (Zoology, James Cook University)
SUPERVISORS: Assoc Prof J Lucas, Dr J Munro
- 310 A survey of the fish fauna of high island fringing reefs in the southern sections of the Marine Park+**
PROJECT LEADER: Mr A Steven (Marine Biology, James Cook University)
SUPERVISOR: Prof J H Choat
- 311 Identification and life history: features of juvenile baitfish in Cape Bowling Green fishing grounds+**
PROJECT LEADER: Mr S Thorrold (Marine Biology, James Cook University)
SUPERVISOR: Prof J H Choat
- 313 Seasonal changes in the macro-algal vegetation and the associated mobile invertebrates on a fringing coral reef+**
PROJECT LEADER: Ms V Vakamoce (Marine Biology, James Cook University)
SUPERVISOR: Dr I Price, Dr C G Alexander
- 315 *A comparison of live and dead coral regions with regard to recolonisation of damaged reef areas+**
PROJECT LEADER: Mr N Khandekar (Organic Chemistry, University of Melbourne)
SUPERVISOR: Dr R B Johns
- 316 *Diseases in reef bivalves: particularly *Perkinsus* sp (Protozoa) in giant clams (*Tridacnidae*)+**
PROJECT LEADER: Ms C L Goggin (Parasitology, University of Queensland)
SUPERVISORS: Dr R J Lester, Mr P Hunnam
- 318 *Soil seed stores in islands of the Great Keppel Group+**
PROJECT LEADERS: Mr S Underhill, Ms L Armstrong (Botany, University of Queensland)
SUPERVISORS: Dr D Lamb, Dr J Davie
- 319 The role of post-recruitment processes in affecting adult population size of the Humbug Damselfish at One Tree Reef+**
PROJECT LEADER: Mr G Forrester (Zoology, University of Sydney)
SUPERVISOR: Assoc Prof P Sale
- 320 The demography of *Pomacentrus molluccensis* on the southern Great Barrier Reef+**
PROJECT LEADER: Mr B Mapstone (Zoology, University of Sydney)
SUPERVISOR: Assoc Prof P Sale
- 336 *Marine stinger research**
PROJECT LEADER: Ms B Kinsey (Sir George Fisher Centre for Tropical Marine Studies, James Cook University)
- 337 Benthic survey of Low Isles (Pilot Study)**
PROJECT LEADER: Mr D Fisk (Reef Research and Information Services)
- 338 Coral trout spawning information**
PROJECT LEADER: Dr R E Johannes (CSIRO)
- 339 Seagrass habitat survey, Cairns to Bowen — analysis of samples**
PROJECT LEADER: Dr R Coles (Qld Department of Primary Industries)
- 340 Oral history — Japanese divers on the Great Barrier Reef**
PROJECT LEADER: Ms R Ganter (Australian Environmental Studies, Griffith University)
- 350 Investigation of sampling biases in manta tow surveys**
PROJECT LEADER: Ms L Fernandez (Zoology, James Cook University)
SUPERVISOR: Dr H Marsh
- 353 Structuring mechanisms in communities of coral reef fish+**
PROJECT LEADER: Mr M J Caley (Biological Sciences, University of Sydney)
SUPERVISOR: Dr R Shine

354 Colonisation and succession of reef-flat algae at Heron Island+

PROJECT LEADER: Ms C Catterall (Botany, University of Queensland)
SUPERVISOR: Dr R Rogers

357 The occurrence and biology of sharks on near shore reefs near Townsville+

PROJECT LEADER: Mr C Simpfendorfer (Zoology, James Cook University)
SUPERVISOR: Assoc Prof N Milward

358 Sea snakes of Northern Australia+

PROJECT LEADER: Mr T Ward (Zoology, James Cook University)
SUPERVISOR: Dr H Marsh

361 An evaluation of the parasites of the Black Marlin and Pacific Sailfish as population markers and indicators of migratory movements+

PROJECT LEADER: Mr P Speare (Marine Biology, James Cook University)
SUPERVISOR: Prof J H Choat

362 Calcification and productivity profiles across a reef flat subsequent to infestation by the crown of thorns starfish+

PROJECT LEADER: Mr I Baxter (Marine Biology, James Cook University)
SUPERVISOR: Dr J D Collins

363 Population ecology of the Muricid gastropod *Drupella* sp+

PROJECT LEADER: Mr W Oxley (Marine Biology, James Cook University)
SUPERVISOR: Prof J H Choat

369 Monitoring health of Cairns Reefs —manta tows

PROJECT LEADER: Dr A M Ayling (Sea Research)

370 Preparation and preliminary analysis of manta tow data

PROJECT LEADER: Dr J Oliver (consultant)

371 Design of Heron Island monitoring program

PROJECT LEADER: Prof J H Choat (Biological Sciences, James Cook University)

372 Inspection of spoil dump and its effects — Heron Island boat harbour

PROJECT LEADERS: Dr M Gourlay, Dr J S Jell (University of Queensland)

373 History of dredging in Cleveland Bay and its effects on sediment movement and growth of corals, mangroves and seagrass

PROJECT LEADER: Dr A Pringle (University of Lancaster)

374 Coordination of water quality studies

PROJECT LEADER: Dr P Bell (Chemical Engineering, University of Queensland)

ENVIRONMENTAL DESIGN

These studies are used to specify development strategies for the utilisation of the resources of the Marine Park that are compatible with the conservation of the Reef and its resources. Work to date has concentrated on offshore structures and developments.

INFORMATION SYSTEMS

These systems are used for the collection, storage and, most importantly, the dissemination of information. Data includes reef related physical and biological information, geographical data, information on research in progress as well as permits and representations data.

117 Australian Marine Research in Progress (AMRIP)

PROJECT LEADERS: Australian Institute of Marine Science, Great Barrier Reef Marine Park Authority, Victorian Institute of Marine Sciences, Information Resources Unit (CSIRO)

268 *Marine Research and Management Information System (MARAMIS)

PROJECT LEADER: Dr W Craik (GBRMPA)

301 *6th International Coral Reef Symposium (Funding)

PROJECT LEADER: Dr P J Davies (Chairman, Organising Committee)

345 Bibliography of marine parks

PROJECT LEADER: Ms J Dartnall (consultant)

347 Conversion of Great Barrier Reef Resource Inventory to data base format

PROJECT LEADER: Australian Littoral Society

348 Great Barrier Reef Resource Inventory, Cairns Section

PROJECT LEADER: Australian Littoral Society

349 Revision of the James Cook University Gazetteer

PROJECT LEADER: Australian Littoral Society

MANAGEMENT STRATEGIES

The program aims to evaluate the effectiveness of current and alternate strategies for the management of the Marine Park consistent with conservation of the resources of the area. Studies include risk analysis of activities that occur in the park such as shipping as well as reviews of the zoning plans to determine whether objectives are being met.

263 *The recreational usage of private boats in the Whitsunday Islands+

PROJECT LEADER: Ms W Goodburn (Geography, University of Sydney)
SUPERVISOR: Mr B O'Rourke

264 The Great Barrier Reef Marine Park: an appropriate management tool for the Australian Fishing Zone?+

PROJECT LEADER: Mr L Kriwoken (Centre for Environmental Studies, University of Tasmania)
SUPERVISORS: Dr P Hay, Dr B Davis

265 Planning study of the Capricornia Section, Great Barrier Reef Marine Park+

PROJECT LEADER: Ms D J Rosier (Regional and Town Planning, University of Queensland)
SUPERVISORS: Prof J Kozlowski, Dr G Hill

288 Fringing reef studies including fish study

PROJECT LEADERS: Mr S Domm (Q.NPWS), Mr R van Woesik, Mr A Steven (James Cook University)

289 Review of research

PROJECT LEADER: Ms M Watson (consultant)

133, 293 Monitoring Replenishment Areas: Stages 1 and 2

PROJECT LEADER: Mr K Beinssen (Q.NPWS)

312 Toward the development of a spatio-temporal atlas of the high island fringing reefs for the southern sections of the Marine Park+

PROJECT LEADER: Mr R van Woesik (James Cook University)

375 Education and environmental management: a study of the Great Barrier Reef+

PROJECT LEADER: Ms K A Jenkins (Education, University of New England)
SUPERVISOR: Assoc Prof J Bowen

376 Advice on a concessions system for the Marine Park

PROJECT LEADER: Mr G Claridge (consultant)

MARINE CHEMISTRY

Chemical analysis of the Great Barrier Reef environment is necessary to determine the background concentrations and distribution of possible contaminants of the environment. This allows the assessment of impacts of pollutants such as organochlorine pesticides.

160 Analysis of soils from coral islands in the Capricornia Section of the Great Barrier Reef Marine Park+

PROJECT LEADERS: Chemistry students (Capricornia Institute of Advanced Education)
SUPERVISORS: Dr G Pegg, Dr J Hughes

300 *Waste water disposal guidelines

PROJECT LEADERS: Dr P Bell, Dr P Greenfield (University of Queensland), Dr D Connell (Griffith University)

341 *Heavy metals in *Saccostrea* spp at Hook Island

PROJECT LEADER: Marine Bio Logic

342 Water quality and the effect of seasonal change — Trinity Inlet to Green Island

PROJECT LEADERS: Dr T Thomas, Dr D Yellowlees (Chemistry, James Cook University)

343 Dissolved and particulate nutrient concentrations in waters of the Whitsunday Island group

PROJECT LEADER: Mr M Furnas (Australian Institute of Marine Science)

355 Anthropogenic inputs into sediments at Green Island+

PROJECT LEADER: Ms R Allan (Organic Chemistry, University of Melbourne)
SUPERVISOR: Dr R B Johns

359 Phosphorus metabolism in corals+

PROJECT LEADER: Ms A Jackson (Chemistry, James Cook University)
SUPERVISOR: Dr D Yellowlees

MARINE GEOSCIENCES

There is a need for understanding of the processes which formed the Great Barrier Reef so that contemporary development and degradation can be placed in perspective. The research includes analysis of sediments, growth rates of reefs and study of the processes of degradation of senile reefs.

151 Biologic reef destruction — products, rates and causes

PROJECT LEADERS: Dr P A Hutchings (Australian Museum), Dr P J Davies (Bureau of Mineral Resources), Mr W Kiene (Geology, Australian National University)

152 Coastal processes forming and maintaining the coral cays of the Great Barrier Reef and their implications for Marine Park Management

PROJECT LEADER: Dr M Gourlay (Civil Engineering, University of Queensland)

153 Stratigraphy of lagoon sediments and reef margins — Lady Musgrave Island

PROJECT LEADER: Assoc Prof C V G Phipps (Geology and Geophysics, University of Sydney)

193 *Sedimentary setting of fringing reef at Donovan Point

PROJECT LEADERS: Dr D Johnson, Prof R M Carter (Geology, James Cook University)

196 Past, present and future changes in the Cairns urban coastline+

PROJECT LEADER: Ms J Spriggs (Geography, James Cook University)
SUPERVISOR: Assoc Prof D Hopley

232 Coral recruitment on fringing reefs near Cape Tribulation

PROJECT LEADER: Mr D Fisk (Reef Research and Information Services)

233 Monitoring of Cape Tribulation fringing reefs

PROJECT LEADER: Dr A M Ayling (Sea Research)

234 Effects of disturbed rainforest catchments on adjacent fringing reefs — Cape Tribulation++

PROJECT LEADERS: Assoc Prof D Hopley, Mr D Hoyal and Mr B Partain (James Cook University)

235 Townsville's urban coastline — past, present and future changes+

PROJECT LEADER: Ms J Spriggs (Geography, James Cook University)
SUPERVISOR: Assoc Prof D Hopley

314 The burrowing activities of *Callianassa* sp: geological and ecological implications+

PROJECT LEADER: Mr P Walbran (Geology, James Cook University)
SUPERVISOR: Assoc Prof R A Henderson

344 The importance of siltation and sedimentation resuspension on reefal development in the Whitsunday Islands area+

PROJECT LEADERS: Dr D Johnson, Mr S Blake (Geology, James Cook University)

351 The effects of sediment and turbidity on reef corals and implications for monitoring+

PROJECT LEADER: Ms M Stafford Smith (University of York)
SUPERVISOR: Dr R F G Ormond (Tropical Marine Research Unit, University of York)

352 Sediment yield from a rainforest catchment affecting the central Great Barrier Reef+

PROJECT LEADER: Mr D Neil (Pacific Studies, Australian National University)
SUPERVISOR: Prof J M A Chappell

360 Sedimentation in the South Johnstone River drainage basin+

PROJECT LEADER: Mr C Hill (Applied Geology, Qld Institute of Technology)
SUPERVISOR: Dr A V Arakel

OCEANOGRAPHY

Studies of wave patterns, tides and currents in the Region allow better understanding of the processes by which larvae and pollutants are dispersed throughout the Region. Modelling work will allow better prediction of dispersal patterns and the inter-connectivity of reefs.

119 *Circulation and sediment movement on and around North Queensland bayhead fringing reefs

PROJECT LEADERS: Assoc Prof D Hopley (Sir George Fisher Centre for Tropical Marine Studies, James Cook University), Mr K Parnell (University of Auckland)

150 *Flow modelling in the central Great Barrier Reef Region — a collaborative research project

PROJECT LEADERS: Dr J C Andrews (Australian Institute of Marine Science), Dr L Bode (Civil and Systems Engineering, James Cook University)

191b Installation of tide gauges: collaborative research

PROJECT LEADERS: Dr J C Andrews (Australian Institute of Marine Science), Dr L Bode (Civil and Systems Engineering, James Cook University), Mr T Savory (Bureau of Meteorology)

229 Establishment of remote weather stations on the Great Barrier Reef

PROJECT LEADER: Dr J C Andrews (Australian Institute of Marine Science)

230 Influence of coral reefs on wave attenuation and circulation

PROJECT LEADER: Dr I Young (RMC Duntroon)

231 Vertical and cross-shelf velocity structure of the tides of the central Great Barrier Reef+

PROJECT LEADER: Mr C Steinberg (Earth Sciences, Flinders University)
SUPERVISORS: Prof G W Lennon (Flinders University), Dr J C Andrews (Australian Institute of Marine Science)

302 Physical oceanography review

PROJECT LEADERS: Prof G Pickard, Dr J C Andrews (Australian Institute of Marine Science)

303 *Coral spawning experiment (CORSPLEX)

PROJECT LEADER: Dr E Wolanski (Australian Institute of Marine Science)

317 A LANDSAT approach to modelling sediment movement to determine the extent of influence on the Whitsunday fringing reefs+

PROJECT LEADER: Mr A P Hoffenberg (University of Queensland)
SUPERVISOR: Prof K Lyons

346 Review of physical oceanographic models and their application to management

PROJECT LEADER: Dr R Steedman (consultant)

SURVEY AND BATHYMETRY

The objective of these projects is to provide detailed charts and maps of the Great Barrier Reef Region and to establish the ability of remote sensing to assist in classifying the area. Work has taken place using both aerial and satellite survey methods.

198 Spectrographic analysis of reef features

PROJECT LEADERS: Dr D Jupp (CSIRO, Division of Water and Land Resources), Dr D Kuchler (Mapping & Monitoring Technology Pty Ltd)

285 The Northeast Australian Satellite Imagery System (NASIS)

PROJECT LEADERS: James Cook University, Australian Institute of Marine Science, Great Barrier Reef Marine Park Authority, Commonwealth Scientific & Industrial Research Organization, Qld Department of Mapping and Surveying

286 Australian Survey Office joint reef survey

PROJECT LEADER: Australian Survey Office

CROWN OF THORNS STARFISH

This is the program of research funded following recommendations by the Crown of Thorns Starfish Advisory Committee (COTSAC) in its report of January 1985.

210 Role of *Acanthaster planci* in reef degradational processes: historical perspective and current influence

PROJECT LEADER: Assoc Prof R A Henderson (Geology, James Cook University)

270 Survey of crown of thorns starfish predators on or in the vicinity of reefs of the Great Barrier Reef

PROJECT LEADERS: Assoc Prof R Edean, Dr A Cameron and Dr H McCallum (Zoology, University of Queensland)

271 The relationships between crown of thorns starfish outbreaks and water mass characteristics in the Great Barrier Reef

PROJECT LEADERS: Mr D van R Claasen, Dr L Zann (GBRMPA), Ms E Coumbis (consultant)

272 Potential human causes of *Acanthaster planci* aggregations in the South Pacific

PROJECT LEADERS: Dr L Zann (GBRMPA), Ms G Brodie (University of the South Pacific, Fiji), Ms K Weaver and Mr G Andrews (consultants)

273 Socio-economic consequences of major populations of crown of thorns starfish

PROJECT LEADER: Dr T Hundloe (Australian Environmental Studies, Griffith University)

274 Biological and economic risk analysis study to contribute to assessment of the need for control of crown of thorns starfish

PROJECT LEADERS: Dr T Hundloe, Dr J Parslow (Australian Environmental Studies, Griffith University)

275 *Oral history of human use and experience of crown of thorns starfish on the Great Barrier Reef

PROJECT LEADERS: Dr A Chase, Ms R Ganter (Australian Environmental Studies, Griffith University)

276 Studies of diseases of the crown of thorns starfish

PROJECT LEADER: Prof R S F Campbell, Dr J Glazebrook (Tropical Veterinary Science, James Cook University)

277 Identification of bacterial populations associated with crown of thorns starfish and assessment of their role in the ecology of this starfish

PROJECT LEADER: Dr D C Sutton (Sir George Fisher Centre for Tropical Marine Studies, James Cook University)

278, 333 Trial controls of crown of thorns starfish on the Great Barrier Reef

PROJECT LEADERS: Dr L Zann, Ms K Weaver (GBRMPA)

280 Population dynamics of crown of thorns starfish on Suva Barrier Reef

PROJECT LEADERS: Mr J Brodie (University of the South Pacific, Fiji), Dr L Zann (GBRMPA)

281 Monitoring juvenile crown of thorns starfish on the Great Barrier Reef (pilot study)

PROJECT LEADER: Mr R Bell (consultant)

321 Chemical pathways

PROJECT LEADER: Dr R B Johns (Organic Chemistry, University of Melbourne)

322 Mainland runoff hypothesis (land use)

PROJECT LEADERS: Assoc Prof D Hopley, Mr P Valentine, Ms C Rasmussen (Sir George Fisher Centre for Tropical Marine Studies, James Cook University)

323 *Artificial barriers for crown of thorns starfish management

PROJECT LEADER: Marine Bio Logic

324 Crown of thorns starfish sighting survey

PROJECT LEADER: Dr L Zann (GBRMPA)

325 Crown of thorns starfish video

PROJECT LEADER: Dr L Zann (GBRMPA)

326 Crown of thorns starfish booklet

PROJECT LEADER: Dr L Zann (GBRMPA)

327 Use of near infra red photography for monitoring effects of *A. planci* outbreaks

PROJECT LEADER: Assoc Prof D Hopley (Sir George Fisher Centre for Tropical Marine Studies, James Cook University)

328 Fish predator study — gut contents

PROJECT LEADERS: Prof J H Choat, Mr R Birdsey (Marine Biology, James Cook University), Mr P Matthew (consultant)

329 Consequences of commercial fishing (analysis of catch)

PROJECT LEADERS: Prof J H Choat, Mr A Steven (Marine Biology, James Cook University)

330 Abundance and distribution patterns of *Acanthaster planci* on the Great Barrier Reef

PROJECT LEADER: Dr A M Ayling (Sea Research)

331 Information base and pilot study for an interdisciplinary study of Green Island

PROJECT LEADERS: Prof J H Choat, Mr I Baxter (Marine Biology, James Cook University)

332 *Coral Spawning Experiment (CORSPEX): relevance to crown of thorns starfish

PROJECT LEADER: Dr E Wolanski (Australian Institute of Marine Science)

346 Application and assessment of methods for ageing crown of thorns starfish+

PROJECT LEADER: Mr R Stump (Zoology, James Cook University)
SUPERVISOR: Assoc Prof J Lucas

364 An interdisciplinary research and monitoring program to determine the consequences and possible causes of *Acanthaster planci* infestations at Green Island

PROJECT LEADERS: Prof J H Choat, Assoc Prof D Hopley (Marine Biology and Sir George Fisher Centre for Tropical Marine Studies, James Cook University)

365 An assessment of the impact of crown of thorns starfish outbreaks on commercial fisheries

PROJECT LEADER: Mr P Matthew (consultant)

366 Search for evidence within subsurface sediments of the occurrence of previous aggregations of crown of thorns starfish on Heron Island Reef, southern Great Barrier Reef

PROJECT LEADERS: Dr P Flood (University of New England), Dr E Frankel (University of Technology, Sydney)

367 Distribution of skeletal elements of crown of thorns starfish in surface sediments, central Great Barrier Reef

PROJECT LEADERS: Assoc Prof R A Henderson (Geology, James Cook University), Dr P Moran (Australian Institute of Marine Science)

368 Search for evidence within surface sediments of the occurrence of previous aggregations of crown of thorns starfish on Capricorn and Pompey Reefs

PROJECT LEADERS: Dr P Flood (University of New England), Dr E Frankel (University of Technology, Sydney)

APPENDIX G

FINANCIAL STATEMENTS

GREAT BARRIER REEF MARINE PARK AUTHORITY Financial Statements for the Year Ended 30 June 1988

In our opinion, the accompanying Statement of Activity (General Operations), Profit and Loss Statement (Great Barrier Reef Aquarium), Statement of Assets and Liabilities, Statement of Capital Accumulation and Statement of Sources and Applications of Funds, have been prepared in accordance with the 'Guidelines for the Form and Standard of Financial Statements of Commonwealth Undertakings' approved by the Minister for Finance, as amended from time to time, and:

- (a) show fairly the operations of the Authority for the financial year ended 30 June 1988 and the financial position as at 30 June 1988; and
- (b) at the date of this certificate there are reasonable grounds to believe that the Authority will be able to pay its debts as and when they fall due.

DONALD W KINSEY
Executive Officer

GRAEME KELLEHER
Chairman

18 November 1988

STATEMENT OF ACTIVITY for the year ended 30 June 1988
GENERAL OPERATIONS

	Note	1987-88 \$	1986-87 \$
REVENUE			
Parliamentary appropriations			
— Operational		6 863 000	5 300 000
— Capital		100 000	120 000
— Commonwealth contribution to day-to-day management	2(a)(b)	1 877 500	1 250 000
		8 840 500	6 670 000
Payments from Queensland for day-to-day management	2(a)(c)	1 400 000	975 000
Interest		165 592	73 997
Miscellaneous revenue		92 380	63 004
Recovered assets	3	—	8 017
Net gain on disposal of non-current assets		6 656	2 897
		10 505 128	7 792 915
Less			
Transfer to Great Barrier Reef Aquarium		—	653 787
Transfer to Capital Accumulation	4	560 994	592 534
Total operating revenue		9 944 134	6 546 594
EXPENSES			
Expenses of the Authority	5	137 155	128 650
Expenses of the Great Barrier Reef Consultative Committee	6	23 385	24 793
Executive and Secretariat		424 812	377 586
Administration		1 021 292	921 591
Research and Monitoring		1 490 825	1 512 131
Planning		890 204	594 865
Education/Information		968 424	841 728
Park Management		1 311 471	369 573
Payments to Queensland for day-to-day management	2	3 298 000	2 133 084
Total operating expenses		9 565 568	6 904 001
Excess of operating revenues over operating expenses		378 566	(357 407)
Less Provisions and other unfunded charges			
Depreciation of non-current assets		219 676	282 739
Long service leave		127 896	37 905
Annual leave		9 121	54 796
Superannuation	1(h)	14 634	—
Leave fares		3 281	10 557
Surplus before Extraordinary Item		3 958	(743 404)
Extraordinary Item			
Write off day-to-day management assets	7	790 762	—
Deficiency transferred to Capital Accumulation		786 804	743 404

PROFIT AND LOSS STATEMENT for the year ended 30 June 1988
GREAT BARRIER REEF AQUARIUM

	Note	1987-88 \$	1986-87 \$
REVENUE			
Establishment funds transferred from General Operations	8(a)	—	653 787
Admission fees		1 690 792	57 240
Interest		12 146	—
Other revenue		6 680	4 677
Recovered assets	3	—	13 332
		1 709 618	729 036
Shop sales		212 559	5 356
Less: Cost of goods sold	9	127 374	3 337
Gross profit from shop trading		85 185	2 019
Less Transfer to Capital Accumulation	4	—	263 683
Total revenue & gross profit from shop trading		1 794 803	467 372
EXPENSES			
Curatorial Operations	8(b)		
— technical services		163 700	47 916
— materials and sundries		62 647	—
Interpretive Facilities		35 870	11 167
Marketing/Promotions		111 535	61 282
Shop Management and Services		81 111	4 240
Repairs and Maintenance			
— building		289	—
— plant		19 690	2 009
Administrative Services			
— salaries and allowances		602 595	91 059
— property services		375 897	118 667
— general services		105 509	59 664
Depreciation of non-current assets	1(c)	416 523	38 063
Long service leave		(27 364)	16 535
Annual leave		(382)	10 563
Superannuation	1(h)	3 484	—
Leave fares		1 234	1 562
Total expenses		1 952 338	462 727
Net result from commercial activities transferred to Statement of Capital Accumulation		(157 535)	4 645

STATEMENT OF CAPITAL ACCUMULATION for the year ended 30 June 1988

	Note	1987-88 \$	1986-87 \$
Balance from previous years		9 534 205	1 140 231
Funds used for capital works and services	4		
— General Operations		560 994	592 534
— Great Barrier Reef Aquarium		—	263 683
Bicentennial funds used for capital purposes		114 527	7 176 516
Donated assets	11	34 053	—
Donations used for capital purposes	12	(15 000)	1 100 000
Repayment of GBR Aquarium establishment costs	10	(450 000)	—
Transfer of deficiency from Statement of Activity			
— General Operations		(786 804)	(743 404)
Transfer of net result from Profit and Loss Statement			
— Great Barrier Reef Aquarium		(157 535)	4 645
Accumulated Capital as at 30 June 1988		<u>8 834 440</u>	<u>9 534 205</u>
Net Assets from Statement of Assets and Liabilities		<u>8 834 440</u>	<u>9 534 205</u>

STATEMENT OF ASSETS AND LIABILITIES as at 30 June 1988

		General Operations	
	Note	1987-88 \$	1986-87 \$
ASSETS			
Current Assets			
Cash at bank		612 619	112 525
Cash on hand		—	—
Stock on hand		—	—
Advances and prepayments		47 681	20 126
Unexpended capital grants for day-to-day management	7	—	91 884
Debtors	16	44 464	80 650
Total Current Assets		704 764	305 185
Non-Current Assets			
	18		
Furniture fittings & displays		71 032	78 625
Office Machines		91 372	105 335
Audio visual & photographic		27 999	68 026
Marine & diving		14 080	263 864
Computer hardware		442 451	395 947
Computer software		214 240	245 390
Scientific and technical		43 883	106 863
Vehicles and mobile plant		13 218	108 392
Other plant and equipment		3 273	46 699
Aquarium contents		—	—
Improvements to leasehold property		—	—
— Aquarium building		—	—
— Fixtures and fittings		254 617	125 478
— Work in progress		—	350
Total Non-Current Assets		1 176 165	1 544 969
Total Assets		1 880 929	1 850 154
LIABILITIES			
Current Liabilities			
Establishment cost repayment	10	—	—
Creditors		207 422	126 782
Accrued expenses		52 525	31 511
Provision for long service leave	1(g)	19 769	30 538
Provision for annual leave		269 824	260 702
Provision for leave fares		34 176	30 895
Total Current Liabilities		583 716	480 428
Non-Current Liabilities			
Establishment cost repayment	10	—	—
Provision for long service leave	1(g)	431 506	292 841
Provision for superannuation		14 634	—
Total Non-Current Liabilities		446 140	292 841
Total Liabilities		1 029 856	773 269
NET ASSETS		851 073	1 076 885

Great Barrier Reef Aquarium		Total	
1987-88 \$	1986-87 \$	1987-88 \$	1986-87 \$
59 126	3 229	671 745	115 754
500	1 813	500	1 813
86 681	50 894	86 681	50 894
—	44 548	47 681	64 674
—	—	—	91 884
<u>139 397</u>	<u>303 552</u>	<u>183 861</u>	<u>384 202</u>
<u>285 704</u>	<u>404 036</u>	<u>990 468</u>	<u>709 221</u>
199 150	207 925	270 182	286 550
8 120	7 730	99 492	113 065
224 100	217 232	252 099	285 258
4 239	4 800	18 319	268 664
6 248	7 924	448 699	403 871
—	—	214 240	245 390
31 147	14 790	75 030	121 653
12 036	—	25 254	108 392
467 961	488 401	471 234	535 100
342 526	277 577	342 526	277 577
7 091 713	7 238 833	7 091 713	7 238 833
—	—	254 617	125 478
399	50 537	399	50 887
<u>8 387 639</u>	<u>8 515 749</u>	<u>9 563 804</u>	<u>10 060 718</u>
<u>8 673 343</u>	<u>8 919 785</u>	<u>10 554 272</u>	<u>10 769 939</u>
90 000	—	90 000	—
120 912	327 792	328 334	454 574
22 789	15 370	75 314	46 881
—	—	19 769	30 538
42 139	42 521	311 963	303 223
6 136	4 902	40 312	35 797
<u>281 976</u>	<u>390 585</u>	<u>865 692</u>	<u>871 013</u>
360 000	—	360 000	—
44 516	71 880	476 022	364 721
3 484	—	18 118	—
<u>408 000</u>	<u>71 880</u>	<u>854 140</u>	<u>364 721</u>
689 976	462 465	1 719 832	1 235 734
<u>7 983 367</u>	<u>8 457 320</u>	<u>8 834 440</u>	<u>9 534 205</u>

STATEMENT OF SOURCES AND APPLICATIONS OF FUNDS
for the year ended 30 June 1988

	Note	1987-88 \$	1986-87 \$
SOURCES OF FUNDS			
Funds from Operations	17		
General Operations:			
Inflow of funds from operations			
Parliamentary Appropriations			
— Operational		6 863 000	5 300 000
— Day-to-Day management		1 877 500	1 250 000
Proceeds from the sale of non-current assets		17 900	4 953
Other Revenue		257 972	137 001
Queensland payment for day-to-day management		1 400 000	975 000
		<u>10 416 372</u>	<u>7 666 954</u>
Less outflow of funds from operations		<u>9 576 813</u>	<u>7 559 844</u>
		<u>839 559</u>	<u>107 110</u>
Great Barrier Reef Aquarium			
Inflow of funds from operations			
Transfer from General Operations		—	653 787
Sales revenue — shop		85 185	2 019
Admission fees		1 690 792	57 240
Other revenue		18 826	4 677
Proceeds from the sale of non-current assets		13 798	—
		<u>1 808 601</u>	<u>717 723</u>
Less outflow of funds from operations		<u>1 572 641</u>	<u>396 005</u>
		<u>235 960</u>	<u>321 718</u>
Capital Appropriation		<u>100 000</u>	<u>120 000</u>
Reduction in Assets			
Current Assets			
Cash at bank		—	396 892
Cash on hand		1 313	—
Advances and Prepayments		16 993	—
Debtors		200 341	—
		<u>218 647</u>	<u>396 892</u>
Non-current Assets			
Disposal of non-current assets		<u>25 043</u>	<u>2 056</u>
		<u>243 690</u>	<u>398 948</u>
Increase in Liabilities			
Current Liabilities			
Creditors		—	336 019
Accruals		28 433	20 224
		<u>28 433</u>	<u>356 243</u>
Total sources of funds		<u>1 447 642</u>	<u>1 304 019</u>

APPLICATIONS OF FUNDS

Increase in Assets		
Current Assets		
Cash at bank	555 991	—
Cash on hand	—	1 813
Stock on hand	35 787	50 894
Advances and prepayments	—	38 769
Unexpended grants day-to-day management	—	34 985
Debtors	—	368 695
	<u>591 778</u>	<u>495 156</u>
Non-current Assets		
Furniture, fittings & display equipment	19 483	3 270
Office machines	31 865	79 916
Audio-visual & photographic equipment	33 992	39 194
Marine and diving equipment	6 051	159 482
Computer equipment	208 930	122 003
Computer software	12 870	56 168
Scientific & technical equipment	1 269	26 275
Vehicles and mobile plant	39 450	35 751
Other plant and equipment	11 771	34 115
Aquarium contents	26 692	24 996
Improvements to leasehold property		
— Aquarium building	76 298	227 343
— Fixtures and fittings	260 555	—
— Work in progress	399	350
	<u>729 625</u>	<u>808 863</u>
		<u>1 304 019</u>
Reduction in Liabilities		
Current Liabilities		
Creditors	126 239	—
Total applications of funds	<u>1 447 642</u>	<u>1 304 019</u>

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS for the year ended 30 June 1988

1. ACCOUNTING POLICIES

The following accounting policies have been adopted in the preparation of the accounts.

(a) Accounts Format

The accounts of the Authority have been prepared in accordance with:

- the 'Guidelines for the Form and Standard of Financial Statements of Commonwealth Undertakings', as applicable to 'Other Undertakings', issued by the Department of Finance in February 1985; and
- accounting standards issued by Australian accounting bodies (where applicable).

(b) Historical Cost Convention

These accounts have been prepared on the basis of the historical cost convention and except where stated do not show the current cost of specific assets and the impact of such costs on operating results.

(c) Depreciation of Non-current Assets

Capitalisation occurs on all items which cost more than \$400. Non-current assets are depreciated by the straight line method over their estimated useful lives.

Great Barrier Reef Aquarium —

The Great Barrier Reef Aquarium building was funded as a Commonwealth-State Bicentennial project, through the Great Barrier Reef Wonderland Association Incorporated. The Aquarium is sub-leased by the Authority from the Association for a period of 75 years. Under the terms of the sub-lease agreement the Authority is responsible for the replacement of the Aquarium building as necessary and for all expenses and revenue in relation to its operation. Consequently, the value of the Aquarium building has been taken up as an asset in the Authority's accounts and is being amortised over 25 years, which is the estimated useful life of the building.

Establishment costs associated with the Great Barrier Reef Aquarium were funded through the Great Barrier Reef Wonderland Association (from the Bicentennial grant and public donations) and the Authority (from appropriation and revenue). Such establishment costs have been capitalised and will be written off over an appropriate period.

The base stock of marine life, sand, coral and water in the Great Barrier Reef Aquarium has been included under non-current assets as a non-depreciable item. Additions to these stocks are added to the value of the base stock at cost. Future stock replacement costs will be treated as operating expenses.

The base stock of audio-visual displays at the Great Barrier Reef Aquarium has been included under non-current assets as a non-depreciable item. Additions to these stocks are added to the value of the base stock at cost. Future stock replacement costs will be treated as operating expenses.

(d) Advances to Consultants

Under the terms of certain contracts with consultants, payments are made in advance. Except for expenditure on assets which, under the terms of the contract become the property of the Authority from the date of acquisition, such advances are fully expensed in the year of payment. Where ownership of assets vests in the Authority on the completion of a contract, such assets are brought on charge by the Authority at that time, at their written down value and depreciated over their remaining useful life.

(e) Day-to-day Management Advances

Except for expenditure on fixtures upon land owned by or under the direct control of the Commonwealth or the Authority, advances to the Queensland National Parks and Wildlife Service for day-to-day management are fully expensed in the year of payment (refer Note 2 for details of the day-to-day management item).

(f) Stock on Hand

Goods for resale have been valued at the lower of cost or net realizable value.

(g) Provision for Long Service Leave

Provision has been made for pro-rata entitlements of all staff who have at least five years eligible service at balance date.

The current liability represents the estimated value of long service leave that is proposed to be taken by staff during the succeeding year.

(h) Superannuation

Staff of the Authority are employed under the Public Service Act and to date there has been no obligation in respect of employer contributions to the Commonwealth Superannuation Scheme. However as the Authority is required to manage the Great Barrier Reef Aquarium on a cost recovery basis, employer superannuation contributions for Aquarium employees are payable from 1 July 1988. The estimate for 1988-89 is \$65 000.

The 1987-88 provisions reflect the June 1986 National Wage Case Decision which provided for new or additional superannuation benefits. The Commonwealth Government agreed to an additional 3% overall benefit with 1.5% commencing from 1 January 1988 and the balance no later than 1 January 1989. The figures are based on 1.5% interim benefit.

2. DAY-TO-DAY MANAGEMENT OF THE GREAT BARRIER REEF MARINE PARK

(a) Principles agreed between the Commonwealth and Queensland Governments relating to the day-to-day management of the Great Barrier Reef Marine Park provide for:

- the Queensland National Parks and Wildlife Service (Q.NPWS) to carry out the day-to-day management of the Great Barrier Reef Marine Park, subject to the Authority
- the Commonwealth to fund 100% of an initial capital works program (in the first three years or so) required to establish management of the Great Barrier Reef Marine Park on a sound basis; other capital costs (i.e., the post-initial program) of day-to-day management of the Great Barrier Reef Marine Park to be shared equally between the two Governments
- the Commonwealth and Queensland to meet in equal shares the recurrent costs for day-to-day management in relation to the Great Barrier Reef Marine Park (which may include Queensland national parks or Queensland marine parks, the use or management of which would or might affect the Great Barrier Reef Marine Park)
- moveable property funded pursuant to the arrangements to be used and administered by Queensland; proceeds from the sale of any such moveable property are paid into the day-to-day management account to offset Commonwealth/Queensland contributions on a 50:50 basis
- fixed assets funded pursuant to the arrangements to be used by Queensland and administered by the Government (or Authority) which owns or controls the land on which the fixture is located
- expenditure on day-to-day management to be in accordance with an annually agreed program
- the Authority to administer funds provided by the Commonwealth and Queensland for these purposes.

(b) The Commonwealth appropriation for day-to-day management was made up of:

	1987-88	1986-87
	\$	\$
(i) Recurrent and Post-Initial Capital Programs	1 400 000	1 040 000
(ii) Initial Capital Works	477 500	210 000
	<u>1 877 500</u>	<u>1 250 000</u>

(c) The total Queensland contribution to day-to-day management was \$1 400 000 in 1987-88 compared with \$1 040 000 in 1986-87.

(d) Financial statements for day-to-day management which have been prepared by Q.NPWS and audited by the Queensland Auditor General are at Note 19.

3. RECOVERED ASSETS

Refer Note 1(d) for details of accounting policy on recovered assets.

4. TRANSFER TO CAPITAL ACCUMULATION

The funds transferred direct from Revenue to the Capital Accumulation Account represent capital expenditure.

5. EMOLUMENTS PAID TO AUTHORITY MEMBERS

The item 'Expenses of the Authority' includes remunerations paid in accordance with the Remuneration Tribunal Determination to:

	1987-88	1986-87
	\$	\$
Chairman	77 600	65 114
Part-time member	7 269	7 201

6. EXPENSES OF GREAT BARRIER REEF CONSULTATIVE COMMITTEE

This item includes sitting fees paid to part-time members in accordance with the Remuneration Tribunal Determination. In 1987-88 payments totalled \$6 678 compared with \$7 503 in 1986-87.

7. EXTRAORDINARY ITEM

On 10 May 1988 the Commonwealth, State of Queensland and the Authority signed a Deed of Agreement which provided for the use and disposal of moveable and immoveable property acquired or otherwise made available for the purposes of day-to-day management. Under the new arrangements moveable and immoveable property is managed and administered by Queensland. Immoveables (fixtures) are administered by the party which owns or controls the land on which the fixture is situated.

Therefore the Authority needs to account only for those fixtures on land owned or controlled by the Commonwealth. It has excised initial capital assets now managed and administered by Queensland. Since

the Agreement is deemed to operate from 1 August 1980, the assets have been excised at their written down value as at 30 June 1987 (\$698 878). The value (at cost) has always been taken up in the notes to the Q.NPWS statements — Note 18 refers.

The amount also includes unexpended initial capital works funds held by the Q.NPWS as at 30 June 1987 (\$91 884).

8. COMPARATIVE FIGURES

- (a) The 1987-88 figures reflect the first full-year of operation. The Great Barrier Reef Aquarium opened to the public on 24 June 1988.
- (b) Current expenses figures for 1987-87 have been adjusted to enable comparison with the revised form of financial statements for 1987-88.

9. COST OF GOODS SOLD

This item represents the cost of goods sold through the Great Barrier Reef Aquarium Shop as follows:

	1987-88*	1986-87*
	\$	\$
Opening Stock	50 894	—
Purchases	163 161	54 231
Less: Closing Stock	86 681	50 894
	<u>127 374</u>	<u>3 337</u>

* Refer Note 8(a)

10. REPAYMENT OF GREAT BARRIER REEF AQUARIUM ESTABLISHMENT COSTS

The Department of Finance has determined that establishment costs of \$450 000 appropriated in 1986-87 are recoverable. It is expected that this amount, plus interest at the long term bond rate, will be repaid over five years in the form of instalments deducted from Authority appropriation for 1988-89 onwards and made up from Aquarium revenue.

11. DONATED ASSETS

During the financial year a number of items of plant and equipment were donated to the Aquarium. These items were taken up into the assets records at their estimated value as at the date of acquisition.

12. DONATIONS USED FOR CAPITAL PURPOSES

During the 1986-87 financial year \$1 100 000 was taken up as donations to the Aquarium for capital purposes, of this amount, \$15 000 which had been pledged, was not realised and was funded from Aquarium revenue.

13. RESOURCES PROVIDED FREE OF CHARGE TO THE AUTHORITY

The following resources were provided free of charge to the Authority and accordingly are not reflected as expenses in the Statement of Activity:

	1987-88	1986-87
	\$	\$
(a) External audit services (the Australian Audit Office audits the Authority's accounts)	47 000	31 000
(b) Commonwealth Work Experience Program (staff employed under this scheme were paid by the then Department of Employment & Industrial Relations)	—	12 465
(c) Training for Aboriginals (staff employed under this scheme were paid by the then Department of Employment & Industrial Relations)	—	2 102
(d) Coastal Surveillance	—	389 289*

* Funds for coastal surveillance of the Great Barrier Reef Region, previously appropriated to the then Department of Arts, Heritage and Environment, were transferred to the Authority in 1987-88. 1987-88 expenditure of \$644 300 is included in the Park Management program.

14. LEASES

- (a) The aggregate amount of operating leases contracted for and outstanding as at 30 June 1988 is \$2 898 312. These leases are for office accommodation and the discharge will be:

	1987-88	1986-87
	\$	\$
Within one year	350 859	477 397
In the second year	338 842	346 318
Within a three to five year period	946 548	967 083
Later than five years	1 262 063	1 577 579
	<u>2 898 312</u>	<u>3 368 377</u>

- (b) The Authority sub-leases the Great Barrier Reef Aquarium building from the Great Barrier Reef Wonderland Association Incorporated for a nominal amount payable if demanded.

15. CONTINGENT LIABILITIES

The Authority is unaware of any contingent liability existing as at 30 June 1988.

16. DEBTORS

	1987-88	1986-87
	\$	\$
Debtors	183 861	384 202
Less: Provision for doubtful debts	—	—
Total Debtors	<u>183 861</u>	<u>384 202</u>

17. RECONCILIATION OF NET FUNDS FROM OPERATIONS

Net Funds from operations is reconciled with amounts transferred from the Statement of Activity, General Operations and Profit and Loss Statement, Great Barrier Reef Aquarium to Capital Accumulation as follows:

	General Operations		Aquarium	
	1987-88	1986-87	1987-88	1986-87
	\$	\$	\$	\$
Net flow from Operations	839 559	107 110	235 960	321 718
Add Income				
— Recovered assets	—	8 017	—	13 332
	<u>839 559</u>	<u>115 127</u>	<u>235 960</u>	<u>335 050</u>
Less Amount transferred direct from operations to Capital Accumulation	460 994	472 534	—	263 683
	<u>378 565</u>	<u>(357 407)</u>	<u>235 960</u>	<u>71 367</u>
Less Expenses				
— Depreciation of non-current assets	219 676	282 739	416 523	38 063
— Long service leave	127 896	37 905	(27 364)	16 534
— Annual leave	9 121	54 796	(382)	10 563
— Leave fares	3 281	10 557	1 234	1 562
— Superannuation	14 634	—	3 484	—
— Extraordinary Item	790 762	—	—	—
Transfer to Capital Accumulation	<u>(786 804)</u>	<u>(743 404)</u>	<u>(157 535)</u>	<u>4 645</u>

18. NON-CURRENT ASSETS

Details of accumulated depreciation are:

	Non-Current Assets at Cost	Accumulated Depreciation	Net Written Down Value
	\$	\$	\$
Furniture, fittings & displays	335 361	65 179	270 182
Office machines	174 104	74 612	99 492
Audio-visual & photographic	287 960	35 861	252 099
Marine & diving equipment	38 068	19 749	18 319
Computer hardware	781 750	333 051	448 699
Computer software	275 375	61 135	214 240
Scientific & technical	113 817	38 787	75 030
Vehicles & mobile plant	36 604	11 350	25 254
Other plant & equipment	511 147	39 913	471 234
Aquarium contents	342 526	—	342 526
Improvements to leasehold property			
— Aquarium building	7 470 340	378 627	7 091 713
— Fixtures & fittings	342 564	87 947	254 617
— Work in progress	399	—	399
	<u>10 710 015</u>	<u>1 146 211</u>	<u>9 563 804</u>

The detailed breakup of non-current assets between the Authority's General Operations and the Great Barrier Reef Aquarium is as follows:

Cost

	1987-88 \$	1986-87 \$
GENERAL OPERATIONS		
Furniture, fittings & displays	120 796	121 368
Office machines	163 577	156 206
Audio-visual & photographic	51 845	105 990
Marine & diving	32 408	365 189
Computer hardware	773 370	635 851
Computer software	275 375	281 645
Scientific & technical	76 812	154 153
Vehicles & mobile plant	23 935	170 199
Other plant & equipment	7 179	57 185
Improvements to leasehold property		
— Fixtures & fittings	342 564	198 902
— Work in progress	—	350
Total General Operations	1 867 861	2 247 038
GBR AQUARIUM		
Furniture, fittings & displays	214 565	209 835
Office machines	10 527	8 348
Audio-visual & photographic	236 115	218 119
Marine & diving	5 660	5 125
Computer hardware	8 380	8 380
Computer software	—	—
Scientific & technical	37 005	16 478
Vehicles & mobile plant	12 669	—
Other plant & equipment	503 968	492 197
Aquarium contents	342 526	277 577
Improvements to leasehold property		
— Aquarium building	7 470 340	7 267 215
— Work in progress	399	50 537
Total GBR Aquarium	8 842 154	8 553 811
	10 710 015	10 800 852

Accumulated Depreciation		Written Down Value	
1987-88	1986-87	1987-88	1986-87
\$	\$	\$	\$
49 764	42 743	71 032	78 625
72 205	50 871	91 372	105 335
23 846	37 964	27 999	68 026
18 328	101 325	14 080	263 864
330 919	239 904	442 451	395 947
61 135	36 255	214 240	245 391
32 929	47 290	43 883	106 863
10 717	61 807	13 218	108 392
3 906	10 486	3 273	46 699
87 947	73 424	254 617	125 478
—	—	—	350
691 696	702 069	1 176 165	1 544 969
15 415	1 910	199 150	207 925
2 407	618	8 120	7 730
12 015	887	224 100	217 232
1 421	325	4 239	4 800
2 132	456	6 248	7 924
—	—	—	—
5 858	1 688	31 147	14 790
633	—	12 036	—
36 007	3 796	467 961	488 401
—	—	342 526	277 577
378 627	28 382	7 091 713	7 238 833
—	—	399	50 537
454 515	38 062	8 387 639	8 515 749
1 146 211	740 134	9 563 804	10 060 718

19.

NATIONAL PARKS AND WILDLIFE SERVICE
GREAT BARRIER REEF MARINE PARK
STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE YEAR ENDED 30TH JUNE, 1988

1986-87		1987-88	
\$	\$	\$	\$
	The balance at 1st July comprised —		
(48,287)	Recurrent Costs	(20,069)	
47,795	Capital Works and Services	91,884	
			71,815
	Receipts for the year were —		
1,890,000	Recurrent Costs	2,606,000	
768,800	Capital Works and Services	692,000	
21,400	Disposal of Motor Vehicles	31,508	
	Transfer of funds to Capital Works and Services Balance from Recurrent Costs Balance	—	
28,752		—	
	Reimbursement of recurrent expenditure over advanced to Department of Housing and Construction	—	
5,551		—	
	Reimbursement of capital expenditure over advanced to Department of Housing and Construction	—	
524		—	
2,715,027	Total Receipts (Note 1)	3,329,508	
	From which the following payments were made —		
732,759	Salaries and Wages (Note 5)	1,303,221	
1,105,822	Operating Costs (Note 2) (Note 5)	1,279,222	
753,987	Capital Works and Services (Note 3)	633,212	
10,700	To GBRMPA for vehicles sold To Qld Treasury Department for vehicles sold	31,508	
10,700	Transfer of funds from recurrent cost balance to capital works and services balance	—	
28,752		—	
2,642,720	Total Payments	3,247,163	
72,307	Resulting in an excess of receipts over payments of		82,345
	Leaving a balance at 30th June comprising —		
(20,069)	Recurrent Costs	17,616	
91,884	Capital Works and Services	136,544	
71,815		154,160	

NOTES TO AND FORMING PART OF THE ACCOUNTS

(A) Statement of Accounting Policies

(a) Basis of Accounts

The accounts have been prepared on a cash basis, consistent with the basis applied in the previous financial year.

(B) Statement of Significant Items Outside the Ambit of the Statement

1. Current Assets/Liabilities

Current assets and liabilities stood at a normal level at the beginning and end of the year.

2. Contingent Assets/Liabilities

There were no known contingent assets or liabilities of a significant nature at 30th June, 1988.

3. Statement of Capital Assets (At Cost) as at 30th June, 1988.

	Funded by Commonwealth (cumulative from 1st July, 1981)		Funded by Queensland (cumulative from 1st July, 1981)	
	1986-87 \$	1987-88 \$	1986-87 \$	1987-88 \$
Buildings and infrastructure	—	114,885	—	51,850
* Vessels and associated equipment	437,355	479,902	81,519	89,524
** Vehicles	162,244	189,886	39,097	58,651
Diving equipment	52,362	61,981	—	—
Audio visual and interpretation equipment	114,332	174,064	8,526	11,328
Air compressor	5,646	5,646	2,150	2,150
Plant and equipment	318,162	430,841	28,330	32,094
Monitoring facilities	9,669	9,669	—	—
Accommodation, storage shed and workshop — Heron Island	226,547	226,547	1,892	1,892
Interpretative building — Heron Island	168,088	168,088	—	—
Office accommodation — Cairns	116,893	116,893	—	—
Flinders Island — base equipment	43,257	43,257	—	—
Office accommodation — Innisfail	8,061	8,061	—	—
Quarantine Station — Townsville	95,650	95,650	—	—
Boatshed — Halifax Bay	—	102,500	—	—
	<u>\$1,758,266</u>	<u>\$2,227,870</u>	<u>\$ 161,514</u>	<u>\$ 247,489</u>

** The cumulative figures for joint Commonwealth/State funded vehicles in 1986-87 have been reduced by \$13,651 each. This represents the cost price of vehicles disposed of during that year.

The cumulative figure for Commonwealth funded vehicles in 1987/88 has been reduced by \$33,204. This represents the cost price of vehicles and accessories disposed of during that year.

* The cumulative figure for Commonwealth funded vessels in 1987-88 has been reduced by \$36,509. This represents the cost price of the vessel Protector II that was disposed of during that year.

The cumulative figures for joint Commonwealth/State funded vessels in 1987/88 have been reduced by \$3,960 each. This represents the cost price of the accessories on the vessel Protector II that was disposed of during that year.

Stocktakes were carried out by officers of the Queensland National Parks and Wildlife Service and equipment on hand balance with official equipment cards.

(C) Explanatory Notes

	1986-87 \$	1987-88 \$
Note 1 Receipts during the year were provided from the following sources:		
Commonwealth Government:		
Recurrent Costs 50%	945,000	1,303,000
Capital Works and Services:		
Initial Program 100%	578,800	498,000
Post-Initial Program 50%	95,000	97,000
	<u>1,618,800</u>	<u>1,898,000</u>
Queensland Government:		
Recurrent Costs 50%	945,000	1,303,000
Capital Works and Services:		
Post-Initial Program 50%	95,000	97,000
	<u>1,040,000</u>	<u>1,400,000</u>
Reimbursement from Department of Housing and Construction for over-advanced funds		
Commonwealth funded — Capital	524	—
Commonwealth funded — Recurrent	2,775	—
State funded — Recurrent	2,776	—
	<u>6,075</u>	<u>—</u>
Disposal of Motor Vehicles:		
Funded 100% by Commonwealth	—	31,508
Funded 50% by Commonwealth	10,700	—
Funded 50% by State	10,700	—
Transfer of funds to Capital Works and Services Balance from Recurrent Costs Balance	28,752	—
Total Receipts	<u>2,715,027</u>	<u>3,329,508</u>
Note 2 Operating Costs: (Note 4)		
Superannuation (Note 5)	48,878	135,462
Payroll tax (Note 5)	40,049	64,930
Travel and subsistence	117,564	136,624
Office services and field support	202,622	274,743
Office requisites	40,816	45,833
Staff development and requisites	11,298	32,349
Project requisites and consultancies	299,836	197,039
Vessel and vehicle maintenance and running	101,664	190,792
Vessel charter	52,222	24,160
Aircraft charter	190,873	177,290
	<u>1,105,822</u>	<u>1,279,222</u>
Note 3 Capital Works and Services	1986-87 \$	1987-88 \$
— Initial Program		
Buildings and infrastructure (Note 6)	119,707	169,589
Vessels and associated equipment	148,868	71,050
Vehicles	33,108	41,292
Audio-visual and interpretive equipment	35,887	56,929
Field equipment and radios (Note 7) (Note 8)	103,336	25,319
Office, workshop and laboratory equipment (Note 8)	103,433	89,161
	<u>544,339</u>	<u>453,340</u>
— Post Initial Program		
Buildings and infrastructure (Note 6)	3,784	103,700
Vessels and associated equipment	111,681	23,931
Vehicles	69,502	39,108
Audio/visual and interpretive equipment (Note 8)	3,618	5,605
Field equipment and radios (Note 8)	10,478	2,590
Office, workshop and laboratory equipment (Note 8)	10,585	4,938
	<u>209,648</u>	<u>179,872</u>
	<u>753,987</u>	<u>633,212</u>

- Note 4 Various line items and amounts have been varied from those previously published due to reclassification of accounts and in order to preserve valid comparison.
- Note 5 Operating Costs include Superannuation and Payroll Tax. These items were previously included with Salaries and Wages.
- Note 6 Buildings and infrastructure figures are not dissected into specific projects as in previous financial years. These figures include interpretive building Heron Island, Flinders Island base equipment, office accommodation Innisfail and Quarantine Station Townsville for Initial Program and Heron island boat shed for Post Initial Program.
- Note 7 Amounts previously recorded as diving equipment are now included as Field equipment and radios.
- Note 8 Previously reported as 'Plant and equipment'.

CERTIFICATE OF THE QUEENSLAND NATIONAL PARKS AND WILDLIFE SERVICE

We have prepared the foregoing annual financial statement in relation to the operation of the Great Barrier Reef Marine Park as required by the relevant Agreements dated 10th May, 1988 between the Commonwealth and Queensland Governments and the Great Barrier Reef Marine Park Authority and certify as follows —

- (a) the foregoing financial statement and appended notes to and forming part thereof are in agreement with the accounts and records of the Service;
- (b) the receipt and expenditure of monies were in accordance with the approved programs and in accordance with the aforementioned agreements and previous draft agreements executed between the Commonwealth and Queensland Governments with regard to day-to-day management and control and ownership of assets; and
- (c) in our opinion —
 - (i) the prescribed requirements in respect of the establishment and keeping of accounts have been complied with in all material respects; and
 - (ii) the foregoing annual financial statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the Queensland National Parks and Wildlife Service in relation to the Great Barrier Reef Marine Park for the period 1st July, 1987 to 30th June, 1988 and of the financial position as at the close of that year.

C. Nicolson,
Assistant Director (Financial Services),
Department of Environment,
Conservation and Tourism

H.A. Bonney,
Director,
National Parks and Wildlife,
Department of Environment,
Conservation and Tourism

20/9/88

CERTIFICATE OF THE AUDITOR-GENERAL OF QUEENSLAND

I certify that, in my opinion:

- (1) the foregoing Statement of Receipts and Payments and appended notes for the period 1st July, 1987 to 30th June, 1988 are based on proper accounts and records and are in agreement with those accounts and records; and
- (2) the expenditure of moneys was in accordance with the relevant Agreements dated 10th May, 1988 between the Commonwealth and Queensland Governments and the Great Barrier Reef Marine Park Authority in respect of financial assistance for the Great Barrier Reef Marine Park.

V.C. Doyle,
Auditor-General of Queensland

23/9/88

APPENDIX H

AUDITOR-GENERAL'S REPORT

28 November 1988

The Honourable the Minister for Arts,
Sport, the Environment, Tourism and
Territories
Parliament House
CANBERRA ACT 2600

Dear Minister

GREAT BARRIER REEF MARINE PARK AUTHORITY AUDIT REPORT ON FINANCIAL STATEMENTS

Pursuant to sub-section 60(2) of the Great Barrier Reef Marine Park Act 1975, the Great Barrier Reef Marine Park Authority has submitted for my report its financial statements for the year ended 30 June 1988. These comprise a statement of activity, profit and loss statement, statement of assets and liabilities, statement of capital accumulation, statement of sources and applications of funds, notes to and forming part of the financial statements and the certificate of the Chairman and the Executive Officer.

The statements have been prepared in accordance with the policies outlined in Note 1 to the Accounts and in accordance with the Guidelines for the Form and Standard of Financial Statements of Commonwealth Undertakings approved by the Minister for Finance. The statements are in the form approved by the Minister for Finance pursuant to sub-section 60(1) of the Act. A copy of the financial statements is enclosed for your information.

These statements have been audited in conformance with the Australian Audit Office Auditing Standards.

In accordance with sub-section 60(2) of the Act, I now report that the statements are in agreement with the accounts and records of the Authority and, in my opinion:

- (a) the statements are based on proper accounts and records, and
- (b) the receipt and expenditure of moneys, and the acquisition and disposal of assets by the Authority during the year, have been in accordance with the Act.

Yours sincerely
Australian Audit Office



M.J. Jacobs
First Assistant Auditor-General

APPENDIX I

CROWN OF THORNS STARFISH ADVISORY REVIEW COMMITTEE

Professor John Swan (Chairman)
Immediate past Chairman of the Australian Marine Science and Technology
Advisory Committee (AMSTAC)

Dr J. T. Baker, OBE
Director, Australian Institute of Marine Science

Dr C. Birkeland
Marine Laboratory, University of Guam

Professor R. Carter
Geology Department, James Cook University of North Queensland

Associate Professor R. Endean
Zoology Department, University of Queensland

Mrs P. Hayles
Marketing Servicing Manager, Hayles Magnetic Island Pty. Ltd.
(representing the tourist industry)

Dr T. Hundloe
Director, Institute of Applied Environmental Research, Griffith University

Dr R. A. Hynes
Director, Central Section, Queensland National Parks and Wildlife Service

Mr G. Kelleher
Chairman, Great Barrier Reef Marine Park Authority

Dr J. Lucas
Zoology Department, James Cook University of North Queensland

Mr R. Pearson
Director, Fisheries Research Branch, Queensland Department of Primary
Industries

Senator Margaret Reynolds
(representing Queensland in the Australian Senate)

Professor K. P. Stark
Chairman, Department of Civil and Systems Engineering James Cook
University of North Queensland

Associate Professor P. Sale
Department of Zoology, University of New Hampshire, USA

Professor M. Yamaguchi
Department of Marine Sciences, University of the Ryukyus, Japan

