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BASIS FOR ZONING

THE GREAT BARRIER REEF MARINE PARK - CENTRAL SECTION

A document for staff engaged in day-to-day management of the
Central Section of the Great Barrier Reef Marine Park and
adjacent Queensland national parks and marine parks

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PREFACE

Aims of this document

This document provides information on the development of the Zoning Plan for the Great Barrier Reef Marine Park - Central Section and the rationale for the final zoning for use by Queensland National Parks and Wildlife Service staff involved in day-to-day management of the Central Section and associated Queensland marine park areas and national parks. It is intended to assist in the planning and implementation of day-to-day management operations, by giving an explanation of the zoning process required by staff not previously familiar with maritime estate management, while providing additional background and details useful also for those staff already experienced in marine park management.

Under an agreement between the Commonwealth and Queensland Governments, the Queensland National Parks and Wildlife Service carries out the day-to-day management of the Great Barrier Reef Marine Park, on behalf of the Great Barrier Reef Marine Park Authority. In the Basis of Agreement, and attached Management Guidelines, the Service's day-to day management responsibilities were divided into administration, surveillance, enforcement, education and interpretation, monitoring and resource management. These categories have now been incorporated into sub-programs within the Service's Maritime Estate Management Program. The Service has also been responsible for the day-to-day management of Queensland marine park areas within the Great Barrier Reef region, on behalf of the Premier's Department, but this role is now being broadened as responsibility for both planning and management of State marine parks is to be handed over to the Service. All aspects of management of Queensland's national parks are of course carried out by the Queensland National Parks and Wildlife Service.

Prior to the zoning of the Central Section of the Great Barrier Reef Marine Park, the Service had had some input into the development of marine park Zoning Plans. However, for various reasons the continuity of involvement from zoning to management was not possible, with the result that staff engaged in day-to-day management felt inadequately briefed about the zoning

process and the rationale for the Zoning Plan they were to implement. For the zoning of Central Section (and subsequently the southern Sections), a Regional Service representative was included as a member of a Queensland Inter-Departmental Working Group involved in marine park zoning, and was involved also with the Great Barrier Reef Marine Park Authority Planning Team for zoning of the Central Section. This level of participation was intended both to provide Regional Service input into Zoning Plan development, and to promote the transfer of information from the zoning process to subsequent day-to-day management.

This document has therefore been prepared with a view to providing day-to-day management staff with information on the basis for and implications of the final zoning, not available in the case of previously zoned Sections of the marine park. It is anticipated that the document may be of some use also to staff of the Great Barrier Reef Marine Park Authority; and it may serve as an important reference for both organizations when a review of the Central Section Zoning Plan is eventually undertaken. It is emphasized that this document is not for public distribution as it contains some confidential material, and that it represents the individual interpretations of the author, which may not necessarily be the views of the Queensland National Parks and Wildlife Service or the Great Barrier Reef Marine Park Authority.

Basis for Zoning the Great Barrier Reef Marine Park - Central Section includes an account of how Zoning Plans are prepared for the Great Barrier Reef Marine Park and Queensland marine park areas; some critique of the final Zoning Plan with particular reference to considerations given to certain user groups in zoning plan development and whether guidelines for Zoning Plan preparation could be met; overviews of the management implications and monitoring requirements arising from the Central Section Zoning Plan; and a detailed location-by-location analysis of the Zoning Plan with emphasis on those areas afforded more protective zoning and the consequent management implications and monitoring requirements for those particular locations.

Two series of attachments are also provided. The first set contains

material considered essential to the reading of this document. The second set includes accounts of meetings held by GBRMPA during Public Participation Programs, field reports, lists of people who made representations regarding the zoning, potential permittees, and the like, material not essential to the interpretation of this document but which is expected to be useful reference material for day-to-day management staff.

It is emphasized that this document is not necessarily in its final form, and it is expected that it will be added to or amended, according to emerging requirements of day-to-day management staff and as other relevant information comes to light.

INTRODUCTION

The Great Barrier Reef Marine Park

The Great Barrier Reef Marine Park is a multiple use park which allows for all reasonable uses to be carried out provided they are consistent with the long-term conservation of the Great Barrier Reef. The only activities which are prohibited throughout the marine park are drilling for oil; mining (except for approved research purposes); spearfishing using SCUBA or a powerhead, or for any commercial purposes; and the taking of certain specified species such as potato cod. Planning and management of the Great Barrier Reef Marine Park are carried out primarily through Zoning Plans which are drawn up in accordance with the following objectives, as laid down in the Great Barrier Reef Marine Park Act (1975):

- the conservation of the Great Barrier Reef;
- the regulation of use of the Marine Park so as to protect the Great Barrier Reef while allowing the reasonable use of the Great Barrier Reef Region;
- the regulation of activities that exploit the resources of the Great Barrier Reef Region so as to minimise the effect of those activities on the Great Barrier Reef;
- the reservation of some areas of the Great Barrier Reef for its appreciation and enjoyment by the public; and
- the preservation of some areas of the Great Barrier Reef in its natural state undisturbed by man except for the purposes of scientific research.

For the purposes of zoning and management, the Great Barrier Reef Marine Park has been divided into a number of Sections. From north to south, these are: the Far Northern Section; the Cairns and Cormorant Pass Sections; the Central Section; and the two Southern Sections (which include the Capricorn

Section, plus the smallest and first-declared Section, the Capricornia Section). When first declared in 1983, what is now the Central Section actually consisted of an inshore (Townsville) Section and an offshore (Central) Section, but these two Sections were subsequently (in 1984) amalgamated to form a single, larger Section also called the Central Section. Marine Park Section boundaries and Queensland National Parks and Wildlife Service Regional boundaries were amended slightly so that they would correspond, to facilitate day-to-day management arrangements. One important result of this was the inclusion of the Whitsunday Islands in the Central Section, since the island national parks were already being managed from the Q.NPWS Northern Region.

The Central Section now extends from inshore out to the Coral Sea, and from Dunk Island in the north, to just south of Cape Conway and the Lindeman Island Group. It encompasses an area of about 77,000 square kilometres, or approximately one fifth of the total area of the Great Barrier Reef Marine Park. The Section contains some 600 reefs and over 200 islands, nearly all of which are high or continental island, with only a handful (about 13) being sand or shingle cays of reefal origin. Most of the islands are Queensland national parks, and many of them have fringing coral reefs.

Adjacent to the Central Section, or within its outer boundaries, several areas are also being declared as marine park under Queensland legislation. These areas of State marine park are located around the groups of continental islands and offshore cays, and in some areas adjacent to the mainland coast, such as Bowling Green Bay and the Upstart Bay area.

The Central Section lies adjacent to Townsville/Thuringowa, the largest population centre in the whole Great Barrier Reef region. Other major centres on or near the coast include Cardwell, Ingham, Ayr and Home Hill, Bowen, and Proserpine and Airlie Beach, with major ports at Lucinda, Townsville, Abbott Point and Bowen. In addition there is a substantial number of tourist resorts, notably in the Whitsunday Islands area, and on Magnetic Island and other islands in the northerly part of the Section. Recreational and commercial uses of the Central Section are many and varied, and the Section is arguably the most heavily used Section of the Great

Barrier Reef Marine Park. Uses include recreational fishing, shell and aquarium fish collecting, diving, research, educational activities, and defence exercises. The two major industries of the Great Barrier Reef region - commercial fishing and tourism - feature very prominently within the Central Section. An aspect of adjacent land use which may be of increasing relevance to maritime estate management is the growing aquaculture industry in North Queensland.

The Zoning Concept

Zoning Plans are developed by the Great Barrier Reef Marine Park Authority (GBRMPA) to regulate usage of the marine park, in order to protect the environment and its resources, and to separate incompatible human activities. Through the use of zones, levels of protection are graded from very little restriction of activity (which is the case throughout much of the Great Barrier Reef Marine Park) through to more protected areas of marine national park, to a small number of areas where almost no human activities are permitted and public entry is normally prohibited. In addition, the Zoning Plan allows for Designated Areas within zones to cater for specific purposes such as shipping, defence, and replenishment of resource stocks. Special Management Areas such as Reef Appreciation Areas and Reef Research Areas may be declared subsequently in response to environmental needs or changing patterns of use, with appropriate public input. Within the overall zoning system, further regulation of certain activities and "fine tuning" of management are achieved through the use of permits, which are required for specified activities in some or all zones. Some aspects of management including further definition and lists of declared species, are further defined in Regulations (made under the Great Barrier Reef Marine Park Act) which are necessary to complement the Zoning Plans.

The zones used in zoning the Central Section (and used also in previously zoned Sections of the Great Barrier Reef Marine Park) are formally defined in Part Two of the Central Section Zoning Plan. The principal objectives of these zones and restrictions applying within each type of zone or Designated Area may be summarized as follows:

General Use 'A' Zone (GU'A')

Least restrictive of the zones, this provides for all reasonable uses, including shipping and trawling. Prohibited activities are mining, oil drilling, commercial spearfishing and spearfishing with underwater breathing apparatus.

General Use 'B' Zone (GU'B')

Provides for reasonable use, including most commercial and recreational activities. Trawling and general shipping are prohibited as well as those activities not allowed in General Use 'A' Zone.

Marine National Park 'A' Zone (MNP'A')

Provides for appreciation and recreational use, including limited line fishing. Fishing is restricted to one line with one hook per person. (When trolling for pelagic species more than one line may be used). Spearfishing and collecting are prohibited, as well as those activities not allowed in General Use 'B' Zone.

Marine National Park 'B' Zone (MNP'B')

Provides for appreciation and enjoyment of areas in their relatively undisturbed state. It is a 'look but don't take' zone. Fishing and all other activities which remove natural resources are prohibited.

Scientific Research Zone (SRZ)

Set aside exclusively for scientific research with a permit. Entry and use for other reasons is prohibited.

Preservation Zone (PZ)

Provides for the preservation of areas in an undisturbed state. All entry

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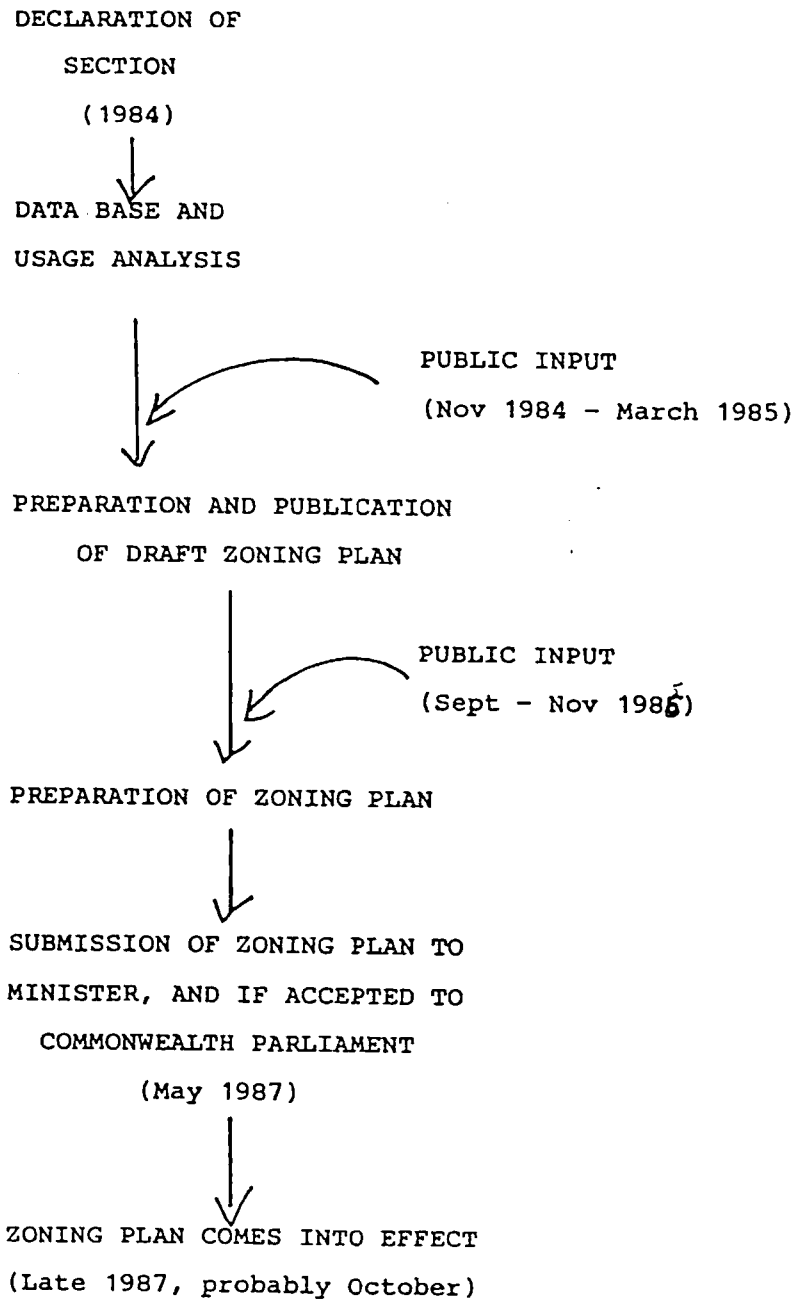
is prohibited, except in an emergency, or for permitted scientific research which cannot be conducted elsewhere.

The "Activities Guide" summarizes which activities are allowed in each zone, and whether a permit is required.

ZONING PLAN DEVELOPMENT

The Zoning process for the Great Barrier Reef Marine Park

The main stages in Zoning Plan preparation apply to all Sections of the marine park, and may be summarized as follows (dates in brackets indicate timing for Central Section zoning):



Further details of these processes are given in the booklets and pamphlets released in connection with zoning the Central Section (cited below). During the first Public Participation Program ("Notice of Intent to Prepare a Zoning Plan"), the public are invited/requested to provide information on uses and resource characteristics on the Section, and to make suggestions regarding zoning and management. In addition to formal written notifications in the press, other media publicity, including television advertisements and manned displays at key venues, is used to encourage public involvement in the zoning. Great Barrier Reef Marine Park Authority staff also address meetings of relevant user groups, such as fishing, shell collecting, and diving clubs, and consult with major users.

To assist with zoning of the Central Section, and particularly with public contributions to the zoning process, the Great Barrier Reef Marine Park Authority issued a booklet known as the Central Section Information Summary (a copy is provided in the Attachments Set 1). This document summarizes, with reference to a series of maps, the data available to date on the various resources and uses of the Section and associated islands and adjacent mainland. Day-to-day management staff are advised to read especially the introductory sections of this Central Section Information Summary, but many of the maps have since been updated.

In preparing the Draft Zoning Plan, the Great Barrier Reef Marine Park Authority takes into account the information and suggestions contained in the representations received from the public. GBRMPA also utilizes information it has sought on specific issues, (such as distribution of rare species and their habitat, principal destinations of tourist vessels), and conducts certain field inspections. In addition, GBRMPA must consider the recommendations provided by Commonwealth and Queensland Governments. More information on the input of Queensland Government Departments is given below. Once the Draft Zoning Plan had been approved by the Authority (ie the "Three Man Authority"), a second Public Participation Program is then conducted, again with substantial publicity and contact with user group organizations. In seeking public comment on the Draft Zoning Plan for the Central Section, the Great Barrier Reef Marine Park Authority issued the Central Section Zoning Plan for Public Review plus an accompanying document

entitled Zoning the Central Section (both included in the Attachments Set 1). This explanatory booklet outlines the zoning process and briefly indicates the zoning rationale especially for the more protective zoning. It includes some basic analysis of the representations, and provides updated maps summarizing natural resource and usage data. Zoning the Central Section is a very useful reference for day-to-day management staff, particularly the sections dealing with guidelines for the preparation of the Zoning Plan, and the resource maps (although a few now require further amendment, such as the one on trawling).

Once public comments on the Draft Zoning Plan have been received and analysed and the recommendations of the respective Commonwealth and Queensland Inter-Departmental Committees duly considered, amendments are made to the Zoning Plan, as appropriate. As explained in Zoning the Central Section (pp. 4-5) a report is then submitted to the responsible Commonwealth Government Minister (up until now the Minister for the Arts, Heritage and Environment). This report plus the revised Zoning Plan are submitted to the Ministerial Council, consisting of two Commonwealth and two Queensland Government Ministers. Provided that the Minister and the Ministerial Council do not require any further amendments, the Zoning Plan is submitted to Federal Parliament. If after 15 sitting days there are no motions passed to disallow it, the Zoning Plan comes into effect on a date specified by the responsible Minister.

Zoning Queensland marine park areas

Queensland's Marine Parks Act (1982) provides for areas which are "tidal lands and tidal waters" of Queensland to be declared as marine parks. In the case of the Great Barrier Reef region, this State legislation allows complementary management and protection for tidal areas which are not included in the Great Barrier Reef Marine Park. Prior to the zoning of the Central Section, zoning of Sections of the Great Barrier Reef Marine Park had been completed before zoning of Queensland marine park areas within those Sections could be undertaken. But with the Central Section, zoning of Commonwealth and Queensland marine parks were undertaken simultaneously, although the Queensland schedule eventually lagged a little behind. The

Queensland Premier's Department had the responsibility for declaration and zoning of the State marine parks (although this responsibility will soon be handed over to the Queensland National Parks and Wildlife Service, which already carries out day-to-day management of Queensland marine parks within the Great Barrier Reef region). In the case of the potential Queensland marine park areas within or adjacent to the Central Section, the Premier's Department engaged a firm of consultants, Environment Science and Services, to investigate the suitability of areas for declaration as State marine parks and to draw up a Draft Zoning Plan.

The "upper" boundary of the Queensland marine parks is the high tide mark (highest astronomical tide), except in unusual cases where Queensland national or environmental parks already extend below that level. Day-to-day management staff must be aware that the lower boundaries of Queensland marine parks are the subject of differing interpretations. State and Commonwealth definitions of low water mark are not identical, nor are their interpretations of the extent of the "tidal lands and tidal waters" under Queensland's jurisdiction (whether in inshore areas, or around offshore coral cays, of which Queensland has listed 17 compared to the Commonwealth's original figure of 13). Thus there are separate areas of Queensland and Commonwealth responsibility as well as areas of "overlapping responsibility". But while the State and Commonwealth Marine Parks Acts and legislation are not identical, the Zoning Plans are basically complementary. The net result is that intertidal areas (clearly not covered by the Commonwealth legislation except where adjacent to Commonwealth property eg Eshelby Island) are suitably protected through the Queensland marine park Zoning; and the complementary zoning ensures that adjacent areas of "overlapping responsibility" where jurisdiction may be debatable can be appropriately managed, while problems relating to the location of the low water mark can be minimized.

The Draft Zoning Plan for the Queensland marine park within the Central Section has now also been revised as part of the co-operative development of the Zoning Plans for the respective Commonwealth and State marine park areas. However, day-to-day management staff are advised to look at the Draft Zoning Plan for the Queensland marine park, and more particularly at

the Volume 1: Background Information (see Attachments Set 1) which includes some important information not necessarily included in the booklets produced by the Great Barrier Reef Marine Park Authority for the Central Section's Commonwealth waters. Note that the Queensland legislation does not require subsequent public participation such as comment on the proposed Zoning Plan.

Island national park management planning

As zoning of the Central Section commenced in late 1984, investigations were being undertaken by the Service (principally by Dr P. Lavarack) on a detailed management plan for the national park islands in the Whitsunday area. It was therefore expedient, during the first Public Participation Program for the Central Section zoning, to invite the public to submit information and suggestions regarding usage and management of national parks in this Section. Thus the first Public Participation Program sought public input on the Great Barrier Reef Marine Park zoning, the Queensland marine park declaration and zoning, and island national park management planning. (As it turned out, the number of representations received regarding the Great Barrier Reef Marine Park Central Section zoning far exceeded those concerning the Queensland marine park proposals and national park management planning. One reason may be that publicity for the Great Barrier Reef Marine Park zoning was much more extensive.)

A substantial management plan for national park islands in the Whitsunday area has been developed by Dr Lavarack, and day-to-day management staff should refer to this (although it has not yet been formally approved). There are, of course, some major differences between this national park management plan, and the marine park Zoning Plans. Firstly, in contrast to the multiple use concept applying to the marine parks, the national park status already conferred to these islands provides protection equivalent to the Marine National Park 'B' zoning. The management plan therefore serves rather to provide finer tuning of management in a region of heavy usage where human activities tend to be concentrated in a few accessible and often vulnerable locations, principally the more accessible beaches. While public input can be useful for national park management planning, it is neither necessary for planning purposes as it would be in the case of the marine

parks, nor is it a legal requirement. Moreover, it has not yet been possible for the Service to make the management plan for the Whitsunday Islands area available to the public, whereas the marine park Zoning Plans are legal documents which must be publicly available so that users know where various activities are permitted or prohibited.

Service involvement in Zoning Plan development

At various stages during the development of the Central Section Zoning Plan, the Queensland Inter-Departmental Working Group, convened by the Premier's Department, met to discuss the zoning of the Central Section. As investigations for the Queensland marine park within the Central Section were proceeding at the same time, meetings were generally held on consecutive days to discuss, respectively, the State and Commonwealth marine park zoning. The Queensland Working Group included representatives from the following Queensland departments and agencies:

- Premier's Department
- Queensland Fish Management Authority (QFMA)
- Department of Primary Industries (DPI)
- Queensland National Parks and Wildlife Service
- Department of Harbours and Marine
- Queensland Boating and Fisheries Patrol
- Department of Community Affairs
- Department of Survey and Mapping

Staff of the Great Barrier Reef Marine Park Authority were of course also involved in the Working Group discussions.

Formal discussion towards the preparation of Queensland Government comment on the Great Barrier Reef Marine Park zoning was undertaken by the Queensland Inter-Departmental Committee, with Queensland departments represented as above. Day-to-day management staff should note that the only avenue for official, written submissions to the Great Barrier Reef Marine Park Authority by Queensland government departments and authorities is through the Inter-Departmental Committee convened by the Premier's

Department. This ensures, amongst other things, that a single co-ordinated Queensland Government view is presented, and avoids the possibility of individual departments with differing perspectives offering incompatible advice. Thus the Queensland Government response may represent, in certain cases, a compromise of the various departmental recommendations, and Service staff should be aware that in certain instances the suggestions proposed by Queensland National Parks and Wildlife Service representatives could not be adopted for the co-ordinated Queensland Government view.

In addition, informal exchange to provide further background on specific issues took place between the Great Barrier Reef Marine Park Authority and various departments and authorities. In the case of the Queensland National Parks and Wildlife Service, the Regional representative on the Queensland Inter-Departmental Working Group and Committee was included also on the Great Barrier Reef Marine Park Authority Planning Team for the Central Section. The purpose was to assist in zoning plan development by providing a day-to-day management perspective, and information on natural resources and usage available from Service staff already working in the area. This liaison also aimed to facilitate the transfer of information concerning the zoning back to Service staff, one important result being the compilation of this document. To try to make this liaison as effective as possible, I sought suggestions from Regional Service officers including District-based staff involved in island management, through verbal discussions and through circulation to staff of zoning documents along with written requests for feedback. Additionally, a meeting of Northern Regional staff and Great Barrier Reef Marine Park Authority officers was held in October 1985 to allow for substantial round-table discussion of the proposed zoning, with particular reference to complementary management and day-to-day management implications.

The involvement of a Regional Service representative in Queensland Inter-Departmental Working Group discussions and in GBRMPA Planning Section meetings may be considered, in retrospect, as successful and worthwhile, both in terms of providing some Service input into the Zoning Plan development, and in terms of transferring zoning information back to Service personnel. However, a few difficulties were experienced owing, for example,

to some lack of notice of meeting dates, and late arrival of zoning material from the Premier's Department including documents for discussion at Inter-Departmental meetings, and of other material for distribution to the public. In more general terms, at some stages the planning process seemed to proceed so rapidly with respect to certain issues that it was difficult to keep up to date with the latest developments, and to communicate these to other Service staff. Furthermore, it was not an easy task to present various suggestions of Regional Service staff at zoning meetings, and to promote these suggestions effectively in those cases when they clearly received little support from others participating in the meeting. It is hoped that staff who may be disappointed with some aspects of the final Zoning Plan will appreciate the difficulties of this liaison role.

CRITIQUE OF THE FINAL ZONING PLAN

General constraints to Zoning

To understand the rationale for the Central Section Zoning Plan, it is important to bear in mind some of the constraints placed upon the Great Barrier Reef Marine Park Authority, particularly in terms of limited knowledge of the natural environment, and the need to accommodate as far as possible a variety of existing uses and activities.

The task of zoning a vast multi-use marine park is made all the more difficult because our understanding of natural resources and environmental processes is often still all too rudimentary. Although a substantial and increasing amount of research has been carried out on coral reefs in the past 10 to 15 years, all too little is known about the functioning of reef systems and associated inter-reefal environments. In particular, the optimum size of zones in relation to their management objectives is not known, although the fact that many marine organisms have planktonic larval stages and some degree of dispersal indicates the need for a broad-scale approach to management. Moreover, despite the locations of major scientific establishments in the Townsville area from which some excellent marine research has been conducted, research has understandably been focused on a small number of representative and accessible reef areas. Thus, substantial

data on reef community structure are available for only a few of the coral reefs within the Central Section. More basic reef reconnaissance surveys have been conducted at a larger number of reefs, but these represent a relatively small proportion of the 600 or so reefs within the Section. Some information is available on inter-reefal habitats but this is similarly limited. Day-to-day management staff must therefore be aware that the locations of zones, and zone boundaries, cannot always be based on comprehensive environmental grounds.

The zoning is of course determined fundamentally by what seems appropriate, from available information, to achieve long-term conservation of the environment. However, it has not always been possible for the Great Barrier Reef Marine Park Authority to adhere to its own guidelines for zoning (see below) and some major exceptions are discussed in the next section. The finer details are often dictated by usage patterns and user demands, and/or by what may be expedient in terms of management implementation. And in some parts of the Central Section, especially in the more accessible and heavily used inshore areas, the final Zoning Plan probably reflects primarily the need to cater for a variety of existing and sometimes conflicting human activities.

It may be said that in order to fulfil the requirements of the Act, the Great Barrier Reef Marine Park Authority must provide some sort of "spectral balance" in the Zoning Plan. For example, some parts of the marine park are to be set aside for public appreciation, while others are to be preserved undisturbed (the "reservation" and "preservation" requirements). Thus some areas of Marine National Park including the more protected Marine National Park 'B', and of Preservation Zone, are called for. But the precise locations of these are not always selected because of any recognized outstanding natural characteristics, but sometimes because of what is practical and acceptable in terms of existing usage and user requirements, since reasonable uses must be allowed to continue.

Comments on adherence to Zoning criteria

Guidelines for the preparation of the Central Section Zoning Plan are

discussed in the Great Barrier Reef Marine Park Authority document Zoning the Central Section. The seven principal criteria are reproduced below:

General, Legislative and Management Requirements

1. The zoning plan should be as simple as practicable.
2. The plan should minimise the regulation of, and interference in, human activities, consistent with meeting the goal of providing for protection, wise use, appreciation and enjoyment of the Great Barrier Reef in perpetuity.
3. The plan should maximise consistency with existing zoning plans in terms of zone types and provisions.
4. The pattern of zones within the Section should avoid sudden transitions from highly protected areas to areas of relatively little protection. The concept of buffering should be applied so that highly protected zones are generally adjacent to, or surrounded by, zones which provide for moderate protection.
5. Single zonings should surround areas with a discrete geographic description eg an island or reef.
6. Zoning boundaries should be consistent and where possible should be described by geographical features (based on line of sight to aid identification in the field).
7. Zoning plans should complement current regulations and management practices under Queensland and Commonwealth legislation.

In many respects, the Zoning Plan does meet these guidelines, however, there are some important exceptions.

Firstly, in some areas the zoning is far from simple, and single zonings do not surround discrete entities (islands or reefs). Complexity of the Zoning

Plan is most evident in the more accessible and heavily used inshore areas where single zonings frequently do not surround the islands (although in some cases bays, rather than islands, have been used as zoning units). In the Whitsunday area in particular, the final Zoning Plan includes a combination of General Use zoning, interspersed with small and often discontinuous amounts of Marine National Park 'A' and 'B' around the major islands. Moreover, much of the Marine National Park 'B' zoning is confined to certain bays or to a 100 metre line, and not the 500 metre line generally used elsewhere for the zone boundary. As will be discussed further, the complexity of the zoning in such areas has arisen fundamentally from the need to cater for a range of activities, and in particular from pressure to allow for various extractive uses in areas of high recreational and/or conservation value.

Complementary protection adjacent to areas which are Queensland national parks has been somewhat limited. The Central Section contains a very substantial number of island national parks and several large coastal parks, and it has therefore been difficult to provide complementary zoning for the majority of them. Again, user demands dictated a compromise, particularly in view of unfavourable response to some proposed Marine National Park zoning from the public and from fisheries management agencies. The final Zoning Plan may be disappointing to Service staff in this regard, not only because of the reduced amount of complementary Marine National Park zoning compared to that included in the Draft Zoning Plan, but also because the combination of General Use and Marine National Park zoning around some capes and islands will probably be more difficult to implement than single complementary zonings.

In terms of zone types and provisions, the Central Section Zoning Plan conforms in many respects to previous Zoning Plan and Regulations. There are, however, several important changes. These include a broadening of the scope of extractive activities permitted within Marine National Park 'A' Zone to allow "limited crabbing" and "limited oyster gathering" (defined in the Zoning Plan and Regulations), and commercial bait netting. Another significant departure from the previous Zoning Plans is provision for "limited collecting" of fish, shells, and other invertebrates for

recreational purposes in General Use zones without a permit. The Regulations (ie Amendments) define the limit as possession of five of a species while in the marine park. The Service's view, detailed in the Queensland Government formal submission to the Great Barrier Reef Marine Park Authority on the Draft Zoning Plan, is that it would be premature to delete any permit requirements for recreational collecting, as the permit system may provide a useful management tool at least for some species. If further investigations should indicate that permits are unlikely to serve a useful role in management, it would be more appropriate to drop the permit requirement for recreational collecting in General Use zones on a Reef-wide basis following the review of the Capricornia Section Zoning Plan.

Finally, the concept of "buffering" (as described in Guideline No. 4) has been well applied in the case of most of the areas of Preservation Zone (except Eshelby Island), which have been enclosed within some Marine National Park 'B'. However, "buffering" (which is presumed to be of value in protecting the environment) has been much less consistently applied in other cases. A notable example is that much of the relatively highly protective Marine National Park 'B' zoning abuts directly onto the least protective General Use 'A' zoning.

Comments on considerations given to user groups in determining the final Zoning Plan

Some analysis of representations received following the first Public Participation Program is given in the document released to the public entitled Zoning the Central Section. Detailed analysis of representations and comments made in response to the Draft Zoning Plan are contained in the internal Great Barrier Reef Marine Park Authority documents Analysis of Representations Report and Report on Proposed Revision to the Draft Zoning Plan. These documents are included in the Attachments Set 1 and provide some very valuable information for day-to-day management staff. Service personnel are reminded that these are confidential documents and that they reflect the interpretations of the individual GBRMPA staff who compiled them but do not necessarily represent the views of the Authority.

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Included in the second series of Attachments are summaries of public meetings held by Great Barrier Reef Marine Park Authority staff during the two Public Participation Programs and copies of relevant field inspection reports. A list of names of those who made representations is also provided. Great Barrier Reef Marine Park Authority staff have agreed to supply further information relating to individual submissions or specific zoning issues upon request of Service staff, provided that the representations concerned are not confidential.

For effective management of the marine park, it is most important that day-to-day management staff be aware of the attitudes and requirements of all users. Effective interpretation of the Zoning Plan is dependent upon an understanding of the points of view of different types of users and visitors. As mentioned previously, two of the most significant uses, Reef-wide and especially in the Central Section, are commercial fishing and tourism. Because of their significance in terms of Zoning Plan development and subsequent park management, these two industries will be considered in somewhat more detail.

On November 8, 1986, the Townsville Daily Bulletin featured a major article on the Great Barrier Reef Marine Park and public involvement in its management. The article, which incidentally appeared as the Zoning Plan preparation for Central Section was virtually completed, included some particular references by the Great Barrier Reef Marine Park Authority Chairman, Mr Graham Kelleher, to the fishing and tourism industries, and an extract is therefore reproduced below:

Mr Kelleher sees one of the greatest threats to the marine park concept and community management of the reef as the attitude of the fishing industry and the government agencies that represent them.

"They are adopting the line they should not be affected by zoning of the marine park and should be able to fish and conduct the fisheries how they see fit", Mr Kelleher said.

"They would claim the rules shouldn't affect them.

"We recognise that the fishing industry is important but it is not more important than tourism to Australia economically."

The change in the fishing industry was a "matter of great concern" as the industry was becoming "rigid and antagonistic".

"For the first time they are refusing to negotiate", Mr Kelleher said.

"The marine park will be meaningless if the rules do not govern the fishing industries.

"It places the whole marine park concept in question.

"Unless the other interested groups support the marine park concept it could easily be in trouble."

The lack of active support from the tourist industry is also a disappointment for Mr Kelleher.

There is little doubt that there are some fundamental differences in approach between the Great Barrier Reef Marine Park Authority, and those bodies involved in commercial fisheries management including the Queensland Department of Primary Industries, the Queensland Fish Management Authority, and the Queensland Commercial Fishermen's Organization. While the views of these various Queensland government and non-government agencies and those of individual fishermen are not necessarily identical, a paper delivered by Tilbury of the Department of Primary Industries Fisheries Management Branch at the GBRMPPA Fringing Reef Workshop (held 1986) provides a good insight into the attitudes predominant among those involved in the management of Queensland fisheries. Tilbury's paper makes some valid criticisms of inconsistencies in permitted uses of the Great Barrier Reef Marine Park and perceived discrimination against commercial fishing in the Commonwealth legislation. The report illustrates fundamental differences in approach on several important issues, including:

- . the opposition of fisheries management organizations to the zoning philosophy inherent in the Great Barrier Reef Marine Park Authority legislation and subsequently adopted for Queensland marine park management;
- . the view of fisheries managers that the biota of reefs and inter-reefal areas are distinct, that the latter are not the responsibility of the Great Barrier Reef Marine Park Authority, and do not need to be included into the sort of integrated management which the Great Barrier Reef Marine Park Authority would consider appropriate for the conservation and management of the Great Barrier Reef region as a whole;
- . and the view that all matters related to management of fisheries in the Great Barrier Reef region should be administered by a single management organization.

Tilbury's paper also espouses the view that the Great Barrier Reef Marine Park Authority categorizes users as either takers or preservers. Moreover, he claims that the so-called preservers are themselves "exploiters", as their "desire ... to observe, in unlimited numbers, the environment in its undisturbed state" results in various "uncontrolled" impacts which are detrimental to the environment. At its extreme, the point of view so well expressed in Tilbury's paper suggests that the commercial fishing industry is unduly restricted by marine park zoning, and that non-extractive forms of use are unfairly favoured and anyway detrimental.

A contrasting opinion was expressed at the Fringing Reef Workshop by Roe et al of the consultants Cameron McNamara Pty Ltd, who have been involved in investigation and zoning of Queensland marine park areas adjacent to the Cairns Section, on behalf of the Premier's Department. In discussing the principal management issues, their paper concludes:

The key management issues relate to the apparent conflict between fishing, both commercial and recreational (amateur), conservation and preservation ... These are considered legitimate uses ... there is,

however, most support and interest for conservation of reef areas.

In defining areas and proposed zones ... the major issue has been fishing versus conservation. It is acknowledged that fishing is a legitimate commercial activity, for the benefit of the whole community, and that recreational fishing is very popular. However, the case invariably put is that if a fisherman is disadvantaged in any way, the proposal should be dropped.

Without taking any side in the fishing versus conservation issue, it would be fair to say that the views of the Department of Primary Industries and Queensland Fish Management Authority representatives at the Queensland Working Group and Inter-Departmental Committee meetings were strongly articulated; and that the Queensland Commercial Fishermen's Organization has at times been very definitive in its opposition to marine park zoning. While fishermen and fisheries managers may see the Central Section zoning as unnecessarily restrictive, in many instances proposed zone boundaries were amended, or protective downgraded or dropped altogether, to cater for the requirements of commercial fishermen. This is true for many inshore areas (eg Hinchinbrook Island, Magnetic Island, and the Whitsunday area) and for some offshore areas (including the dropping of the proposed inter-reefal Replenishment Areas), and the attempt to accommodate commercial fishing is undoubtedly a major factor contributing to the complexity of the final Zoning Plan in some areas. The definitions of some Zones have also been broadened to allow a wider range of commercial fishing activities.

In general, most user groups consider that their particular requirements are the most significant and are therefore likely to be disappointed with zoning that does not conform in all respects to their wishes. In the case of commercial fishing, resource maps printed for both Commonwealth and State marine park information documents (including source material supplied by the Queensland Fish Management Authority), indicate virtually the entire Central Section as being of high commercial value for one sort of fishery or another. In these circumstances, it would be impossible for the Great Barrier Reef Marine Park Authority to fulfil the reservation and preservation obligations of its legislation without disappointing at least

some fishermen.

The "lack of support" from the tourism industry referred to by Mr Kelleher is particularly surprising in view of the numerous resorts and tourist-oriented businesses operating in the Central Section, the substantial financial turnover involved, and the continuing expansion of this industry. Relatively few representations were received by the Great Barrier Reef Marine Park Authority from tourist resorts and charter operators following the first Public Participation Program, and fewer still in response to the Draft Zoning Plan (so few from tourist resorts and organizations that proper analysis of these representations was precluded). It is true that Great Barrier Reef Marine Park Authority officers did visit resorts and hold appropriate meetings during the Public Participation Programs, for general liaison purposes and to collect specific information on usage such as principal destinations of resort vessels. The lack of response from the tourist industry generally and resorts in particular suggests a disappointing apathy in the industry. Perhaps there has been a slightly complacent presumption especially on the part of resort management, that a marine park is bound to promote tourism interests, that resorts' requirements will therefore be accommodated, and that resort comment one way or the other will be superfluous. Even at the Queensland Working Group and Inter-Departmental Committee meetings, representation and promotion of the interests of one of the State's major industries was very low key, despite the acknowledged national and international significance of tourist destinations in the Central Section.

Despite the lack of definitive input from the tourist industry the Zoning Plan has been prepared with consideration given to the needs of tourists and tourist operators. Substantial amounts of Marine National Park 'A' zoning have been included in the Whitsunday area, in the Family Islands, and at Orpheus and Magnetic Islands, to provide for recreational activities including limited fishing in the vicinity of tourist resorts. The importance of certain midshelf reefs such as John Brewer Reef, Davies Reef, and Hardy and adjacent reefs, as major tourist destinations has also been recognized. Much more limited areas of Marine National Park 'B' provide in some fairly accessible areas for public appreciation free from extractive

activity, these locations including some key diving sites at the northern end of Hook Island.

The support and interest of the tourist industry at various levels will be required for effective management of the Section, and for appropriate revision of the zoning in response to changing needs of tourists and operators, when the Zoning Plan is eventually reviewed. An active input from resorts and charter operators will be to their own advantage, particularly if there emerges a need for more areas to be zoned for non-extractive appreciation, which as tourist visitation increases may become all the more necessary. While some tourists do wish to collect and spearfish, Marine National Park zoning is generally considered the most appropriate for most tourist activities, and for many the pleasure of viewing rather than taking is best accommodated by Marine National Park 'B', the equivalent of terrestrial national park. The extent of Marine National Park 'A' and 'B' zoning in some important tourist areas, especially in the Whitsunday Islands area, has certainly been limited because of pressure to cater for the requirements of fishermen, particularly commercial fishermen. If the amount of Marine National Park zoning needs in due course to be increased to accommodate expanding tourist usage, then tourist operators, especially resorts, should be prepared to promote more actively the requirements of their industry.

OVERVIEW OF MANAGEMENT IMPLICATIONS

Many of the overall implications arising from the Central Section Zoning Plan are those arising also in other previously zoned Sections of the Great Barrier Reef Marine Park. These include:

- that effective management of a large-scale, multiple-use marine park requires substantial interpretation and extension effort;
- the need for more information on the natural resources, usage patterns and acceptable limits in terms of human impact;
- problems associated with enforcing many aspects of the Zoning Plan and Regulations, for example locating Zone boundaries in the field, or the difficulty of detecting trawling breaches in zones where trawling is not permitted when breaches are most likely to occur at night;
- the constraints of conducting effective surface patrols, and even aerial surveillance, especially in the more remote parts of the marine park.

Certain management implications are more applicable to the Central Section, owing to the particular characteristics of the Section and/or the provisions of its Zoning Plan. Implications relating to the zoning of particular locations are considered in more detail in the location-by-location discussion of the Zoning Plan with special reference to the more protective zoning. In broader terms these could be summarized on a basis of "geography" in terms of which areas might be managed locally from each Service District, but for the purposes of this document they are considered primarily on an inshore and offshore basis.

As previously discussed, the Central Section lies adjacent to the largest population centre in the Great Barrier Reef region, and is very heavily used relative to other Sections of the marine park. In addition to major commercial fisheries, there is very substantial and increasing usage in terms of both organized tourism and private recreational activities. Most

activities (apart from commercial fishing) are concentrated along the more accessible inshore areas, the attraction of such areas being increased by the numerous islands of great scenic and recreational value. Managing this volume of visitor traffic so as to minimize its impact on the environment is no easy undertaking. The task becomes all the more challenging when the overall environmental management plan - the Zoning Plan - is in some respects a complicated one, arising from the need to provide environmental protection while allowing a range of human activities (some incompatible) to continue. Thus the higher accessibility and usage of the inshore parts of the Section, and the complex zoning in many of these areas, dictate that day-to-day management will need to focus particularly on these inshore areas. These areas, which contain substantial areas of Queensland Marine Park, include: the island and coastal areas in the northern part of Central Section, including destinations such as the Family Islands, Brook Islands, Hinchinbrook Island and the Palm Islands accessible from coastal centres such as Cardwell and Dungeness; Magnetic Island, and coastal locations close to Townsville including Cape Pallarenda and the Cape Cleveland area; the Bowling Green Bay and Upstart Bay areas; Edgecumbe Bay and islands such as Gloucester and Eshelby Island to the northwest of the main Whitsunday group; and the Whitsunday and Lindeman Islands.

The Service has already recognized the urgent need for detailed management planning and special management operations needed for many of the national park islands in these areas. This has led to the development of a major management plan for the Whitsunday Islands area, and subsequently to the (current) preparation of management plans for other island and coastal national park areas further north in the Central Section. Clearly, national park management in these island and coastal park areas will need to be closely integrated with the intensive marine park management effort also required in the locations. An early priority for day-to-day management of the Central Section will be the further development of programs, presumably on a District basis, for complementary management of the Great Barrier Reef Marine Park, and island national park areas, including schedules for routine patrols for public contact/surveillance/island maintenance purposes. Day-to-day management effort will focus on areas with Marine National Park, or yet more protective zoning, but complementary management programs will

need to be flexible, to adapt to changing patterns of usage and emergent environmental protection requirements. Needless to say, the greatest management effort in these inshore areas will need to be devoted to the Whitsunday area, (including subsequent updating of the island management plan) in view of the very high usage, concentration of national park islands, and complex marine park zoning plan. The geography and usage patterns of the Central Section certainly reinforce the need for sub-Regional management centres in the Districts at locations at the northern and southern parts of the Section (including of course the Cardwell, Ingham and Airlie Beach areas). The need for additional field bases will need to be closely monitored.

A number of locations further offshore will also require particular management effort, in terms of public contact, surveillance, enforcement, and monitoring. Among the more accessible middle shelf reefs zoned as Marine National Park 'A' or 'B' are those of known private recreational or commercial fishing interest, such as Trunk Reef and Stanley Reef, plus those with high tourist usage (some with permanently moored structures) such as John Brewer Reef, Wheeler Reef, Davies Reef, and the Hook/Hardy Reef area. All the other areas with protective zoning - Marine National Park 'A' or 'B' or Preservation Zone - will similarly require special management attention. Most significant are those areas now zoned as no fishing or no access which have been popular with commercial and/or recreational fishermen, and where the zoning is expected to be unpopular with at least some members of these user groups. Examples of such areas are Barnett Patches, the Faraday Reef to Yankee Reef group (with two reefs zoned Preservation Zones), and the Hunt Reef to Nixon Reef group (with Robertson Reefs as Preservation Zone). While these reef areas are reasonably accessible to commercial fishing vessels and charter boats, they are fairly far offshore and are much less readily covered by marine park staff patrol vessels or even by routine surveillance overflights. Satisfactory management of such areas will require a definite and credible surveillance presence, in addition to extension and interpretation effort. This will place considerable demands on day-to-day management staff and financial resources already heavily committed to the intensive management needed for inshore areas.

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Future closure of Replenishment Areas, and declaration of special management areas such as Reef Appreciation Areas, will require appropriate public contact and surveillance work by day-to-day management staff, probably demarcation by marker buoys or signs, and possibly some monitoring effort.

Other aspects of the Central Section Zoning Plan and the amended Regulations applying to the Section which may require particular attention include changes in requirements for collecting permits (not needed for recreational collecting in General Use zones in Central Section but still required in some other Sections), and other amendments to zone definitions such as the provisions for oyster gathering, crabbing and commercial bait netting in Marine National Park 'A' Zone. Enforcement of recreational collecting "bag limits" and interpretation of the altered Regulations in this respect will require some management effort, although of course the previous permit system would also have done. Most changes represent a reduction in restrictions or regulations applying to usage, so perhaps the main task will involve explaining such differences to park users who are familiar with the Zoning Plans for previously zoned Sections (presumably a minority of Central Section users).

It may be said that a Zoning Plan should ideally be prepared in the context of a clear indication of what day-to-day management resources will be available. This would ensure that implementation of the Zoning Plan would be practicable and feasible in terms of day-to-day management resources to be provided. Of course, the general scale of staffing levels and operational funding have been agreed upon, as shown in previous Three Year Rolling Programs, but the economic situation in Australia has declined since management of the first Section of the Great Barrier Reef Marine Park commenced. Thus some cutbacks in the Central Section budget have already had to be accommodated in terms of funding for interim management and an extended capital funding program so that expenditure can be spread out over a longer time period than initially anticipated. Fairly substantial amounts of Marine National Park 'B' and Preservation Zone offshore (while welcomed by Service Staff) and the complex zoning of some heavily used inshore areas are major management implications for deployment of day-to-day management

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resources. This situation serves to reinforce the need for emphasis on public contact aspects (especially extension) of day-to-day management, and the value of using volunteer staff in certain situations as has already been initiated for the Service information counter at the Great Barrier Reef Wonderland complex. Clearly, operators of major tourist programs to the reef, even though they will receive appropriate advice or instruction from the Great Barrier Reef Marine Park Authority and the Service, will need to run their own interpretive programs and employ their own interpretive staff.

OVERVIEW OF MONITORING REQUIREMENTS

The overall aims of monitoring of the Great Barrier Reef Marine Park are fundamentally as originally defined (for the Capricornia Section) in the Basis of Agreement between the Queensland and Commonwealth Governments.

- (a) to assess the well-being of biological components and the state of physical components of the Great Barrier Reef Marine Park;
- (b) to provide data for assessing the effectiveness of management and the efficacy of the Zoning Plan, Regulations, Management Guidelines and Operational Procedures;
- (c) to measure the use of, and impact on, the Great Barrier Reef Marine Park by user groups;
- (d) to assess the socio-economic impact of the Zoning Plan and day-to-day management on users of the Great Barrier Reef Marine Park and other outside users.

In this context, the Great Barrier Reef Marine Park Authority has compiled various monitoring "matrices" to examine comprehensively what needs to be monitored and what methods might be used. Considerable progress has now been made in the development of an overall monitoring program for the Great Barrier Reef Marine Park, and of course many research and monitoring projects relevant to marine park management have already been completed by the Great Barrier Reef Marine Park Authority, the Service, and research personnel in scientific research institutions.

A detailed, long-term monitoring program for the Central Section has yet to be drawn up. This will need to be developed collaboratively between the Great Barrier Reef Marine Park Authority and the Service, and to attempt to provide such a program would clearly be well beyond the scope of this document.

The present report does, however, indicate monitoring work of high priority

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arising from the Central Section Zoning Plan with emphasis on requirements relating to specific zoning provisions. It is anticipated that different aspects of monitoring will be undertaken by the Great Barrier Reef Marine Park Authority, researchers or consultants engaged to do such work through grants or contracts, and the Queensland National Parks and Wildlife Service. No attempt is made here to indicate which components of the marine park monitoring priorities identified would be undertaken by which organization, but clearly there are various monitoring projects which could most appropriately be carried out by the Service, particularly those which could conveniently be conducted during the course of routine surveillance and field patrols.

As discussed earlier, our knowledge of the natural environment is very imperfect, especially in the case of very complex ecosystems such as coral reefs. Far more data are required on the natural characteristics of the Great Barrier Reef and how it functions, and more information is needed also about human activities and their impact upon the marine park. Therefore, on the location-by-location account of the rationale for the more protective zoning, the general need for more information on natural features and human usage is repeated for almost every location. Monitoring of the "health" of the reef, and how people use its resources, are thus given high priority in the context of the monitoring requirements emerging from this Zoning Plan.

Among the most important target areas are those zoned as Marine National Park 'B' or Preservation Zone. Ideally, some assessment of the condition of the natural resources of these areas should have been made prior to the Zoning Plan coming into effect, but lack of resources has meant that many of these locations have not been closely investigated. Indeed, some such areas including ones zoned as Preservation Zone, have not apparently been examined at all in the context of zoning or management, thus in such cases there is not even a basic pre-Zoning Plan record of what features are to be protected. An early monitoring priority, which should be conducted during the first year of day-to-day management operations, must therefore be the basic but properly conducted reconnaissance of all areas with protective Marine National Park or Preservation Zone zoning, with emphasis on the Preservation Zones and those areas of Marine National Park for which there

is least information and/or at which usage is expected to be greatest.

Arising from this, it would be extremely worthwhile to compile a comprehensive register of all reefs and other areas in the Central Section for which resources and usage data have been collected, summarizing in particular the information most relevant to day-to-day management. Some valuable information is available in GBRMPA-funded survey reports, in reports and publications by scientists at the Australian Institute of Marine Science and James Cook University and other institutions, and in data bases compiled by the Service regarding, for example, national park islands. A priority for day-to-day management staff could therefore be the preparation of an up-to-date list of Central Section reefs for which relevant resource and usage data are available, compiled with appropriate input from the Great Barrier Reef Marine Park Authority, the Australian Institute of Marine Science, James Cook University, and others.

It is emphasized that while marine park monitoring may focus especially on locations with more protective zoning, other areas also require attention. The need for data on resource stocks and human activities at Replenishment Areas, now and during future closures, is acknowledged in the detailed account of the locations selected as potential Replenishment Areas. Very important also are those areas without special zoning which have been designated General Use 'A' or 'B' in the final Zoning Plan. Monitoring of natural features and of the types and levels of human activities will be required, especially where usage is already high and human activities may need to be more closely regulated in the future to avoid detrimental impact on the environment. Such General Use areas include most coastal and inshore areas and particularly tidal areas within Queensland marine park areas, plus the more accessible and popular midshelf reefs such as Britomart, Rib, and Old Reefs, and other midshelf reefs in the southern part of the Central Section.

Questions relating to the effectiveness of the Zoning Plan and its socio-economic impact on park users are probably less urgently in need of attention than the basic data on reef "health" and usage, which are clearly a high priority for initial monitoring work and on which this document has

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concentrated. Service staff will certainly be well placed to assist in monitoring Zoning Plan effectiveness and impact. It is to be expected that day-to-day management staff will have an important role to play in making recommendations for revisions to the Central Section Zoning Plan when it is in due course reviewed.

Finally, the Service has a clear mandate to manage the resources of national parks. Monitoring of national park flora and fauna with emphasis on fragile locations such as beach areas or species which may require special management attention such as nesting avifauna, is obviously a responsibility for the Service. Staff involved in maritime estate management will doubtless be making an important contribution to routine monitoring of island and coastal park areas, and some obvious priorities for monitoring of key elements of island national park resources have been indicated in the location-by-location account of the rationale for zoning. A more comprehensive island monitoring program for Central Section will need to be developed by the Service.

ANALYSIS OF THE CENTRAL SECTION ZONING PLAN

This analysis provides a general discussion of the locations of areas of General Use 'A' and General Use 'B' zones. More detailed information and comments are provided for those locations afforded more protective zoning, either as Marine National Park 'A', Marine National Park 'B', Scientific Research Zone, or Preservation Zone, with offshore areas being listed before the inshore areas.

For simplicity, the analysis refers basically to the Great Barrier Reef Marine Park - Central Section which covers a much larger area than the Queensland marine park within the Section. Most comments are applicable also to the Queensland marine park areas since they lie adjacent to the Commonwealth marine park; but the reader may need to refer to the Zoning Plan for the Queensland marine park areas within this Section (not yet available) and relevant Act on specific matters (such as Specified Areas where dogs may be allowed).

The following is a breakdown of the different areas covered by various zones within the Great Barrier Reef Marine Park - Central Section:

AREAS OF ZONES FOR CENTRAL SECTION ZONING PLAN				
Zone Type	No. Zones	No. Reefs/ Shoals	Area (sq.km)	Area % Secn.
GUA	1	16	57648	74.87
GUB	15	531	17096	22.20
MNPA	25	5	754	0.98
MNPB	23	32	1459	1.89
Pres.	5	5	43	0.06
Total Secn.	69	596	77000	100.00
Replenish.	14	10		

Note that Reef Appreciation Areas and other Special Management Areas are provided for in the Zoning Plan, but exact locations have not yet been finalized. Likely locations for Reef Appreciation Areas (which like the Zoning Plan require public input prior to their declaration) include John Brewer Reef, Bait Reef, Credlin Reef, Hook Reef, Black Island Reef and Hook Island (near underwater observatory).

General Use Zoning

As with previously zoned Sections, much of the area of the Central Section has been zoned as the least protected General Use 'A' Zone, providing for a wide variety of activities including trawling and commercial shipping operations. Much of the General Use 'B' zoning lies over, or adjacent to, reef areas which would often be foul ground and therefore be unsuitable for trawling operations. Indeed, if one compares the Zoning Plan map with one showing the principal trawling grounds, the General Use 'A' corresponds very well with existing prawn and scallop trawling areas (plus potential deep water trawling grounds beyond the outershelf reefs), while the General Use 'B' consists largely of generally untrawled or less significant trawling areas including the main aggregations of mid- and outer-shelf reefs. The shipping areas are of course located within the same areas, relatively free from navigational hazards such as reefs and shoals. The cynic might therefore be tempted to conclude that if most of the areas zoned as General Use 'B' are anyway unsuitable for trawling and major shipping - the major uses which are not permitted in this zone - then zoning here to exclude these activities is superfluous. Nevertheless, some areas of importance to shipping and trawling have been zoned as General Use 'B'. In those cases where major shipping traffic may be affected, defined shipping lanes have been identified in the Zoning Plan to allow major shipping (ie ships over 1500 tonnes) to pass through the area. Offshore General Use 'B' areas, while consisting chiefly of much foul ground, may yet include areas of actual or potential trawling interest, particularly for red spot and blue leg king prawns. Inshore areas zoned as General Use 'B', which certainly do include some existing banana and tiger prawn grounds have been zoned "no trawling", to protect areas considered to be significant for conservation or

some inter-reefal areas of seabed being kept free from the continued effects of trawling. The General Use 'B' transect connecting the Whitsunday area with the Hook/Hardy Reef complex is well located in that it extends between inshore and mid-shelf areas of very significant tourist and recreational usage. Although it does cover some trawlable grounds, it does not include trawling areas indicated by the fishery as being of any particular significance. Moreover, the boundaries of this transect were amended, on request of fisheries management representatives, from those given in the Draft Zoning Plan, to accommodate continued trawling in certain areas (eg southwest of Bait Reef).

The inter-reefal Replenishment Areas "boxes" offshore from the Palm Islands (originally proposed by researchers as a series of three parallel Replenishment Area transects each extending across the continental shelf) were abandoned in the final Zoning Plan. This was presumably in view of an adverse response from commercial fishermen and the Queensland Government and fisheries management agencies; and perhaps because of the unlikelihood of research into the effectiveness of these Replenishment Areas being conducted within the foreseeable future. However, as emphasized by Great Barrier Reef Marine Park Authority staff, the fact that this area is heavily trawled would seem to support the location of Replenishment Areas, which could be closed at a later date should evidence in favour of closure become available.

LOCATION: MOSS REEF TO DUNCAN REEF

ZONING: MNP'B'

Principal Natural Features:

- Sand cays (at Barnett Patches) with brown booby rookeries
- Moss Reef unusual "ribbon" reef in this area.

Principal Usage:

- Commercial line fishing and trolling
- Aquarium fish collecting for fish rarely found in other areas.

Principal Reasons for Final Zoning:

- Conservation of unusual reef types and associated cay areas.
- MNP'B' area offshore at far northern end of the Central Section.

Reason for Change from Draft Zoning (if applicable):

- MNP'B' extended to Moss Reef for conservation of unusual reef type.
- Draft Zoning of 18 - 021 and 18 - 022 was as MNP'B', but now changed to GU'B' as these two reefs important location for commercial line fishing.

Principal Management Implications:

- Need more usage data
- Need basic reef reconnaissance and data on cays especially re avifauna.
- Surveillance (especially aerial) in view of protective zoning.
- Seasonal checks on rookeries to ensure not disturbed.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct basic reef reconnaissance surveys
- Conduct seasonal monitoring of booby rookeries.

as nursery grounds, and/or to separate potentially conflicting human activities, for example to exclude trawling from areas where there is substantial recreational boating and fishing.

Special provision has been made in the Zoning Plan for Defence Areas because of existing defence training areas. These lie mostly over areas of General Use 'A' or 'B' Zone, although small areas of Marine National Park 'A' and 'B' are included.

Several locations originally zoned as General Use 'B' or as more highly protected zones, were eventually zoned only as General Use 'A' in the final Zoning Plan. As well as those areas specifically discussed in the location-by-location analysis of the zoning, these include Grassy Island Bay and Repulse Bay, where requests to allow continued commercial fishing and lack of substantial data to warrant higher protection resulted in the eventual General Use 'A' zoning. Dingo Beach, zoned in the Draft Zoning Plan as Marine National Park 'A', was similarly downgraded to General Use 'A'. There was some discussion and investigation of this area during the Zoning Plan development, and the Dingo Beach zoning issue was perhaps further complicated by the fact that the area in question is partly intertidal and as such is a Queensland Government responsibility. Justification for the final zoning is given in terms of lack of information to support claims of detrimental impacts of shell collecting (a GBRMPA-funded study of shell collecting including the Dingo Beach area has since been undertaken); and the closure to collecting of other important shelling areas in the Section such as Langford Island Reef and Black Island Reef (finally zoned as Marine National Park 'A').

There has been considerable support from scientific research and conservation standpoints for "cross shelf transects" within the Great Barrier Reef region, to provide protection within a larger management unit for inshore, mid- and outer-shelf reefs plus inter-reefal environments. Such a transect was included (as Marine National Park 'B' zone) in the Far Northern Section Zoning Plan, but met with a hostile reaction from various commercial fishermen's and fisheries management organizations. The Great Barrier Reef Marine Park Authority apparently still favours the concept of

Location-by-location analysis of areas with

more protective zoning

LOCATION: TRUNK REEF

ZONING: MNP'A'

Principal Natural Features:

- Midshelf reef.

Principal Usage:

- Spearfishing
- Recreational line fishing
- Commercial line fishing
- Some research.

Principal Reasons for Final Zoning:

- Provides MNP'A' for an accessible midshelf reef in northern part of Central Section.

Reason for Change from Draft Zoning (if applicable):

- Draft zoning was as Replenishment Area, but final zoning as MNP'A' instead of Britomart Reef. (Established recreational and commercial line fishing, also trolling, led to unfavourable public response to MNP'A' draft Zoning for Britomart Reef.)

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data.
- Surveillance (aerial and surface) to deter infringements.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct basic reef reconnaissance survey.

LOCATION: PITH AND BRAMBLE REEFS

ZONING: Replenishment Areas.

Principal Natural Features:

- Midshelf reefs (but Bramble Reef much closer inshore)
- Crown-of-Thorns damage at Bramble Reef.

Principal Usage:

- Bramble Reef
- Very high usage from Lucinda
 - Spearfishing
 - Recreational line fishing
 - Commercial line fishing
 - Commercial coral collecting
 - Some research
- Pith Reef
- Much further offshore, presumably commercial line fishing.

Principal Reasons for Final Zoning:

- Bramble Reef, instead of Trunk Reef, to complement Pith Reef as Replenishment Area in this part of the Section.

Reason for Change from Draft Zoning (if applicable):

- Public support for Replenishment Area at heavily used Bramble Reef, (and change from Trunk Reef (c.f.) which is now zoned MNP'A').

Principal Management Implications:

- Need more usage data.
- Publicity/surveillance/enforcement during future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Possible monitoring in relation to Crown-of-Thorns damage.
- Monitor usage and possibly also fished resource stocks in relation to future Replenishment Area closures.

LOCATION: NEEDLE REEF

ZONING: MNP'A'.

Principal Natural Features:

- Midshelf reef well offshore.

Principal Usage:

- Presumably some commercial line fishing and trolling.
- Possibly diving.

Principal Reasons for Final Zoning:

- Relatively little used reef well offshore (possible reef to be included in research on MNP'A' with and without previous spearfishing pressure).

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need basic usage data - Need reef reconnaissance data
- Surveillance (especially aerial) in view of MNP'A' Zoning.

Priority Monitoring Requirements:

- Conduct basic usage monitoring
- Conduct basic reef reconnaissance survey.

LOCATION: MYRMIDON REEF

ZONING: MNP'A' (to 500m).

Principal Natural Features:

- Outershelf reef, well offshore, noted for aesthetic values.
- Historic shipwreck "Foam", may eventually be removed.

Principal Usage:

- Research
- Gamefishing
- Commercial line fishing and trolling
- Recreational line fishing and trolling (especially from charter vessels).
- Diving

Principal Reasons for Final Zoning:

- Isolated outershelf reef close to edge of continental shelf.
- MNP'A' provides access to gamefishing and reduces enforcement problems.

Reason for Change From Draft Zoning (if applicable):

- Draft zoning was MNP'B' to reef edge, to try to accommodate pelagic fishing, but this did not provide adequate access to important game fishing areas adjacent to bommies, etc. Draft Zoning would have been difficult to enforce, so zoning changed to MNP'A' to 500m.

Principal Management Implications:

- Need more usage data.
- Surveillance (especially aerial) in view of MNP'A' Zoning.
- May require interpretation/extension in view of substantial and varied usage.

Priority Monitoring Requirements:

- Liaise with researchers, summarize basic reef survey data.
- Conduct basic usage monitoring.

LOCATION: JOHN BREWER REEF

ZONING: MNP 'A'

Principal Natural Features:

- Midshelf reef with well enclosed lagoon.
- Some Crown-of-Thorns damage (subtidal), some regeneration in 1987.

Principal Usage:

- Intensive tourist use (day trips plus site of Floating Hotel)
- Research

Principal Reasons for Final Zoning:

- MNP 'A' Zoning to cater for intensive tourist and recreational use.
- Will require Special Management Area.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Intensive tourist use will require substantial management input, including public contact.

Priority Monitoring Requirements:

- Conduct basic monitoring usage.
- Will require environmental monitoring program owing to Floating Hotel (conducted at proprietors' expense).
- Liaise with researchers, summarize basic reef survey data.

LOCATION: LODESTONE, HELIX AND KEEPER REEFS.

ZONING: Replenishment Areas.

Principal Natural Features:

- Midshelf reefs, very accessible
- Some previous Crown-of-Thorns damage.

Principal Usage:

- Recreational line fishing.
- Commercial line fishing.

Principal Reasons for Final Zoning:

- Suite of popular, fished reefs for rotational replenishment closure.

Reason for Change from Draft Zoning (if applicable):

- Not included in Draft Zoning Plan, but additional Replenishment Areas accessible to small as well as large boats, appropriate in the Townsville radius.

Principal Management Implications:

- Need basic usage data.
- Publicity/surveillance/enforcement during future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Monitor usage and possibly also fished resource stocks, in relation to future closures.

LOCATION: WHEELER REEF

ZONING: MNP'B'

Principal Natural Features:

- Small round reef
- Sand cay (unvegetated) (unusual in this Section)
- Substantial Crown-of-Thorns damage occurring.

Principal Usage:

- Diving
- Research

Principal Reasons for Final Zoning:

- Recreational and research use suitably accommodated by MNP'B'.
- Surround cay with MNP'B' for appropriate conservation.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need more usage data.
- Surveillance (aerial and surface) in view of MNP'B' Zoning.
- May require special interpretive input re diving usage.
- Proposed to be managed as a "No-development" reef.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Liaise with researchers, summarize available reef survey data.
- Conduct additional reef reconnaissance etc if required.

LOCATION: FARADAY REEF TO YANKEE REEF

- Including ARC REEF and 18 - 045

ZONING: MNP'B' with Preservation Zone at 18 - 070 (Arc Reef) and 18 - 045.

Principal Natural Features:

- Variety of mid- to outershelf reefs.

Principal Usage:

- Recreational line fishing, especially from charter vessels
- Commercial line fishing
- Diving
- Research

Principal Reasons for Final Zoning:

- MNP'B' to provide "buffer" from Preservation Zone and incorporate a variety of habitat types.
- Acceptable locations for some highly protected areas in the northern part of the Section.
- Provide substantial diving opportunities in MNP'B' areas free from extractive activities.

Reason for Change from Draft Zoning (if applicable):

- Shift from draft Zoning (which had Knife Reef as Preservation Zone and MNP'B' further to southeast) better accommodates established fishing activities in the area as a whole.

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data, especially for Preservation Zone.
- Surveillance (aerial and surface) in view of protective zoning.
- May require special interpretation/extension effort especially re preservation status.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct basic reef reconnaissance surveys.
- Liaise with researchers, summarize available reef survey data.
- Possibly establish some permanent benthic survey transects.

LOCATION: DAVIES REEF

ZONING: MNP 'A'

Principal Natural Features:

- Midshelf reef with well enclosed lagoon, and aesthetic drop-off.

Principal Usage:

- Research
- Tourism diving (established in mid-1987 as Reef World (Air Whitsunday) destination with permanently moored coral viewing vessel).
- Some recreational.

Principal Reasons for Final Zoning:

- MNP 'A' accommodates research and recreational activities including recreational fishing.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need more usage data.
- Surveillance, but principally liaison with tourist operators and researchers.
- Will need special interpretation/extension effort in view of heavy usage.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Liaise with researchers, summarize reef survey data.

LOCATION: BOWDEN, SHRIMP, AND PRAWN PLUS MID REEFS.

ZONING: Replenishment Areas

Principal Natural Features:

- Midshelf reefs
- History of Crown-of-Thorns damage.

Principal Usage:

- Diving (especially from Townsville)
 - Some recreational fishing also from charter vessels
 - Commercial line fishing
- (N.B. Sites for Crown-of-Thorns surveys).

Principal Reasons for Final Zoning:

- Suite of reefs with access from Townsville and Ayr areas, appropriate for rotational closure.

Reason for Change from Draft Zoning (if applicable):

- Additional reef (Prawn plus Mid) to complement series of Replenishment Areas.

Principal Management Implications:

- Need more usage data.
- Publicity/surveillance/enforcement during future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Monitor usage, and possibly also fished resource stocks in relation to future closures.
- Possibly monitor in relation to Crown-of-Thorns damage.

LOCATION: LION AND JAGUAR REEFS

ZONING: Replenishment Areas

Principal Natural Features:

- Outer reefs.

Principal Usage:

- Some commercial line fishing.

Principal Reasons for Final Zoning:

- Pair of Replenishment Areas well offshore, suitable for potential rotational closure (more probably for comparative research purposes rather than expected fishing pressure).

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Publicity/surveillance/enforcement during possible future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Monitor usage, and possibly also fished resource stocks in relation to possible closure.

(N.B. Some Crown-of-Thorns surveys in 1970's.)

LOCATION: STANLEY REEF

ZONING: MNP 'B'

Principal Natural Features:

- Midshelf Reef but relatively close inshore.
- Subject to influence of Burdekin River.
- Substantial recent Crown-of-Thorns damage.

Principal Usage:

- Recreational line fishing, especially from Ayr/Home Hill area.

Principal Reasons for Final Zoning:

- Provision of midshelf MNP 'B' reef in this middle portion of the Section.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was for MNP 'B' for Old Reef, especially in view of Historic Shipwreck "Guthenburg". Amended because of adverse reaction from local recreational and commercial line fishermen to closure of most accessible midshelf reef, and safety concern by Queensland Boating and Fisheries patrol that small boats would need to go beyond Old Reef for fishing.

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data.
- Surveillance (aerial and surface) in view of protective zoning.

Priority Monitoring Requirements:

- Conduct basic usage monitor.
- Conduct basic reef reconnaissance survey.
- Possibly monitor in relation to Crown-of-Thorns damage.

LOCATION: FAITH, HOPE, AND CHARITY REEFS.

ZONING: Replenishment Areas.

Principal Natural Features:

- Small midshelf reefs.

Principal Usage:

- Commercial line fishing.
- Some recreational fishing.
- Diving.

Principal Reasons for Final Zoning:

- Suite of accessible and relatively well used reefs in middle portion of Section, suitable for rotational closure.

Reason for Change from Draft Zoning (if applicable):

- Not included in draft zoning, but set of Replenishment Areas off Bowen considered appropriate in view of local fishing pressure.

Principal Management Implications:

- Publicity/surveillance/enforcement during future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Monitor usage, and possibly also fished resource stocks, in relation to future closures.

(N.B. Some previous Crown-of-Thorns surveys in 1970's and 80's.)

LOCATION: KANGAROO REEF

ZONING: MNP 'B'

Principal Natural Features:

- Midshelf reef.

Principal Usage:

- Commercial line fishing.

Principal Reasons for Final Zoning:

- Provides another MNP 'B' reef in this part of Central Section.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data.
- Surveillance (especially aerial) in view of protective zoning.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct reef reconnaissance survey.

LOCATION: LEOPARD REEF TO JACQUELINE REEF

ZONING: MNP'B' with Preservation Zone at Jacqueline Reef.

Principal Natural Features:

- Mid- and outershelf suite of reefs.

Principal Usage:

- Commercial line fishing.
- N.B. Jacqueline Reef claimed to be good anchorage.

Principal Reasons for Final Zoning:

- MNP'B' "buffer" surrounding Preservation Zone in acceptable location in middle portion of the Section.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data, especially for Preservation Zone.
- Surveillance (especially aerial) in view of protective zoning.
- May require special interpretation/extension effort especially re Jacqueline Reef.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct reef reconnaissance surveys.
- Possibly establish some permanent benthic transects.

LOCATION: LINE, OUBLIER, AND KNUCKLE REEFS.

ZONING: Replenishment Areas.

Principal Natural Features:

- Midshelf reefs.

Principal Usage:

- Commercial line fishing.
- Recreational line fishing, especially from charter vessels from the Airlie Beach/Shute Harbour area.

Principal Reasons for Final Zoning:

- Suite of midshelf reefs accessible from Airlie Beach and Hardy Reef areas, suitable for rotational closure as Replenishment Areas.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning included Line Reef and Black Reef East as the Replenishment Areas. However, Black Reef East dropped because such a large reef is considered to be "self protecting" [on what evidence?] and because Oublier and Knuckle Reefs more appropriate as Replenishment Areas in view of expected fishing pressure.

Principal Management Implications:

- Publicity/surveillance/enforcement during future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Monitor usage, and possibly also fished resource stocks, in relation to future closures.

LOCATION: HOOK, HARDY, AND BAIT REEFS.

ZONING: MNP'A', with MNP'B' for Hardy Reef.

Principal Natural Features:

- Midshelf reefs.
- Channels between reefs offer aesthetic drop-offs.

Principal Usage:

- Very intensive tourist use, especially of Hardy Reef, from Whitsunday area.
- Diving and snorkelling
- Reef walking.
- Recreational fishing (including from charter vessels).

Principal Reasons for Final Zoning:

- MNP to accommodate intensive tourist/recreational use.
- MNP'A' allows recreational fishing, while MNP'B' for Hardy Reef provides for non-extractive use at this popular diving destination.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning had Bait Reef as MNP'B'. Pressure from tourist/charter boat operators to allow fishing resulted in zoning amended to MNP'A'.

Principal Management Implications:

- Need basic data on usage and on reef communities.
- Whole area will need major interpretive effort, including input to development of underwater trail and reef-walking platform at Hardy Reef.
- Surveillance (aerial and surface) in view of protective zoning.
- N.B. A likely long-term management strategy would be to use Hardy Reef for developed tourism, Bait Reef for undeveloped tourism such as diving, with Hook Reef accommodating limited recreational fishing and some overflow of facilities from Hardy Reef.

Priority Monitoring Requirements:

- Conduct usage monitoring, including monitoring of fishing pressure.
- Conduct reef reconnaissance surveys.
- Should establish continued monitoring program for key sites to assess and control user impact (eg diving, reef walking, fishing).

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LOCATION: LATH REEF TO 19 - 159
- Including 19 - 151 and 19 - 152

ZONING: MNP'B', plus Preservation Zone (for 19 - 151 and 19 - 152)

Principal Natural Features:

- Mid- and outershelf reefs, well offshore.

Principal Usage:

- Commercial line fishing

Principal Reasons for Final Zoning:

- MNP'B' "buffer" to two Preservation Zones; most acceptable location for offshore Protective Zoning in this southern part of the Section.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning included Joist Reef in MNP'B', with Stucco Reef as the Preservation Zone. This was not popular with commercial line fishermen who use Stucco Reef as an anchorage and working base. Hence the shift in location of MNP'B' and Preservation Zone.

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data especially for Preservation Zones.
- Surveillance (especially aerial) in view of Protective Zoning.
- May require special interpretation/extension effort, especially re the two Preservation Zone reefs.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct basic reef reconnaissance surveys.
- Possibly establish some permanent benthic transects.

LOCATION: HUNT REEFS TO NIXON REEF
- INCLUDING ROBERTSON REEFS

ZONING: MNP 'B', with Preservation Zone (for Robertson Reefs (20-135))

Principal Natural Features:

- Midshelf reefs

Principal Usage:

- Recreational line fishing
- Commercial line fishing
- ~~Diving~~

(N.B. Substantial usage by Mackay-based users).

Principal Reasons for Final Zoning:

- MNP 'B' provides buffer to midshelf Preservation Zone in southern part of Central Section. (N.B. Most other Preservation Zones are much further offshore.) Zoning probably unpopular with some commercial and recreational line fishermen but alternative anchorages and fishing reefs are available in the vicinity.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need more usage data.
- Need basic reef reconnaissance data especially for Preservation Zone
- Substantial surveillance (aerial and surface) in view of the controversial Protective Zoning.
- Will also require concerted interpretation/extension effort (also for Mackay-based fishermen and divers).

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Conduct reef reconnaissance surveys.
- Possibly establish some permanent benthic transects.

LOCATION: Waters Around FAMILY ISLANDS

ZONING: GU'B', with MNP'A' for Dunk Island and Richards (Bedarra) Island.

Principal Natural Features:

- Fringing coral reefs variably developed.
- Bridled and black-naped terns may nest at Purtaboi Island, also Torresian Imperial pigeons.

Principal Usage:

- Intensive tourism (major resorts on both islands, plus day trippers and campers on Dunk Island).
- Recreational fishing and collecting
- Commercial bait netting.

Principal Reasons for Final Zoning:

- GU'B' to exclude trawling from tourist/recreational areas.
- MNP'A' consistent with tourist activities.
- MNP'A' complements "no spearfishing" regulations at Dunk Island under Queensland Fisheries Act, and national park status.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need usage data.
- Need basic data on reefs and benthic resources of Family Islands.
- Surveillance (surface and aerial) in view of Protective Zoning.
- Will need substantial interpretive effort re marine park zoning and national park management, especially in view of intensive tourist use.

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Conduct basic benthic reconnaissance surveys.
- Monitor heavily used areas of islands on special characteristics (eg avifauna at Purtaboi Island).

LOCATION: Waters Around BROOK ISLANDS

ZONING: MNP 'B'

Principal Natural Features:

- Well developed fringing reefs with considerable aesthetic appeal.
- Bird rookeries on islands (Torresian Imperial Pigeons, plus Little, Black-naped, and Bridled Terns).

Principal Usage:

- Recreational line fishing.
- Tourist/recreational visits to islands.

Principal Reasons for Final Zoning:

- Inshore fringing reefs worthy of MNP protection
- Complements national park status of most of the islands.

Reasons for Change from Draft Zoning (if applicable):

N.B. Eva Island originally zoned also as MNP 'B'. In view of popularity of Brook Islands and Eva Island for fishing, the latter changed to GU 'A' as it is considered of less environmental significance.

Principal Management Implications:

- Need more usage data.
- Need basic data on reefs and other benthic areas.
- Surveillance (aerial and surface) in view of MNP 'B' Zoning.
- Will need special interpretive effort in view of Protective Zoning and bird rookeries.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Continue bird monitoring especially of Torresian Imperial Pigeons.
- Summarize any existing reef data, conduct additional reef reconnaissance surveys as necessary.

LOCATION: Waters Around HINCHINBROOK ISLAND

ZONING: GU'A', with GU'B' in Hinchinbrook Channel, Missionary Bay, and adjacent to Goold Island with MNP'A' at Zoe Bay.

Principal Natural Features:

- Extensive mangrove systems in Hinchinbrook Channel and Missionary Bay.
- Seagrass areas of importance to dugong.
- Adjacent to national park island of outstanding aesthetic and wilderness value.

Principal Usage:

- Tourism (resort, day trippers, campers, etc)
- Intensive commercial fishing, including trawling, netting and crabbing.
- Intensive recreational use including crabbing and fishing.
- Research
- Shipping (to South at Lucinda)

Principal Reasons for Final Zoning:

- GU'B' to exclude trawling from more heavily used recreational areas and significant habitat.
- MNP'A' for Zoe Bay to complement important scenic recreational area.
- N.B. In view of existing extent of national park over mangroves, fish habitat reserve in Hinchinbrook Channel, and complex fisheries management regulations, zoning is relatively unprotective. However, some users would have preferred more Protective Zoning in view of the outstanding natural characteristics of the island and adjacent mangrove areas.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning of Missionary Bay as MNP'A' was intended to protect dugong from effects of netting, but key areas are not now thought to overlap. Liaison with researcher Helene Marsh and net fishermen has resulted in a research program to monitor dugong and possible impact of netting (dugong tagging, log books).
- Area of GU'B' in Rockingham Bay was reduced to permit trawling to the north of Cardwell.
- GU'B' boundary at south of Hinchinbrook Channel amended to allow commercial shipping.

Principal Management Implications:

- Management of marine areas will require substantial liaison with tourist operators, fishermen, and recreational users and with other

management agencies.

- Increasing tourist and recreational use of Hinchinbrook and Goold Islands will necessitate substantial interpretive effort and careful management of heavily used sites on the islands.
- N.B. Conflicts between commercial and recreational fishermen are supposed to be resolved by Queensland Fish Management Authority.

Priority Monitoring Requirements:

- Dugong (see above)
- Conduct usage monitoring (marine and island).
- Liaise with researchers (eg re dugong tagging, mangrove research), conduct additional basic reconnaissance as required.
- Monitor areas of potentially high human impact on island (eg at Ramsay Bay).

LOCATION: Waters Around PALM ISLANDS GROUP

ZONING: GU'B', with MNP'A' (around part of Great Palm Island and Orpheus Island) and MNP'B' (around remainder of Orpheus Island)

Principal Natural Features:

- Well developed, very diverse fringing coral reefs with considerable aesthetic appeal.
- Seabird rookeries (requires investigation).

Principal Usage:

- Traditional fishing and hunting (Aboriginal settlement on Great Palm Islands, with most other islands reserved for Aboriginal use).
- Commercial extractive activities, including trawling, trolling, netting, and collecting.
- Recreational line fishing
- Research (especially Orpheus Island)
- Tourism
- Diving
- Education
- Spearfishing

Principal Reasons for Final Zoning:

- GU'B' to exclude trawling close to islands and reefs
- MNP'A' around much of Great Palm Island limits extractive activity around this Aboriginal settlement.
- MNP'A' at Orpheus Island allows recreational fishing adjacent to the resort, while MNP'B' provides additional protection for research areas and complements national park.

Reason for Change from Draft Zoning (if applicable):

- Extent of MNP'A' around Great Palm Island to allow for existing and proposed commercial activities of residents (eg oyster farms).
- Extent of GU'B' to northeast reduced to allow for existing trawling activities.

Principal Management Implications:

- Need more usage data
- Surveillance (aerial and surface) in view of Protective Zoning
- Area will require considerable interpretation/extension effort (including liaison with Aboriginal community) in view of substantial and varied activities.

- Orpheus Island national park will require specific management of heavily used areas.

Priority Monitoring Requirements:

- Conduct usage monitoring, collate other relevant usage data.
- Liaise with researchers, summarize reef and benthic survey data.
- Conduct additional reef reconnaissance if required.

LOCATION: PANDORA REEF

ZONING: MNP 'B'

Principal Natural Features:

- Small but unusual inshore patch (ie not fringing) reef with comparatively substantial coral cover and diversity.
- Small cay of coral rubble, unusual in this Section.

Principal Usage:

- Commercial line fishing, trolling, and netting
- Research
- Recreational fishing
- Diving

Principal Reasons for Final Zoning:

- MNP 'B' Zoning accommodates research and protects unusual and well developed inshore patch reef.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Need more usage data
- Surveillance (aerial and surface) in view of MNP 'B' Zoning
- Will require some interpretation/extension in view of protective zoning, especially with commercial and recreational fishermen.

Priority Monitoring Requirements:

- Conduct monitoring of usage
- Liaise with researchers, summarize existing reef resource data.

LOCATION: Waters Around HERALD and ACHERON ISLANDS

ZONING: Replenishment Areas

Principal Natural Features:

- Inshore fringing reef areas.

Principal Usage:

- Recreational line fishing and trolling
- Netting
- Diving
- In Defence Area

Principal Reasons for Final Zoning:

- Pair of accessible reef areas quite close to Townsville, very appropriate for rotational closure in view of fishing pressure.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Publicity/surveillance/enforcement during future closure of Replenishment Areas.

Priority Monitoring Requirements:

- Conduct monitoring of usage and possibly also of fished resource stocks, in relation to future closures.
- Consider conducting basic reef reconnaissance surveys.

LOCATION: Waters Around MAGNETIC ISLAND

ZONING: GU'A' with MNP'A' (at Florence Bay and Radical Bay) and MNP'B' (at Balding Bay and Geoffrey Bay, and eastern part of Five Beach Bay)

Principal Natural Features:

- Variably developed fringing reefs (best developed at Geoffrey Bay)
- Significant land, water and seabird nesting areas on Magnetic Island (much of which is national park)

Principal Usage: (Magnetic Island generally)

- Tourism
- Recreational line fishing
- Commercial fishing including netting, line fishing, trolling, and trawling offshore.
- Educational activities.
- Diving and reef walking.
- Research
- Government shark netting.

Principal Reasons for Final Zoning:

- Much GU'A' to cater for existing extractive activities.
- MNP'A' at Florence Bay, Radical Bay, and eastern end of Five Beach Bay to allow limited recreational fishing.
- MNP'B' provides greater protection for Balding Bay as another MNP'B' area, and Geoffrey Bay, in view of substantial fringing reef of recreational/educational/research value.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning of MNP'A' for whole of Five Beach Bay was changed to allow commercial netting and trawling in the western half, with MNP'B' to protect fringing reef areas which are anyway best developed at the eastern side.
- Radical Bay originally zoned as MNP'B' in draft Zoning Plan, but amended to MNP'A' to accommodate bait netting and recreational fishing.
- Draft Zoning of MNP'B' removed from Middle Reef due to unfavourable response from recreational fishermen and difficulty of enforcement at ill-defined reef.

Principal Management Implications:

- Will require very substantial interpretation/extension effort in view of heavy and diverse usage.

- Establish special interpretive aids (eg underwater trail at Geoffrey Bay) probably in conjunction with island national park management.
- Surveillance (especially surface) at areas with protective zoning.
- Zone boundaries are largely line-of-sight but marker buoys may well be appropriate to delineate MNP Zoning.

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Liaise with researchers, summarize available reef survey data, conduct additional reef reconnaissance surveys if required (eg at Five Beach Bay).

LOCATION: CAPE PALLARENDA

ZONING: GU'A' and MNP'A'.

Principal Natural Features:

- Extensive sand and mud flats (dry at low tide) off rocky headland.
- Recreational area very near to Townsville and close to environmental park areas.

Principal Usage:

- Recreational usage, including sailing, line fishing.
- Commercial fishing, eg netting and trawling.

Principal Reasons for Final Zoning:

- GU'A' leaves much of the area open to commercial fishing, while MNP'A' excludes commercial fishing activity and provides greater protection in the main recreational area.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning had the south-eastern border of the MNP'A' extending towards Kissing Point and far beyond the main focus of recreational activity at Pallarenda.
- Western boundary of MNP'A' originally extended to Bohle River but reduced to Shelly Creek following consultation with QCFO and commercial fishermen. Main recreational area still covered by MNP'A'.

Principal Management Implications:

- Will need some interpretation/extension and signage re southern and western boundaries of MNP'A', (but the 500m line will be impossible to demarcate).
- Establish interpretive aids (eg pamphlets) for recreational users, perhaps in combination with other interpretive activities.

Priority Monitoring Requirements:

- Could monitor usage, probably in conjunction with program to monitor use of environmental park areas.
- Consider basic monitoring of biological communities on intertidal flats.

LOCATION: Eastern Side of CAPE CLEVELAND.

ZONING: GU'A', with MNP'A' and Scientific Research Zone.

Principal Natural Features:

- Rocky headlands with seagrass and mangrove areas.

Principal Usage:

- Commercial fishing including trawling and netting.
- Recreational line fishing
- Spearfishing.
- Research (adjacent to Australian Institute of Marine Science).

Principal Reasons for Final Zoning:

- GU'A' accommodates existing fishing and spearfishing.
- MNP'A' provides more protective zoning for attractive recreational area in vicinity of national park.
- Scientific Research Zone provides small undisturbed research area.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was for a much greater extent of MNP'A', but this was reduced following unfavourable response from fishermen (including trawlers) and spearfishermen.

Principal Management Implications:

- In view of Protective Zoning some surveillance (especially surface) will be required. There will also need to be substantial liaison with commercial and recreational fishermen, spearfishermen, and researchers. A considerable interpretive effort is likely to be required in view of expected increased use of the area by Townsville-based park users. Signage may be appropriate for SRZ.

Priority Monitoring Requirements:

- Liaise with researchers, summarize basic benthic resource data.
- Conduct basic usage monitoring.

LOCATION: Eastern Side of CAPE BOWLING GREEN.

ZONING: GU'A' and MNP'A'

Principal Natural Features:

- Low sandy cape with extensive sand- and mud-flat areas.
- Seabird nesting (including possibly little terns) on cape.

Principal Usage:

- Commercial trawling and netting.
 - Recreational fishing.
- (N.B. Important gamefishing area just offshore from here).

Principal Reasons for Final Zoning:

- Key areas left open for fishing at northern end of cape, while MNP'A' provides some protective complementary Zoning adjacent to cape.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was for MNP'A' down entire eastern side of Cape Bowling Green. Reduced to allow commercial fishing especially trawling to continue next to northern end of cape.

Principal Management Implications:

- Need more usage data.
- Surveillance (aerial and surface) in view of Protective Zoning.
- Will require some interpretation/extension effort, especially with commercial fishermen re MNP'A' boundary (but 500m line will be virtually impossible to demarcate).
- Some management of biological communities - probably the Cape itself is the highest priority - in co-operation with other agencies.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Monitoring, especially of avifauna, on cape.

LOCATION: "YONGALA" HISTORIC SHIPWRECK

ZONING: MNP 'B' to 500m around wreck.

Principal Natural Features:

- Historic shipwreck of "Yongala" sunk in soft-bottom area supports varied benthic fauna including corals and soft corals, and abundant fish life.
- Interesting biologically in that fauna includes species characteristic of midshelf reef areas, as well as those more typical of inshore waters.

Principal Usage:

- Diving.

Principal Reasons for Final Zoning:

- Complements historic shipwreck protection and provides added protection by excluding extractive activities in 500m radius.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Surveillance (especially aerial) in view of Protective Zoning.
- Some interpretation/extension effort to remind people of no-fishing (great temptation to fish or spearfish in view of abundant fish life).
- May require measures to reduce diver impact on wreck and fauna.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Liaise with researchers and museum, collate existing biological data, and establish basic monitoring program, especially in view of possible inadvertant damage (eg by divers holding on in strong current).

LOCATION: CAPE UPSTART AREA

ZONING: GU'A', with GU'B' in part of Upstart Bay and MNP'A' on western part of Cape.

Principal Natural Features:

- Rocky cape.
- Extensive seagrass-areas in Upstart Bay (important prawn nursery grounds).

Principal Usage:

- Spearfishing
 - Commercial fishing including trawling
 - Recreational line fishing.
 - Diving
- (N.B. Some conflict, especially of line vs. spearfishing).

Principal Reasons for Final Zoning:

- GU'B' to exclude trawling from important seagrass area in Upstart Bay.
- MNP'A' to provide some area for recreation including line fishing without spearfishing.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning included MNP'A' around most of Cape, complementary to national park. Reduced to allow various fishing to continue, but especially because of unfavourable reaction from spearfishermen to draft zoning.

Principal Management Implications:

- Need more usage data.
- Surveillance (aerial and surface) in view of Protective Zoning.
- Will require some interpretation/extension effort with users, especially in view of previous conflicts of activities.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Some monitoring of seagrass beds and other benthic communities would be highly appropriate - liaise with researchers.

LOCATION: Waters Around HOLBOURNE ISLAND.

ZONING: MNP 'A'

Principal Natural Features:

- Fringing coral reef, quite well developed.
- Seagull colony, also Bridled and Black-naped terns nesting, plus Brown booby roosting site.
- Extensive recent Crown-of-Thorne damage.

Principal Usage:

- Recreational line fishing.
- Commercial trolling.
- Diving.

Principal Reasons for Final Zoning:

- MNP 'A' Zoning affords some Protective and Complementary Zoning, but allows trolling and recreational line fishing to continue.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was for MNP 'B' but amended in view of unfavourable reactions from commercial troll fishermen and recreational fishermen.

Principal Management Implications:

- Need more usage data.
 - Surveillance (especially aerial, also surface).
 - Some interpretation/extension in view of MNP 'A' status.
- (N.B. Experimental control being conducted of Crown-of-Thorns starfish.)

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Collate existing data on reef and benthic resources, conduct additional basic reconnaissance if necessary.
- Seasonal monitoring of avifauna.

LOCATION: EDGE CUMBE BAY

ZONING: GU'A' and GU'B'.

Principal Natural Features:

- Enclosed bay which provides Banana prawn habitat and includes some seagrass areas.

Principal Usage:

- Trawling
- Recreational line fishing.

Principal Reasons for Final Zoning:

- This Zoning protects part of the bay from trawling and complements QFMA trawl gear restriction area.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning had slightly different boundary for GU'B' but this was amended to conform with some existing trawling restrictions.

Principal Management Implications:

- Need more usage data.
- Some surveillance (aerial and surface) especially re no-trawl boundary.
- Some interpretation/extension effort especially with commercial fishermen.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Liaise with researchers, especially re basic monitoring of seagrass areas.

LOCATION: Waters Around GLOUCESTER ISLAND

ZONING: MNP'A'

Principal Natural Features:

- ?Extent of fringing coral reef development
- High island with scenic value.

Principal Usage:

- Recreational line fishing.
- Diving.
- Bait netting.

Principal Reasons for Final Zoning:

- Complementary Zoning for island national park.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was as GU'B'. Amended to MNP'A' to provide, overall, some more Zoning complementary to national park islands.

Principal Management Implications:

- Need more usage data.
- Need benthic reconnaissance data.
- Surveillance (aerial and surface) in view of Protective Zoning.
- Some interpretation/extension effort especially re no commercial fishing.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Conduct basic benthic reconnaissance survey.

LOCATION: ESKELBY ISLAND

ZONING: Preservation Zone

Principal Natural Features:

- High island (Commonwealth) with important rookeries for several seabird species including bridled terns and crested terns.
- Substantial fringing coral reef with high aesthetic appeal.

Principal Usage:

- Recreational line fishing.
- Trolling.
- Diving.

Principal Reasons for Final Zoning:

- Well developed fringing reef very appropriate for Zoning as an Inshore Preservation Zone (only Preservation Zone so close inshore in this Section).
- Suitable for this highly Protective Zoning, an isolated island, and Commonwealth property.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Surveillance (aerial and surface) in view of highly Protective Zoning.
- Will require special interpretation/extension effort in view of accessible location of this Preservation Zone. Possibly install marker buoys to indicate "No Entry".
- Liaise with Department of Transport re lighthouse servicing.
- Possible weed eradication program.

N.B. Principal opposition to draft PZ Zoning was from recreational line - and troll fishermen.

Priority Monitoring Requirements:

- Seasonal monitoring of avifauna.
- Establish permanent benthic monitoring transect.
- Close watch re possible Crown-of-Thorns entry into area.
- Continued basic monitoring of vegetation.

LOCATION: Waters Around DOUBLE CONE ISLAND

ZONING: MNP'A'

Principal Natural Features:

- Fringing coral reefs.
- Island (national park) has major Torresian Imperial Pigeon colony, also seagull colony.

Principal Usage:

- Trolling and commercial bait netting.
- Recreational line fishing.
- Diving.

Principal Reasons for Final Zoning:

- MNP'A' provides protection for another fringing coral reef in the area, and complements island national park, while allowing trolling and some other fishing to continue.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was for MNP'B', but amended to MNP'A' to allow trolling and limited demersal fishing.

Principal Management Implications:

- Need more usage data.
- Surveillance (aerial and surface) in view of MNP'A' Zoning.
- Will require some interpretation/extension effort because of fishing restrictions.
- Consideration of Reef Appreciation Area is not currently a high priority.

Priority Monitoring Requirements:

- Conduct basic usage monitoring.
- Collate existing reef reconnaissance data, conduct additional basic reconnaissance as required.
- Seasonal monitoring of avifauna.

LOCATION: Waters Around HOOK, HAYMAN, LANGFORD and BLACK ISLANDS

ZONING: MNP 'A' around Hayman, Langford, Black Islands and at Saba Bay, Nara Inlet and to north-west of Hook Island, plus MNP 'B' at northern end of Hook Island.

Principal Natural Features:

- Area includes some well developed fringing and patch coral reefs, some with considerable aesthetic appeal.
- Inlets provide some excellent anchorages.
- Islands have great scenic appeal, most are national parks (not Hayman Island). Raptorial nesting areas.

Principal Usage:

- Intensive tourist use (major resort on Hayman Island, minor resort and underwater observatory at Hook Island, semi-submersible at Black Island, and day trip use of all islands).
- Yachting
- Diving
- Trolling and other commercial fishing including bait netting.
- Shell collecting
- Recreational fishing
- Recreational use of national park islands.

Principal Reasons for Final Zoning:

- MNP 'A' areas provide some protection and are most appropriate for recreational use with limited fishing permitted.
- MNP 'B' Zoning affords greater protection for key diving sites around the Butterfly Bay area.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning had Langford Island and Black Island Reefs as Replenishment Areas but zoning upgraded in view of increasing tourist use of these reefs - but MNP then reduced elsewhere around Hook Island.
- Draft Zoning of all of the eastern side of Hook Island was dropped (except MNP 'A' at Saba Bay) because of unfavourable reaction to such Protective Zoning from commercial and recreational fishermen organizations and individuals, spearfishermen, etc.

Principal Management Implications:

- Entire Whitsunday Islands area will require very intensive management (see earlier discussion).
- Special surveillance and demarcation of MNP Zoning around Hook Island,

- especially the MNP'B' Zoning, will probably be required.
- Reef Appreciation Area may be considered for Black Island and for area near underwater observatory at Hook Island.

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Collate existing benthic survey data, conduct additional reef/benthic reconnaissance as required.
- Monitor areas of high human impact on national park islands.

LOCATION: Waters Around WHITSUNDAY ISLAND plus HASLEWOOD, LUPTON, and HAMILTON ISLANDS.

ZONING: GU'B'; with MNP'A' around south-eastern part of Whitsunday Island extending to part of Haslewood Island and to Hamilton Island, also in the Cid Harbour and Henning Island area; plus MNP'B' to 100m only around eastern side of Haslewood Island and Lupton Island.

Principal Natural Features:

- Some development of fringing reefs, with unusually large reef flat developed between Haslewood and Lupton Islands.
- Some excellent anchorages in sheltered bays.
- Islands are very scenic and most are national parks (not Hamilton Island), and include outstanding silica sand beach and flats at Whitehaven, and high conservation value of Haslewood and Lupton Islands. Raptorial nesting areas.

Principal Usage:

- Intensive tourist use (major resort on Hamilton Island).
- Yachting
- Camping
- Day trip use of islands
- Commercial fishing including gill netting, bait netting and trolling.
- Recreational fishing and spearfishing
- Diving
- Shell collecting.

Principal Reasons for Final Zoning:

- Final Zoning provides MNP'A' status for key recreational areas including Cid Harbour, Whitehaven Bay and Hamilton Island, with some greater MNP'B' protection for part of Haslewood and Lupton Islands, while leaving some of the more important fishing areas open to commercial or recreational fishing.

Reason for Change from Draft Zoning (if applicable):

- The Draft Zoning Plan provided MNP'A' Zoning around all of Whitsunday Island, with MNP'B' all around Haslewood and Lupton Islands. This was reduced because of pressure from QFMA and DPI, and the recreational fishing council, to leave more areas open to fishing.

Principal Management Implications:

- Entire Whitsunday Islands area will require very intensive management

- (see earlier discussion) including special management programs for very heavily used areas such as Cid Harbour and Whitehaven Beach.
- Special surveillance and interpretation/extension effort will be required in relation to the 100m boundary of MNP'B' Zoning.

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Collate existing benthic survey data, conduct additional reef/benthic reconnaissance and monitoring as appropriate and particularly of Haslewood and Lupton area.
- Consider establishing permanent benthic monitoring transects at Haslewood/Lupton.
- Monitor areas of high human impact such as Whitehaven Beach.

LOCATION: Waters Around BORDER ISLAND.

ZONING: MNP'B' to 100m.

Principal Natural Features:

- Outer Whitsunday area island with some fringing coral reef with relatively clearer waters.

Principal Usage:

- Diving
- Trolling
- Recreational line fishing.

Principal Reasons for Final Zoning:

- MNP'B' Zoning provides suitable protection for an increasingly popular diving area and provides Complementary Zoning to national park. Deloraine Island (GU'B') provides an alternative fishing location in this area.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was as GU'B'. This was upgraded to MNP'B' in view of use of the area for diving, and perhaps also to provide some more MNP'B' Zoning in view of the reduced amount of MNP'A' and 'B' elsewhere in the Whitsundays in the final Zoning Plan.

Principal Management Implications:

- Entire Whitsunday Islands area will require some intensive management (see earlier discussion)
- Special surveillance and interpretation/extension effort, plus signage, will be required in view of the Protective Zoning and very limited extent of MNP'B' boundary.

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Collate existing benthic survey data, conduct additional monitoring especially at main diving areas.
- Consider establishing permanent benthic monitoring transects.
- Monitor areas of principal visitor impact on the island.

LOCATION: Waters Around THE MOLLE GROUP

ZONING: MNP'A'

Principal Natural Features:

- Inshore islands of the Whitsunday group
- Variably developed fringing coral reefs.

Principal Usage:

- Intensive tourist use (two resorts)
- Camping and day trip visitors
- Yachting
- Some trolling and recreational line fishing
- Diving

Principal Reasons for Final Zoning:

- MNP'A' provides protection for intensively used tourist area, while still allowing limited fishing. Complementary Zoning for national park areas.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Entire Whitsunday Islands area will require very intensive management (see earlier discussion)
- Surveillance (especially surface) and interpretation/extension in view of MNP'A' status.

Priority Monitoring Requirements:

- Conduct usage monitoring
- Collate existing reef/benthic survey data
- Conduct additional benthic reconnaissance as necessary
- Monitor areas of high human impact within national park.

LOCATION: Waters Around LONG ISLAND

ZONING: MNP'A'

Principal Natural Features:

- Inshore island in the Whitsunday group
- Only very limited development of fringing reef areas.

Principal Usage:

- Very intensive tourist use (two resorts)
- Day trips
- Yachting
- Some recreational line fishing

Principal Reasons for Final Zoning:

- MNP'A' to provide some protection for fundamentally recreational area.

Reason for Change from Draft Zoning (if applicable):

Principal Management Implications:

- Entire Whitsunday Islands area will require very intensive management (see earlier discussion).
- Surveillance (especially surface) plus some interpretation/extension effort in view of MNP'A' status.

Priority Monitoring Requirements:

- Conduct usage monitoring.
- Collate existing benthic survey data, conduct additional benthic reconnaissance if required.

LOCATION: Waters Of SHUTE HARBOUR AREA

ZONING: GU'A' and GU'B' with Shute Island as MNP'A'.

Principal Natural Features:

- Some fringing coral reef adjacent to Shute Island
- Island is Torresian Imperial Pigeon rookery.

Principal Usage:

- Harbour in bay
- Possibly some recreational line fishing, but other usage is mainly recreational use of islands.

Principal Reasons for Final Zoning:

- Most of Whitsunday area is GU'B', but inner area of this bay zoned as GU'A' in view of harbour and expected expansion of harbour facilities.
- MNP'A' provides easily accessible MNP area at Shute Island, plus Complementary Zoning of national park island.

Reason for Change from Draft Zoning (if applicable):

- Draft Zoning was for GU'B' throughout Shute Harbour but amended in view of above considerations.

Principal Management Implications:

- Entire Whitsunday Islands area will require very intensive management (see earlier discussion).
- Surveillance (surface) plus some interpretation/extension, principally re MNP'A' Zoning.

Priority Monitoring Requirements:

- Conduct usage monitoring
- Collate existing benthic resource data, conduct additional reconnaissance if required.
- Monitor avifauna at Shute Island.

LOCATION: Waters Around THE LINDEMAN ISLAND GROUP

ZONING: GU'B', plus MNP'A' around Lindeman and Seaforth Islands and Spitfire Rock.

Principal Natural Features:

- Some fringing coral reef developed around some islands (eg Lindeman and Thomas Islands) but not around others (eg Shaw Island).

Principal Usage:

- Substantial tourist use (resort on Lindeman Island)
- Yachting
- Day trips and camping
- Diving
- Shell collecting
- Spearfishing
- Trolling and recreational line fishing.

Principal Reasons for Final Zoning:

- MNP'A' areas appropriate for recreational emphasis while allowing limited fishing.
- GU'B' to exclude trawling from between islands.

Reason for Change from Draft Zoning (if applicable):

- Extent of GU'B' Zone (which in Draft Zoning Plan was continuous with that around the main Whitsunday group) later reduced to allow trawling to continue to the north of Lindeman Island.

Principal Management Implications:

- Entire Whitsunday Islands area will require very intensive management (see earlier discussion)
- Surveillance (aerial and surface) in view of Protective Zoning
- Will require some interpretation/extension effort re MNP'A' areas.
- Need more usage data.

Priority Monitoring Requirements:

- Conduct usage monitoring
- Collate existing benthic survey data, conduct additional benthic monitoring as required especially adjacent to Lindeman and Seaforth Islands.

LOCATION: Waters Around COW AND CALF ISLANDS.

ZONING: MNP'B'.

Principal Natural Features:

- Relatively well developed fringing reefs very close to mainland (unusual in Central Section)
- Apparently support substantial amount of fish (including fished species).

Principal Usage:

- Some recreational line fishing
- Apparently little used.

Principal Reasons for Final Zoning:

- Provides protection for reef areas unusually close inshore.

Reason for Change from Draft Zoning (if applicable):

- Originally zoned as GU'B', but attention only subsequently drawn to conservation interest of these fringing reefs.

Principal Management Implications:

- Need basic usage data.
- Surveillance (surface and aerial) in view of Protective Zoning
- Will need some interpretation/extension effort, and possibly signage, in view of MNP'B' status.

Priority Monitoring Requirements:

- Conduct usage monitoring
- Collate existing reef reconnaissance data, conduct additional surveys as required
- Consider establishing permanent benthic monitoring transects.

BIBLIOGRAPHY

References cited in this report and other relevant material not included in the attachments.

- . Fringing Reef Workshop, GBRMPA Workshop Series No. 9 (1987) including papers by

Tilbury, J.C., "An Overview of Fishing Activities in the Great Barrier Reef Region: Recreational and Commercial"

Roe, P.A., P.R. Zahnleiter, and R.F. Zigterman, "Management Issues Identified from Assessment of State Proposals for Marine Park Declaration"

also

Driml, S., "Tourist Development and Fringing Reefs"

Barnett, B., "Shell Collecting on the Great Barrier Reef - First Impressions"

Colfelt, D., "Fringing Reefs: The Tourist's View?"

Dinesen, Z., "Key Issues for Day - to - Day Management of Fringing Reef Areas in the Central Section of the Great Barrier Reef Marine Park"

and other papers.

- . Whitsunday Islands National Park Management Plan. (1986). Q.NPWS - P. Lavarack
- . Valentine, P.S., T. Graham, and L. Darkin, An Investigation of the Visitor Impact on the Whitsunday Islands National Parks. (May 1985). Report submitted to Q.NPWS.
- . Great Barrier Reef Resource Inventory - Whitsunday Section 20° 00' S - 22° 30' S (March 1983). Australian Littoral Society, Outridge, P., D. Tarte, P. Shanco, J. Gall, and E. Hegerl. 3 Vols.
- . Colfelt, D. (1985), "100 Magic Miles of the Great Barrier Reef - The Whitsunday Islands". Windward Publications, Sydney.

ATTACHMENTS SET 1

REFERENCES ESSENTIAL TO THE READING OF THIS DOCUMENT.

- . Central Section Zoning Information (Wallet)
including Zoning Plan and Guide for Users maps.
- . Central Section Zoning Information - Introduction (pamphlet)
- . Central Section Information Summary
- . Central Section Zoning Plan - Permissible Activities (list)
- . Central Section Zoning Plan for public review
(Draft Zoning Plan, with map)
- . Zoning the Central Section (accompanies Draft Zoning Plan)
- . Help Zone the Central Section (pamphlet)
- . Information on Zoning the Central Section (pamphlet)
- . Investigation of Tidal Lands and Tidal Waters of Queensland
within and adjacent to the Great Barrier Reef Marine Park -
Central Section for Declaration as a Marine Park

Volume 1: Background Information

Volume 2: Draft Zoning Plan

(Note that the final Zoning Plan for the Queensland Marine Park
within Central Section is not yet available as at July 1987)

- . Great Barrier Reef Marine Park Act (1975) and Regulations
(Note that the Amendments to the Regulations concerning the
Central Section are not yet available as at July 1987)
- . Queensland Marine Parks Act (1982) and Regulations
- . Analysis of Representations Report
- . Report on Proposed Revision of the Draft Zoning Plan for the
Central Section of the Great Barrier Reef Marine Park