

## ***Managing, Analysing and Presenting Public Submissions to Achieve Marine Park Planning Outcomes: An example from the Great Barrier Reef Marine Park.***

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### **Abstract**

*This paper describes the process and tools developed to manage, analyse and present the 31,540 public submissions received by the Great Barrier Reef Marine Park Authority during the 2002 and 2003 planning process to re-zone the Great Barrier Reef Marine Park. The re-zoning, which aimed to achieve the goal of biodiversity protection by implementing a network of no-take marine reserves throughout the Great Barrier Reef Marine Park [3], was the most extensive public planning exercise undertaken by the GBRMPA. The process to manage, analyse and present the submissions made use of qualitative methods, Geographical Information Systems (GIS) and innovative database design.*

### **Introduction**

Involving the public in Marine Park management is a challenging and complex task. Whilst some commentators suggest community involvement in marine management to be more hindrance than help [1], non-involvement denies the social and political reality of creating and maintaining marine protected areas [2]. The Great Barrier Reef Marine Park Authority (GBRMPA) has a very extensive process for involving the community in Marine Park management. Management is planned and conducted so that the coastal communities of Queensland, and the governments that represent them, are essential participants in the management of the Great Barrier Reef ecosystem<sup>1</sup>. A key tool that the Great Barrier Reef Marine Park Authority uses to involve the community and obtain public input to planning processes is for interested people to make submissions to the GBRMPA.

This paper describes the process and tools developed to manage, analyse, and present the 31,540 public submissions received by the Great Barrier Reef Marine Park Authority during the planning process to re-zone the Great Barrier Reef Marine Park. The aim of the re-zoning was to implement a network of no-take marine reserves to protect representative examples of the Great Barrier Reef's (GBR) biodiversity [3]. The submissions presented with information about the variety and location of activities people undertake in the GBR, the values they hold for particular areas and species and the importance the GBR has for regional communities and individual livelihoods. The re-zoning to achieve the goal of biodiversity protection was the most

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<sup>1</sup> Go to <http://www.gbrmpa.gov.au> for more information about how the GBRMPA involves community in the management of the Great Barrier Reef Marine Park.

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extensive public planning exercise undertaken by the GBRMPA and the submissions process was the key tool for providing the public with an opportunity to contribute to the planning outcome.

The effective design of Marine Protected Areas to protect biodiversity is as dependent upon understanding the biodiversity and associated ecological processes of a region, as it is upon knowing its human dimensions [4-6]. Achieving a biodiversity protection outcome in the multiple-use Great Barrier Reef Marine Park is a complex social and political issue [7, 8]. Whilst it is critical to know to understand the dynamics of the complex marine system, it is ultimately the social and political dimension that will largely determine the success, or not, of conservation strategies [9].

### **The Great Barrier Reef Marine Park**

The Great Barrier Reef Marine Park covers an area of 345,000 km<sup>2</sup> and runs approximately 2,300 kilometres along the Queensland coast from Torres Strait in the north to just north of Bundaberg in the south. It is bigger than the United Kingdom, Holland and Switzerland combined and almost the size of California [7].

This complex marine ecosystem is made up of 2,900 individual coral reefs, 900 islands and a diverse array of habitats and species [8]. While the coral reefs are what prompted the establishment of the Marine Park, the Marine Park encompasses much more than this. The Marine Park contains a variety of interconnected communities and habitats ranging from mangrove estuaries, seagrass beds, algal and sponge 'gardens', sandy or muddy bottom communities, continental slopes and deep ocean troughs [10]. It also contains habitats and breeding areas for rare or threatened species such as marine turtles, dugong, seabirds and whales.

The existing zoning that the new zoning plan replaced was developed between 1983 and 1988 [3]. By the late 1990's scientific knowledge about the GBR's ecosystem strongly indicated that the current zoning was not sufficient to ensure the long-term protection of the range of habitats and species that made up the Great Barrier Reef. A program to identify the major habitat types of the GBR was commenced to provide the basis for developing a new zoning plan based upon establishing a network of no-take areas to protect representative examples of the GBR's biodiversity. The Representative Areas Program (RAP) aimed at both maintaining the health and resilience of the ecosystem whilst also providing benefits for present and future users [3, 11]. The new zoning plan now protects 33.3% of the Marine Park from extractive activities.

### **The Great Barrier Reef Marine Park's Human Dimension**

The Great Barrier Reef lies adjacent to the Queensland coast, which is home to approximately 720,000 people [12]. The mix of urban and rural populations

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largely occurs between Cairns and Bundaberg, with the major urban populations concentrated in the centres of Cairns, Townsville/Thuringowa, Mackay and the Gladstone area (see Figure 1)



**Figure 1.** The Great Barrier Reef Marine Park

The GBRMP supports a variety of commercial, indigenous and recreational interests. The direct use activities supported by the GBR contribute an estimated A\$4.2 billion per annum to the Australian economy [13]. The tourism industry generates the majority of that income with commercial fishing

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and recreational activities contributing a smaller amount to the overall total (Table 1).

Industry	Gross value of production (\$m) <sup>f</sup>	Employed Persons <sup>a</sup>				
		Total (No.)	Employees (%)	Employers (%)	Own account workers (%)	Family (%)
<b>Commercial Fishing</b>	119	641 <sup>e</sup>	39	34	24	3
<b>Aquaculture</b>	38	378	64	13	20	3
<b>Seafood processing</b>	33 <sup>d</sup>	180	84	11	5	0
<b>Recreational fishing</b>	240	Na	Na	Na	Na	Na
<b>Tourism</b>	4269 <sup>b</sup>	47660 <sup>c</sup>	Na	Na	Na	Na

<sup>a</sup> Week prior to 7 August 2001. Due to rounding, figures might not sum to 100 per cent.

<sup>b</sup> Expenditure by all visitors in 1999.

<sup>c</sup> 1998-99

<sup>d</sup> Due to confidentiality restrictions, GVP for the catchment cannot be reported. This figure refers to production in the catchment, plus production by an additional seafood processing location in the Moreton statistical division.

<sup>e</sup> Employment data refer to ANZSIC industry 041 (Marine fishing).

<sup>f</sup> Calculated using wholesale prices (beef, horticulture and sugar cane); landed prices (commercial fishing and aquaculture); and mine site prices (mining). Approximated with turnover (processing); expenditure by recreational fishers (recreational fishing); and expenditure by tourists (tourism).

Source: Productivity Commission, 2003

**Table 1.** Economic importance of marine based industries in the GBR catchment

Apart from the economic input of reef based industries, local residents from communities adjacent to the Great Barrier Reef place great importance on the opportunity to undertake a range of extractive and non-extractive activities in the Great Barrier Reef waters. In particular, recreational fishing is a prime recreation experience for many local residents. For some of the smaller communities the GBR presents as the only viable venue for recreation activities. Annually there are approximately 6 million visits into the Marine Park [14]. About four million of those visits are being made by people who live within fifty kilometres of the GBR coast.

As well as the multiple issues presented by reef-based industries, local residents and visitors, the GBR has World Heritage status [15]. It is a national and international icon. Many people outside the GBR region have an interest in how the area is managed. This is either from the perspective of protecting its unique natural values or for the opportunities to experience it through activities such as SCUBA diving, sailing or game fishing.

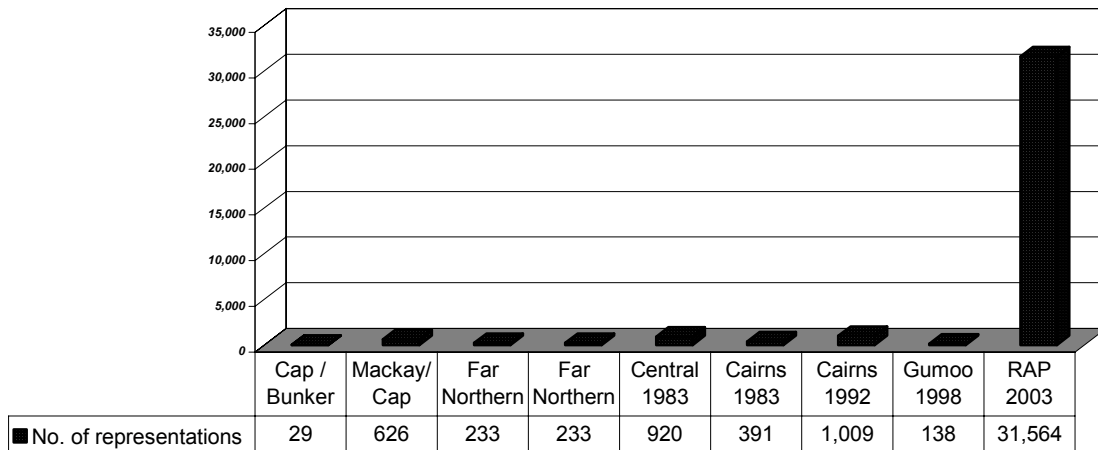
## **Planning to Protect Biodiversity**

The GBRMPA has an extensive community education and information program and a consultative process to engage and educate the community about Marine Park management. This program facilitates comment on critical marine management issues at a reef-wide level [16] and supports a system of Local Marine Advisory Committees to comment on Marine Park issues at a regional scale [17]. The process of communicating with the public and obtaining community input to the planning process was developed as an extension to these established processes.

The key legislative tool the GBRMPA has for obtaining public input to planning is a submission process [18]. This tool, whilst giving opportunity to people to contribute to the planning process, has some constraints. A planning process can draw emotive responses from some segments of the community but nothing from other groups [8]. This is due to factors that include but are not limited to a lack of understanding and/or information about the issue, a limited capacity to respond, or an assumption by some parties that they will not be negatively affected by the proposed changes. Further, the set of responses received through the submissions process are not a valid sample of either physical communities or communities of interest. Considering these constraints, the challenge is to have methods of analysis that ensure the substance of each submission is considered rather than the number of times a comment is submitted.

## **The Representative Areas Program Re-Zoning**

The Great Barrier Reef Marine Park Act (1975) stipulates two periods of public consultation for the development of a zoning plan. The two-phase community consultation process ensures zoning plans are prepared with an understanding of the range of uses and issues people might have for the area to be zoned [8]. Most significantly, the RAP re-zoning generated the most submissions the GBRMPA had ever received for a zoning process (Figure 2). The large volume of information presented to the GBRMPA by the submissions was a challenge that the GBRMPA had not previously encountered



**Figure 2.** Count of Submissions Received for GBRMPA Zoning Plans

During both phases of community consultation, the GBRMPA undertook an extensive program of public contact that included a range of activities and outputs summarised in Table 2. The level of public contact undertaken by GBRMPA staff during both phases of consultation was the most ever done in the history of the Marine Park.

1 <sup>st</sup> Phase Community Consultation	2 <sup>nd</sup> Phase Community Consultation
<ul style="list-style-type: none"> <li>• 200 formal meetings</li> <li>• 1,500 community service announcements on regional television</li> <li>• 33,000 submission brochures distributed</li> <li>• 38,000 hits on the web site</li> <li>• 4,000 phone calls to the free-call number</li> <li>• 100 newspaper articles</li> <li>• 60 radio spots and 10 television spots</li> <li>• 70 newspaper advertisements</li> </ul>	<ul style="list-style-type: none"> <li>• 360 formal meetings</li> <li>• 600 radio and TV news spots</li> <li>• 88 newspaper advertisements</li> <li>• Distributed throughout Australia were</li> <li>• 10,000 packages of information</li> <li>• 50,000 submission map-questionnaires</li> <li>• 29,000 explanatory brochures;</li> <li>• 76,100 Draft Zoning maps</li> <li>• 35,000 'hits' GBRMPA Website (63% from Australia, the rest from 99 countries);</li> </ul>

**Table 2.** Overview of Public contact the GBRMPA undertook through both community consultation phases

### 1<sup>st</sup> Phase Community Consultation

The first phase of community consultation occurred over a three-month period from 7 May 2002 to 7 August 2002. The objectives of this consultation were to inform the community of the purpose of the re-zoning, the process to develop the new zoning plan and to encourage people to provide information that would assist the GBRMPA with the development of the Draft Zoning Plan.

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The primary instrument prepared for collecting information from people interested in making a submission was a 1:250,000 map of a defined area in the GBRMP linked to a questionnaire. People were asked to mark areas on the map that were of interest to them and to record corresponding information on the questionnaire. These areas could either be places people used for fishing or other activities, or sites of special and unique value. The map-questionnaire also prompted people to provide general comments about Marine Park management issues. The map-questionnaires (Figure 3) were completed either by individuals or by people working as a group. At the end of the first phase of community consultation, the GBRMPA received 10,190 submissions. Over ninety-five percent of the submissions were prepared using the GBRMPA map-questionnaires.

1. What are your main activities/interests in the Marine Park? (Please number the relevant activities in order of importance: 1 = most important)

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Swimming/Snorkelling         | <input type="checkbox"/> Conservation Interests    | <input type="checkbox"/> Tourism Industry                  |
| <input type="checkbox"/> Scuba Diving                 | <input type="checkbox"/> Research                  | <input type="checkbox"/> Indigenous Interests/Native Title |
| <input type="checkbox"/> Recreational Fishing         | <input type="checkbox"/> Commercial Fishing        | <input type="checkbox"/> Nature Enjoyment                  |
| <input type="checkbox"/> Recreational Sailing/boating | <input type="checkbox"/> Commercial Shipping/Ports | <input type="checkbox"/> Resident of the Area              |
| <input type="checkbox"/> Motorised Water Sports       | <input type="checkbox"/> Sightseeing/Tourist       |  |
| <input type="checkbox"/> Other (please specify).....  |  |  |

2. The GBRMPA has identified a need to increase the protection of biodiversity within the Marine Park. This will be achieved, in part, through increasing areas of no-take zoning (as indicated above). Do you support this?

.....

.....

*Attach any additional comments if insufficient space.*

FIRST FOLD

3. Do you have any comments about the type and location of existing uses or about any aspect of zoning of the Marine Park?

.....

.....

*Attach any additional comments if insufficient space.*

4. There are 26 marine areas adjacent to the Queensland coast that have recently been included in the Marine Park. These new coastal sections are marked in grey on the map overleaf. What are the most important issues to be considered when zoning each of these sections? Please explain why and attach any additional comments if space is insufficient. Please specify which coastal section/s.

.....

.....

*Attach any additional comments if insufficient space.*

Further comments can also be provided on the detailed map sheets.

**Figure 3.** The response section of the map-questionnaire format used for the first phase of community consultation

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## 2<sup>nd</sup> Phase Community Consultation

The second phase of community consultation occurred from 2 June 2003 to 8 August 2003. Unlike the first phase that sought a broad set of information from the community about park uses and values, the second phase of consultation focused community comment on the Draft Zoning Plan (DZP). The map-questionnaire format (Figure 4) used for the second phase of community consultation accompanied the DZP and directed people to comment on it. The map-questionnaire prompted people to identify the draft zones they did not support and requested them to provide alternative options and to state their reasons. The questionnaire also prompted people to nominate those new zones they did support with reasons why and to make comment on the draft zoning provisions<sup>2</sup>.

**Submission Form**  
Representative Areas Program - Draft Zoning Plan

To complete questions 1 and 2, you will need to consult the Draft Zoning Plan Maps. Maps are available at [www.gbrmpa.gov.au](http://www.gbrmpa.gov.au) or can be viewed at most local council offices or libraries.

1. While the Draft Zoning Plan has been created using input from a wide range of recreational and commercial users, scientists, councils, community groups etc, there may still be areas where you could recommend changes to the Plan. Have a look at the map for your area of interest and identify any specific locations on which you'd like to comment. Most of the features marked on the maps have a unique identifier e.g. Cape Keppel on Curtis Island is CP-23-099B. Using these identifiers and the feature name please fill in the following table. Then tell us what changes you would like made to these sites and why you believe such changes are necessary. You can repeat this process for as many locations as you like, attaching additional pages if you need to.

YOUR ZONE HERE	ZONE ID number	Name of feature (eg. reef or shoal) of interest	Changes that you would like to see made to specific sites in the Draft Zoning Plan	Reasons why you would like to see these changes made to the Draft Zoning Plan
EXAMPLE	MP-13-11	AB1 REEF	This not a good spot for a green zone. Couldn't it stay dark blue?	This is one of the few spots that I can easily reach in my boat. It is good for catching sweet lip and is well protected.
EXAMPLE		20 km East of BFG mainland	Should be made green	Fish aggregation site and sponge garden.

2. It is also important to let us know what areas you specifically support in the Draft Zoning Plan. As with Question 1, use the unique identifiers and location names to fill in the following table. Please tell us why these sites are important to you and why the proposed zoning is appropriate. You can repeat this process for as many locations as you like, attaching additional pages if you need to.

YOUR ZONE HERE	ZONE ID number	Name of feature (eg. reef or shoal) of interest	Reasons why you support this aspect of the Draft Zoning Plan
EXAMPLE	CP-4-700	XY2 REEF	This is a great diving and snorkelling site but we often fish here as well. It should stay as a yellow zone.

3. Do you have any additional comments regarding uses or activities allowed in the different Zones in the Marine Park?


**Figure 4.** The response section of the map-questionnaire format used for the second phase of community consultation

As with the first phase of community consultation, the GBRMPA encouraged people to use the map-questionnaire format to make submissions. Fifty thousand map-questionnaires with information brochures were distributed. Access to the Draft Zoning Plan was also available from the GBRMPA website and 2,000 Compact Discs with the Draft Zoning Plan and map-questionnaires were distributed. By the close of the two-month consultation

<sup>2</sup> Zoning provisions are the specific regulations that govern what can or cannot occur within in a zone. For example the provisions of a conservation protection zone are that only two lines with one hook a piece can be used per person.



period, the GBRMPA had received 21,350 submissions. Ninety-seven percent of submissions were done using the GBRMPA supplied map-questionnaire.

### **Submissions Analysis**

The submissions for the first and second phases of consultation were analysed with a coding system based upon assigning attributes, themes and sub-themes to each submission (Table 3, Table 4 and Table 5). This coding ensured each submission could be linked to a spatial unit, issue, community or interest group. The coding system was based upon seven key themes. These themes covered all possible combinations of information the submissions might contain relevant to the zoning and marine park management. Each theme had many sub-themes. Coding the submissions against the sub-themes permitted a very detailed analysis of each submission and provided the basis for ensuring the information presented in the submissions was applied as effectively as possible during the planning process.

<b>Attribute</b>	<b>Source of Information</b>	<b>Coding options</b>
Origin	Address supplied on submission	Postcode
Origin Type	Identified by the author of the submission in space provided on both standard GBRMPA format submission forms	Individual (any submissions not classified in any of the other categories below) Recreational Fishing Organisation Commercial Fishing Organisation Tourism Industry Queensland Government Agency Commonwealth Government Agency Local Government Members of Parliament ( State MLA and Federal MP) Conservation Non-Government Organisations Business Interests Indigenous Organisations Other – undefined community groups, academic organisations etc
Primary Interest	Selection made by the author of the submission from the options provided on the GBRMPA format or if that was not available then a decision was made by the analyst as to which category to assign based upon the information presented in the submission	Recreational Fishing Commercial Fishing Resident of the Area Nature Enjoyment Conservation Swimming and Snorkeling Recreational Boating & Sailing SCUBA Diving Motor Watersports Research Tourism Industry Indigenous Interests Commercial Shipping and Ports Tourist, Sightseeing
Secondary Interest		As per the list for primary interest
Support RAP / Green Areas		Yes / No
Reference to New Coastal Areas		Yes / No
Example Submission	Submissions were tagged as containing examples of relevant topics or styles of submissions made to GBRMPA which may be used as examples when compiling reports etc.	Yes / No
Contains Bio-physical / Scientific Information	Submissions containing bio-physical and Scientific information were coded for retrieval and expert assessment for consideration during the development of the Draft Zoning Plan. No judgement was made as to accuracy of the information at the time of coding.	Yes / No

GBRMPA Action Required		Yes / No
Relevant to GBRMPA section		The GBRMPA section that analysts considered the submission was most relevant to based on the content of the representation

**Table 3.** Information related to the designation of attributes to a submission

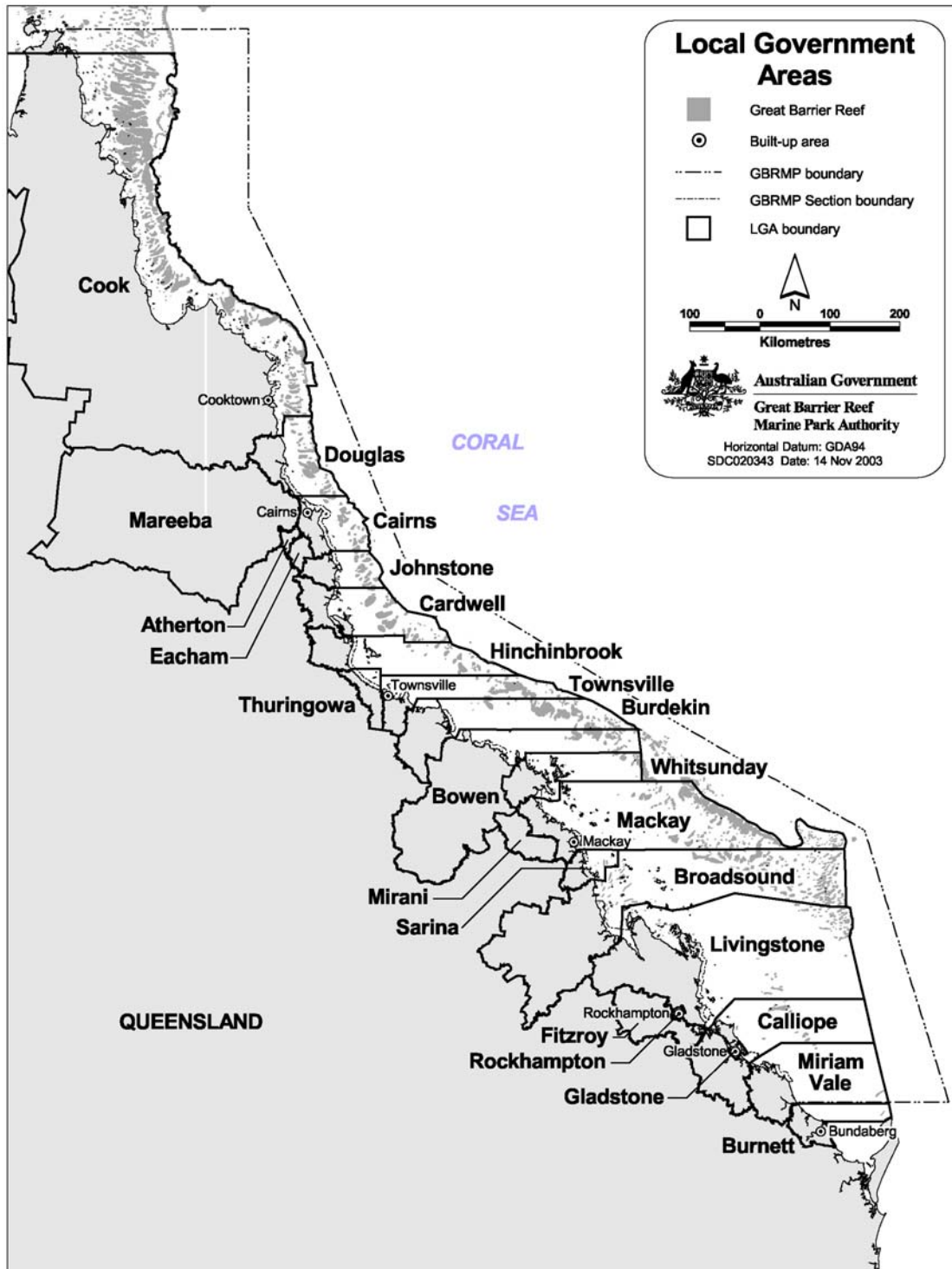
<b>Theme</b>	<b>Description</b>
Maintain Take Access	Reference to comments about maintaining access to locations in the GBR where people want to be able to undertake extractive activities or related to issues about people being able to continue accessing an area for research or particular types of tourism activities.
Protection	Reference to comments about either protecting various natural values in the GBR or action that might be taken to protect the natural values of the GBR.
Consequences	Reference to consequences (negative and positive) to individuals, communities or the GBR due to the introduction of increased Green Zones.
Alternatives	Reference to alternatives to Green Zones and other options that might be taken to achieve protection of biodiversity.
Communication	Reference to issues related to communication process and information products.
Enforcement	Reference to enforcement related issues raised in the submissions.
Other Issues	Reference to other issues raised in the submissions that are not directly related to RAP objectives but are of relevance to Marine Park management and planning and need to be considered in the overall planning process

**Table 4.** The major theme groupings used when coding submissions

<b>Issues raised regarding maintaining access for extractive uses</b>
Maintain access adjacent to urban areas/township. If a specific town is mentioned note this in the notes field.
Maintain access for anchorage eg "need for feed", Stowed and Secure
Maintain access for bait fishing including bait netting
Maintain access to beaches
Maintain access for charter fishing
Maintain commercial crabbing access
Any commercial fishing access not specified as a type of commercial fishing
Maintain access for commercial fishing inshore and close to the coast
Maintaining access for game fishing
Maintain commercial harvest fishing access
Keep existing Scientific Research Zones
Maintain shell collecting and other limited collecting including oyster gathering
Maintain commercial line fishing access
Maintain access for Local Residents' only
Maintain opportunities for Mariculture activities
Specific reference for New Areas to be zoned General Use A
Specific reference to New Areas not to be zoned Green
Maintain commercial netting access
A location which is important for catching a particular species of fish. Eg This is a known mackerel fishing site. Write the name of the fish species in the notes field.
Any recreational fishing access issue not referred to under RecFishCoast
Access to recreational fishing in any inshore coastal area. This includes reference to estuaries and creeks.
A clear statement that recreational fishing is acceptable but commercial fishing is not
Maintain access for research including manipulative research
Maintain access to inshore areas for safety reasons
An important area able to be reached by small boats
Maintain Spearfishing access
Allow tourist operators to do show and tell and replace
Maintain Traditional fishing and collecting access
Maintain Traditional hunting access
Maintain commercial trawling access
Maintain access for trolling and fishing for pelagics

**Table 5.** An example of the sub-themes used to code submissions under the Maintain Take Access coding theme

Coding for the phase one submissions and the subsequent analysis of stage two submissions was developed from a qualitative analysis of a geographically stratified sample of 1,200 submissions drawn from the 10,190 phase one submissions. The geographic regions were defined as each of the twenty-six Local Government Regions adjacent to the Great Barrier Reef (Figure 5), Southeast Queensland, other areas of Queensland, each of the States of Australia and international submissions. The coding for the second round of consultation followed the first phase with the variation that coding included specific reference to each draft zone and zoning provisions. The attributes that could be appended to each submission are outlined in Table 3.



**Figure 5.** The twenty-six Local Government Areas adjoining the Great Barrier Reef

Submission analysis was linked with the Geographical Information System (GIS) being used to present and analyse the spatial data for the re-zoning. Each of the two phases of the planning process had different versions for how the spatial data presented by the submissions was recorded and analysed.

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The first phase of submissions provided a variety of spatial data. People presented information about reef-usage and the location of special and unique areas on the 1:250,000 map-questionnaires and other map products. Most of these map submissions were individually digitised by the GBRMPA to record the spatial extent of the information presented by individual submissions. Through a process of building layers of spatial information, patterns of usage and other spatial information emerged from the submissions. This information, with other sources, informed the development of the DZP.

During the second phase of community consultation, the map-questionnaire instrument asked people to refer to the individual Draft Zoning code for each proposed zone when making comment (Figure 3). The DZP codes for each proposed zone became part of the coding<sup>3</sup>.

### **Process to Manage Submissions**

The submissions were managed through a three-stage process. The process was designed to ensure the security of the submissions, provide prompt notification acknowledging receipt of submissions, systematic analysis and presentation of the information provided by the submissions.

During the first stage, the contact details from each submission were recorded in a database, a unique identification number was assigned, and an acknowledgment card was sent to the person or organization that made the submission. People provided submissions in hard copy, email or through a web-based questionnaire. The system was designed to receive all three formats. The electronic systems for receiving submissions had an automated checking process that asked people to validate that they had made the submission that the GBRMPA received from their email address.

For the second stage, all submissions, apart from those in electronic format, were individually scanned into a Portable Document Format (PDF). All the electronic files were saved into a custom-built submissions database<sup>4</sup>.

The third stage was the most comprehensive: A team of trained GBRMPA staff read and analysed all the submissions following the coding framework previously described. Consistency of analysis across the analytical team was ensured by the team leader checking a sample of the analysed submissions. A database was developed for the analysis of the submissions. This was an Oracle database with a Microsoft Access interface (Figure 6). Both the spatial and non-spatial information presented by the submissions were entered into the database.

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<sup>3</sup> During the second phase of community consultation 5,195 submissions with map-based information were received.

<sup>4</sup> Only the 21,350 submissions from second round of community consultation were scanned.

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## RAP CP2 Submissions Analysis

ResponseID:  Postcode Origin:  Data Analyst:  Origin Type:   
Remember to prefix with E for email, W for web or M for mailed in  
 GBRMPA Action Reqd:  Relevant Group:

Organisation Name:  Number Members:  Insufficient Information:   
 Primary Interest:  Other Interests:  BioPhysical Info:  Example Submission:   
 Non STD GBRMPA Form:  Form Type:  Geographical Information:  Ministerial Submission:

**Changes/Supports:** ZoneID:  Feature Name:  Change/Support:

RESPON	MAINTAIN TAKE	CONSEQUENCE	PROTECTION	ALTERNATIVES	ENFORCEMENT	COMMUNICATIO
▶ M16468	RecFish	NegLifestyle		AltOffered		
M16468	Small Boat Ac					
M16468	SafetyIssues					
* M16468						

Record:  of 3

Record:  of 9

**Uses/Activities**

RESPON	ACTIVITY TYPE	ZONE TYPE	PROVISIONS
▶ M16468	Bait Netting	Conservation Park Zone	Allow with restric
* M16468			

Record:  of 1

**Notes**  Checked

MNP-19-95: make the area north of 19.44S and west of 147.51.5 E yellow, and add an equivalent area to the northern and eastern sides of the green zone.

CP-19-209: extend south to include all of eastern Upstart Bay, and extend

**Figure 6.** Coding entry form

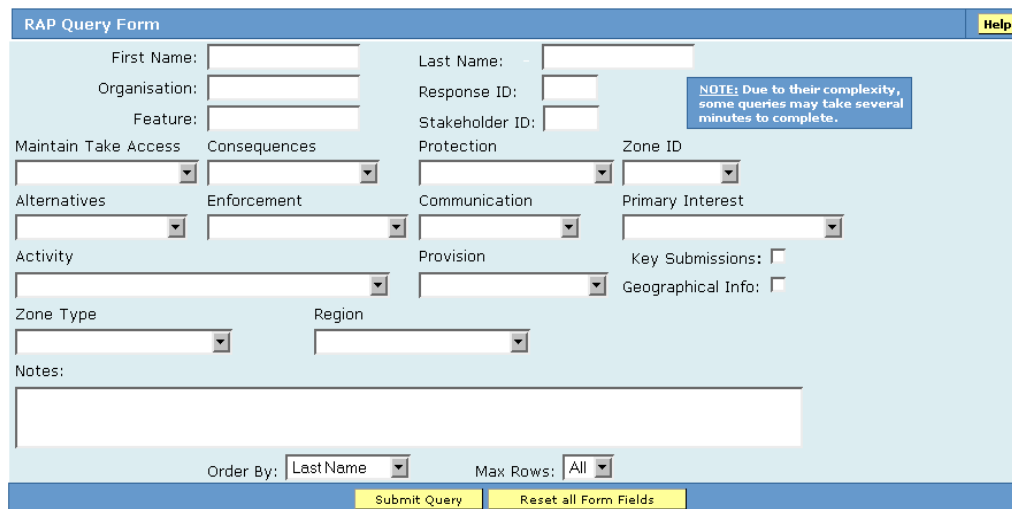
Each analyst entered information into the entry form of the database from reading and then coding each submission against the range of pre-determined themes and attributes (Table 3 and Table 4).

During the analysis, the submissions were assigned to the theme or themes that best fitted the information contained in the submission (Table 4). For each theme a range of sub-themes were identified and the content of the submissions was coded to a greater level of detail against these sub-themes (As an example the sub-themes used under the maintain take access theme are shown in Table 5).

### Presenting the Submissions

A web-based query tool was developed to ensure the GBRMPA Planning teams could easily access the submissions information during the planning process (Figure 7).





**Figure 7.** The web based query tool

The query tool allowed the Planning teams to search the submissions database to locate submissions relevant to the planning issue they were dealing with. The completed search would return summary information about the submissions and a PDF of the submissions.

Due to the coding, detailed searches could be made of the submissions database. For example, a search could be done to locate submissions from recreational fishers from a particular town, who asked that the draft zoning for a particular zone be changed. The large number of options for coding against themes, attributes and geographical areas provided multiple options for the types of queries that could be made of the submissions. As all submissions were in electronic form, retrieval and dissemination was fast and cost effective.

The planning process to develop the DZP and the final version of the zoning plan was iterative. The planning teams were divided into regional groups. They considered each proposed zone in the Marine Park against the range of information available to them including the information presented by submissions. The benefits of having the web-based query tool meant that planning teams could call up actual submissions to be displayed as they worked through an issue for a particular location or topic (Figure 8).



**Figure 8.** A GBRMPA Planning Team

(Photo J.Innes)

### **Concluding comments**

Involving the community in Marine Park planning is a challenging but important part of achieving a balance between sustainable use and biodiversity protection. For the GBRMPA, public submissions are a key tool for Marine Park managers to understand and incorporate community issues, and information into Marine Park management. The 2002-04 planning process to re-zone the GBR to protect representative examples of the region's biodiversity presented the GBRMPA with a unique challenge in community involvement. The re-zoning generated considerable community interest and over both phases of re-zoning the GBRMPA received 31, 540 submissions.

A key lesson learned for managing such a volume of submissions and making effective and efficient use of the information they presented was to have a well-designed format to assist people in preparing their submissions. The map-questionnaire facilitated the process of analysis and presentation. Critically being able to link spatial information with a qualitative coding system within the spatial environment of a Geographical Information System proved important for achieving the objective of the area based zoning process. The GBRMPA planning teams were able to refer to spatially referenced information and the customised online search engine enabled people to efficiently search and retrieve copies of actual submissions against a range of themes and attributes.

Planning for Marine Park management is a complex social and political process. How the GBRMPA processed, analysed and presented the information contained in the 31,540 submissions it received over two periods

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of public comment shows the comprehensive approach the GBRMPA took to ensure its marine park planning outcomes were informed by the issues and needs of many people.

## Reference List

- [1.] White, A.T, Hale, L.Z., Renard, Y., and Cortesi, L. eds. Collaborative and community-based management of coral reefs: lessons from experience. 1994, Kumarian Press: West Hartford CT.
- [2.] Agardy, T., Bridgewater, P., Crosby, P., Day, J., Dayton, P., Kenchington, R Laffoley, D., McConney, P., Murray, P., Parks, J., Peau, L. Dangerous targets? Unresolved issues and ideological clashes around marine protected areas. *Aquatic Conservation*, 2003. 13(4): p. 353-367.
- [3.] Fernandes, L., Day, J., Lewis, A., Slegers, S., Kerrigan, B., Breen, D., Cameron, D., Jago, B., Hall, J., Lowe, D., Innes, J., Tanzer, J., Chadwick, V., Thompson, L., Gorman, K., Simmons, M., Barnett, B., Sampson, K., De'ath, G., Mapstone, B., Marsh, H., Possingham, H., Ball, I., Ward, T., Dobbs, K., Aumend, J., Slater, D., and Stapleton, K. Implementing representative no-take areas over 1/3 of the Great Barrier Reef: large-scale implementation of Marine Protected Area theory with lessons for global application. 2004 In preparation for submission
- [4.] Morin, T. Sanctuary Advisory Councils: Involving the Public in the National Marine Sanctuary Program. *Coastal Management*, 2001. 29(4): p. 327-339.
- [5.] Mascia, M. The Human Dimension of Coral Reef Marine Protected Areas: Recent Social Science Research and Its Policy Implications. *Conservation Biology*, 2003. 17(2): p. 630-632.
- [6.] Christie, P., McCay, B J., Miller, M.L., Lowe, C., White, A T., Stoffle, R., Fluharty, D.L., McManus, L.T., Chuenpagdee, R., Pomeroy, C., Suman, D.O., Blount, B.G., Huppert, D.D., Eisma, R.L.V., Oracion, E., Lowry, K., and Pollnac, R.B., Toward developing a complete understanding: A social science research agenda for marine protected areas. *Fisheries*, 2003.28(12): 22-26.
- [7.] Day, J. Zoning: lessons from the Great Barrier Reef Marine Park. *Ocean & Coastal Management.*, 2002. 45: 139-156.
- [8.] Lawrence, D, Kenchington, R and Woodley, S. The Great Barrier Reef: finding the right balance. 2002, Carlton: Melbourne University Press.
- [9.] Brechin, S.R. , Wilshusen, P.R., Fortwangler, C.L., and West.P.C., Beyond the Square Wheel: Toward a More Comprehensive Understanding of Biodiversity Conservation as Social and Political Process. *Society & Natural Resources*, 2002. 15(1): 41 -- 64.
- [10.] GBRMPA, State of the Great Barrier Reef World Heritage Area Report. 2003, [http://www.gbrmpa.gov.au/corp\\_site/info\\_services/publications/sotr/](http://www.gbrmpa.gov.au/corp_site/info_services/publications/sotr/).
- [11.] Day, J., Fernandes, L., Lewis, A., De'ath, G., Slegers, S., Barnett, B., Kerrigan, B., Breen, D., Innes, J., Oliver, J., Ward, T., and Lowe, D., The Representative Areas Program for protecting biodiversity in the Great Barrier Reef World Heritage Area. Ninth International Coral Reef Symposium 23-27 October 2000, 2002: 687-696.
- [12.] Australian Bureau of Statistics, Population by Age and Sex, Queensland (3235.3). 2001: 2001 Geographical Boundaries.

- [13.] Productivity Commission. Industries, Land Use and Water Quality in the Great Barrier Reef Catchment. 2003, Productivity Commission: Canberra.
- [14.] Norris, A, Moscardo, G and McCoy, A. Recreational Use of the Great Barrier Reef Marine Park. 2004, CRC Reef Research Centre Technical Report, CRC Reef Research Centre: Townsville.
- [15.] Lucas, P.H.C., Webb, T., Valentine, P., and Marsh, H. The Outstanding Universal Value of the Great Barrier Reef World Heritage Area. 1997, Townsville: Great Barrier Reef Marine Park Authority.
- [16.] Great Barrier Reef Marine Park Authority, Key Issues. 2004, Great Barrier Reef Marine Park Authority: Townsville.
- [17.] Great Barrier Reef Marine Park Authority, Consultation and Community Involvement. 2004, Great Barrier Reef Marine Park Authority.
- [18.] Attorney-General, Great Barrier Reef Marine Park Act 1975. 2004, Attorney-General's Department: Canberra.