

MANAGING HUMAN ACTIVITIES IN CAPE BYRON MARINE PARK

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Introduction

Increasingly throughout Australia and the world, marine protected areas (MPAs) are being established and managed to address issues such as the need to conserve marine resources and to separate conflicting uses. In this paper we discuss some of current objectives and models relevant to the management of MPAs in Australia and in particular, NSW. Then we examine the application of the multiple use MPA model with respect to the planning and management of Cape Byron Marine Park.

Marine protected areas – objectives and models

A national program to establish Marine Protected Areas (MPAs) in Australia, which commenced in the mid 1990's, represented a departure from the limited marine management tools of the past and their strong links to, and often confusion with, terrestrial park planning. MPAs were no longer considered to be merely exclusive amusement parks set aside for recreational and commercial users such as boaters, bathers and fishers (Agardy, 1994). Instead, MPAs are being implemented to address a wide range of marine resource, biodiversity and user conflict management dilemmas and are well suited to dealing with coastal management issues.

Some common management objectives of MPAs in Australia include:

- Ensuring that all activities are ecologically sustainable and undertaken in accordance with best environmental practices;
- Ensuring that natural values of sites are not inadvertently lost through unplanned increases in use;
- Ensuring that cultural and historic heritage values are protected;
- Separating conflicting uses, particularly in high use areas;
- Managing intensive use to ensure it does not devalue visitor experience at popular destinations or displace other users;
- Managing the spatial distribution of activities;
- Managing the impact of commercial fishing, collecting and mariculture on other users and conservation values;
- Managing the impact of tourism on other users; and
- Ensuring that there is a management framework for decision making to avoid the overall cumulative impact of case by case assessment, particularly in high growth/use areas.

MPAs are important tools for managing increasing threats to the marine environment from human activities on land and sea. There are over 1,000 MPAs around the world (Lloyd, 1995) and more than one third are in Australia. They range from small, highly protected reserves that sustain a particular resource or habitat type such as the Annulus in Victoria at 3 hectares, to larger multiple-use areas in which conservation is balanced with various socio-economic activities such as the Great Barrier Reef Marine Park at 38 million hectares.

MPAs in Australian waters initially were usually declared to protect their economic values to commercial fisheries, recreational fishing, tourism or recreational diving

rather than for their bioregional representativeness (McNeil, 1994). Australia's first MPA was declared in 1938 at Green Island off Cairns, Queensland. Today there are more than 250 MPAs throughout Australia, covering over 40 million hectares. They include marine parks, marine national parks, conservation areas, fish sanctuaries, fish habitat reserves, and recreational fishing havens. Some areas are protected under Commonwealth law while others are protected under State legislation.

There are two general approaches to establishing MPA systems or networks: (i) either as a few large multiple-use areas, which contain strictly protected areas within them (e.g. Great Barrier Reef Marine Park); or (ii) as many relatively small sites, each strictly protected, e.g. Victoria's marine national parks and sanctuaries (Edyvane 2005).

In Australia the Commonwealth and each State government uses its own policies and legislation to establish and manage MPAs. In addition, these may be managed through a combination of fisheries and park management laws administered by separate government agencies.

Marine protected areas in NSW

Prior to the 1990s some generally small marine and coastal habitats were protected in NSW under National Parks or Fisheries legislation. These protected areas were generally small and established to protect a particular habitat, resource or cultural heritage value, or were extensions to an existing national park.

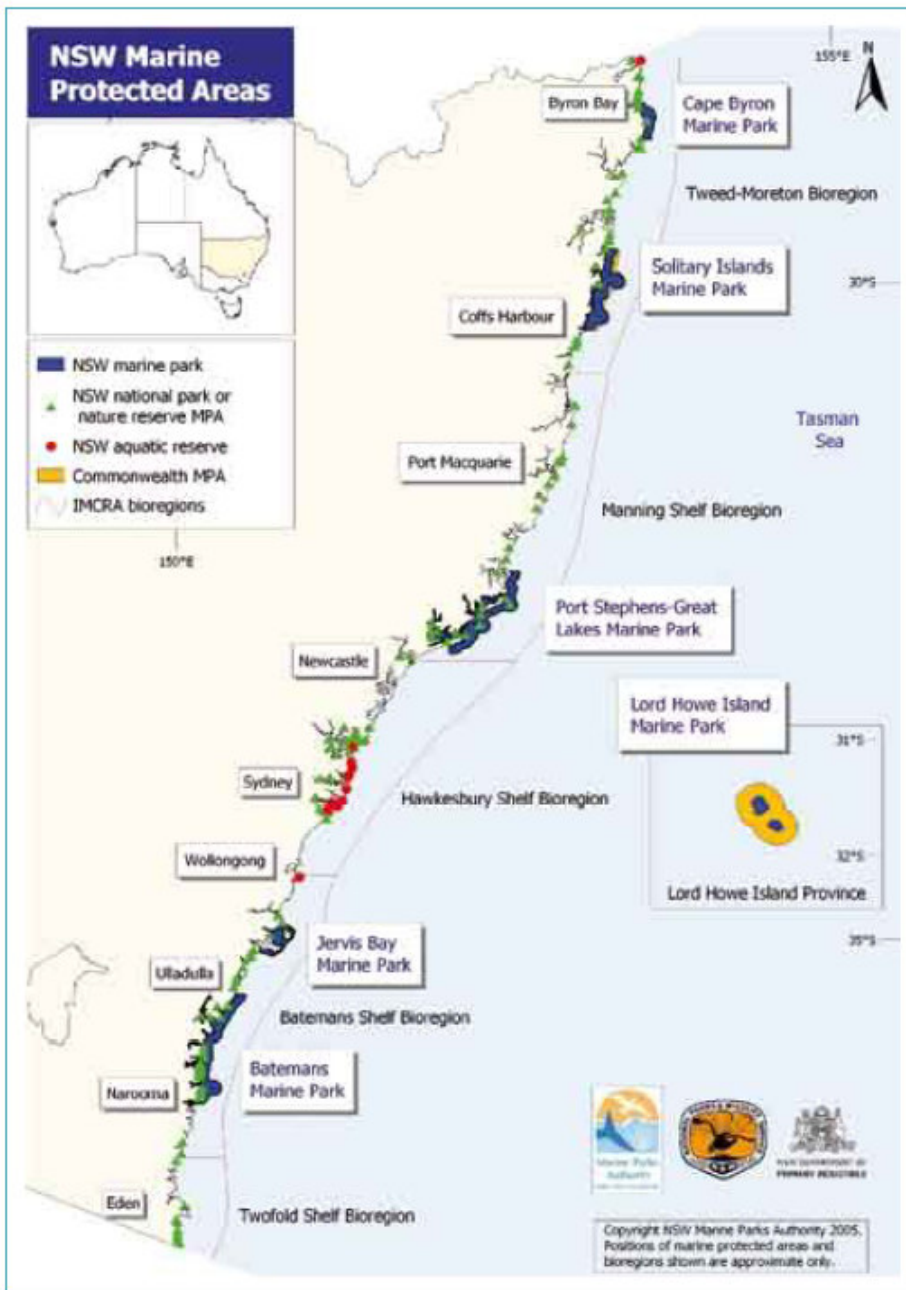
The road to establishing MPAs in NSW, with the intention of more comprehensive habitat protection, commenced with the development of a Nature Conservation Strategy and a Vision for the NSW Coast, which committed the government to the introduction of legislation to establish a comprehensive system of multiple use marine parks based on the Great Barrier Reef Marine Park model.

The Marine Parks Act 1997 was enacted in NSW as a means to provide a comprehensive process for the declaration and management of multiple use marine parks and provides the statutory basis for preparing zoning plans for marine parks that cater for a variety of uses including conservation as well as commercial and recreational fishing. However, it is important to note that marine parks in NSW are established first and foremost to conserve biodiversity and ecological processes which is made very clear in the objects of the Marine Parks Act which are as follows:

- *conserving marine biological diversity and marine habitats by declaring and providing for the management of a comprehensive system of marine parks;*
- *maintaining ecological processes in marine parks; and*
where consistent with the preceding objects:
- *providing for ecologically sustainable use of fish (including commercial and recreational fishing) and marine vegetation in marine parks, and*
- *providing opportunities for public appreciation, understanding and enjoyment of marine parks.*

In addition to a number of Aquatic Reserves established under the *Fisheries Management Act 1994* principally in and around Sydney and several extensions to National Parks and Nature Reserves declared under the *National Parks and Wildlife Act 1974*, six large multiple use marine parks have been gazetted under the Marine Parks Act in NSW (see Figure 1).

Figure 1. NSW Marine Protected Areas



Cape Byron Marine Park

In this paper, Cape Byron Marine Park (CBMP) will be used as a case study for the application of the marine park planning process in NSW which for CBMP, is summarised in Figure 2. In 2001 the NSW Marine Parks Authority (MPA)

commissioned a bioregional assessment of marine ecosystems which identified 15 distinct marine ecosystems in the NSW section of the Tweed-Moreton Bioregion (Avery, 2001). An area in the Byron Bay region of the bioregion was found to support ten of these ecosystems, five of which, were considered to be under-represented within MPAs in the bioregion. Consequently, the NSW Government determined that a marine park in the region would contribute to the conservation of these ecosystems and after the release of a discussion paper and consultation on the proposal, Cape Byron Marine Park was declared in November 2002.

Cape Byron Marine Park extends for approximately 37 kilometres from the northern breakwall at Brunswick Heads south to Lennox Head, and from the mean high water mark on the coast and islands out to sea for three nautical miles to the limit of the NSW State waters. Tidal lands and tidal waters of the Brunswick River and its tributaries as well as Belongil and Tallow creeks are included within the boundaries of the Marine Park which covers an area of around 22,000 hectares which, when declared in 2002, was unzoned. Following the declaration of a marine park the next task in establishing a multiple use marine park is to prepare a marine park zoning plan that establishes sanctuary or "no-take" zones as well as zones that provide for the sustainable use of resources. This is a highly consultative process which for the Cape Byron Marine Park Zoning Plan took three and a half years and involved two rounds of public consultation (see Figure 2).

Essential requirements for the preparation of a marine park zoning plan are the identification of the natural resources and conservation values of the marine park, and the identification of the different types and levels of use of areas of the Marine Park. Information from studies on the natural resources and conservation values of the Marine Park was collated and the entire marine park was mapped and a habitat map prepared. Two surveys of recreational use in the Marine Park were commissioned to ascertain the different types and levels of use of different areas of the Marine Park (see Figure 3). In addition, commercial fishers were requested to fill out questionnaires to identify their levels of use of specific areas of the Marine Park.

Information on the natural resources of the Marine Park together with levels of use was collated into the — Background Resource Working Paper for the Cape Byron Marine Park (Marine Parks Authority, 2003) — and was used by marine park planners to prepare an issues and options paper for public consideration, and later a draft marine park zoning plan which was also released for public consultation. Written submissions from the public as well as input from meetings with focus groups and the from the Cape Byron Marine Park Advisory Committee, (comprising the various marine park stakeholders), were taken into consideration in the preparation of a final marine park zoning plan.

For Cape Byron Marine Park the whole planning process from the identification of an area of interest as a marine park to the finalisation of a marine park zoning plan including three stages of public consultation took four and a half years (see Figure 2).

Figure 2. Steps involved in the planning process for CBMP

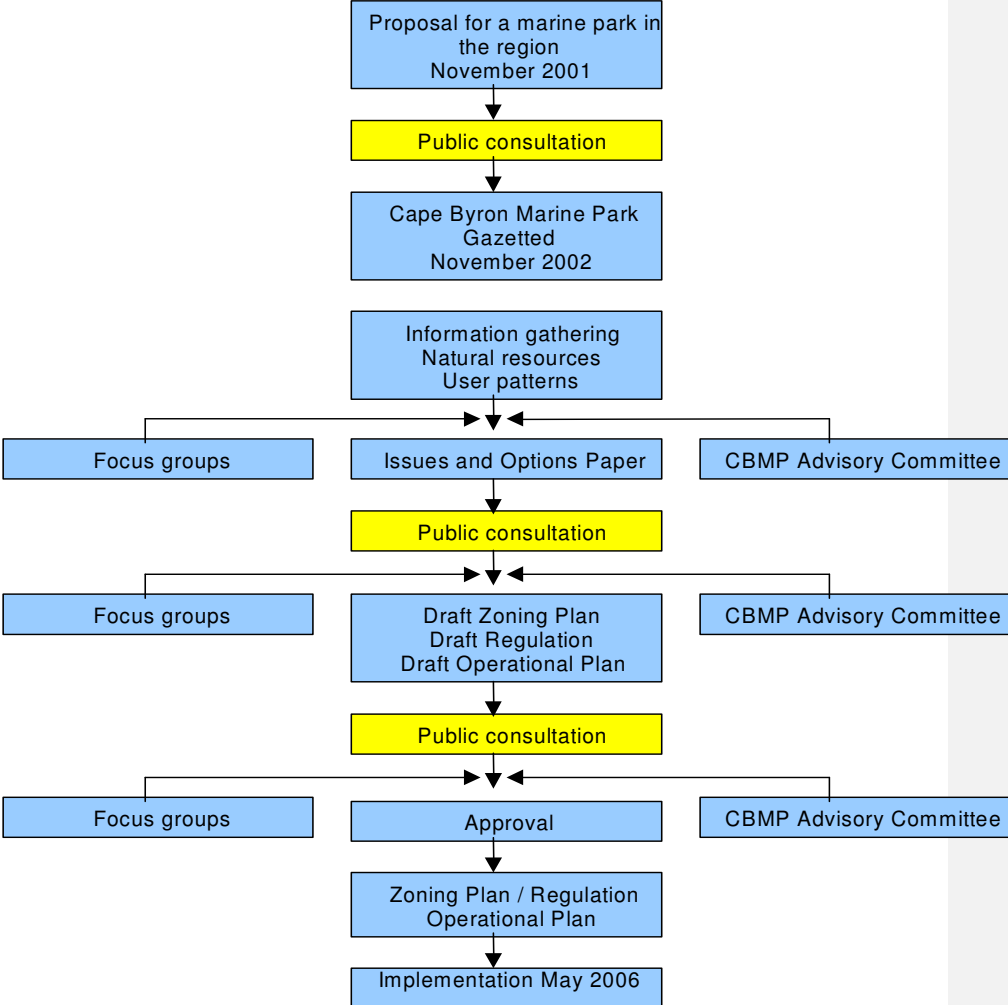
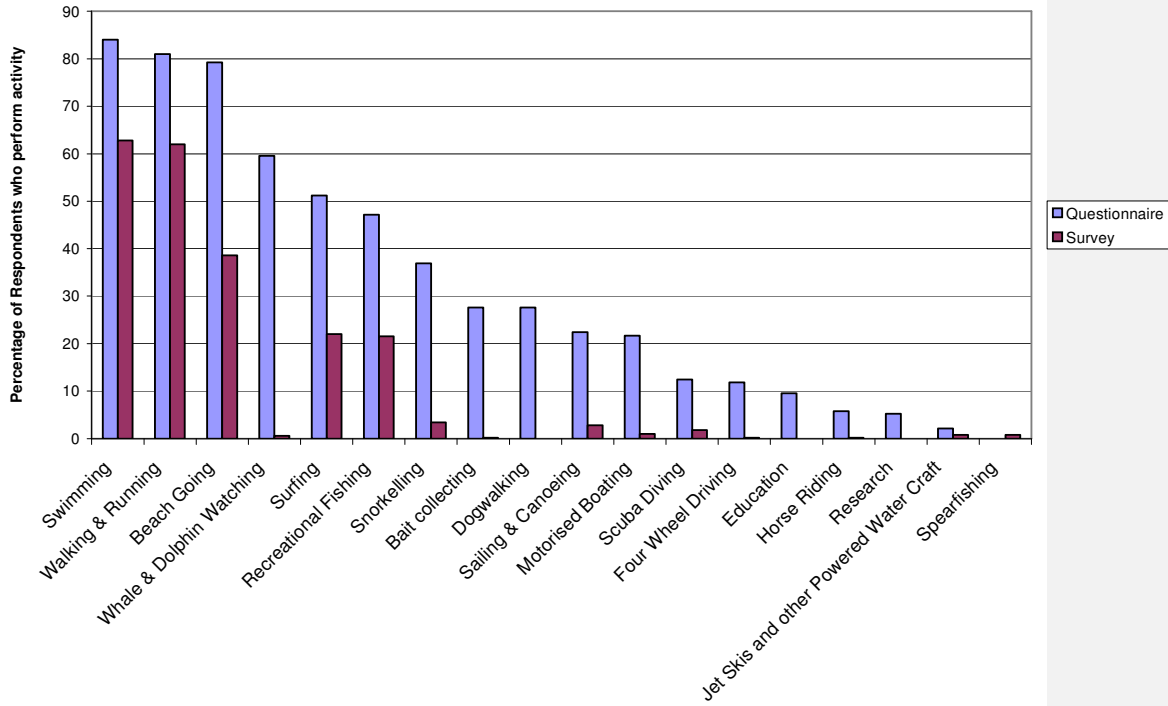


Figure 3. Proportion of respondents engaged in various recreational activities in CBMP.

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Cape Byron Marine Park Zoning Plan

Through the application of a comprehensive set of zoning criteria and guidelines, the waters of NSW marine parks are gazetted as one of four zones to enhance the conservation of marine habitats and species in the Marine Park. Each zone is shown on the map of the marine park zoning plan in a different colour (see Figure 4). An activities table describes which activities may be undertaken “as of right,” which activities require a permit, and which activities are prohibited within each marine park zone (see Table 1). The characteristics of each of the four marine park zones together with the areas and habitats they comprise in CBMP are listed below.

Sanctuary Zones

Sanctuary or “no-take” areas provide the highest level of protection to habitat, animals, plants and areas of cultural significance by prohibiting all forms of fishing and collecting as well as anchoring on reefs. Activities that do not harm plants, animals or habitats are allowed in sanctuary zones. In CBMP Sanctuary zones comprise approximately 27.5 % of the Marine Park. Examples of the following habitat types are incorporated into sanctuary zones in the CBMP Zoning Plan.

- Estuarine communities: seagrass and mangrove communities are represented in sanctuary zones, as are a range of sand flats that support a variety of shorebirds and migratory waders.
- Beach habitat: protection is provided for several sandy beach “shallows” that are important nursery and feeding areas for a variety of fish as well as important habitat for various invertebrates such as molluscs, amphipods and worms.
- Rocky shores (e.g. rock platforms and boulder habitats): exposed areas around Cape Byron and Broken Head were identified as supporting distinct rocky shore communities. A sanctuary zone is included to protect the unique oceanic lagoon (Bream Hole/Moat) at Lennox Head which supports over 180 species of invertebrate animals and patches of oceanic seagrass.
- Soft sediment: representative examples at a range of ocean depths are included in sanctuary zones. Many species live on or within the sediment including prawns, spanner crabs, worms, molluscs and echinoderms.
- Subtidal and offshore reefs: including Middle Reef, Wide Wilsons, Cape Pinnacle, and the biologically diverse reefs surrounding Julian Rocks.

Habitat Protection Zones

Habitat protection zones conserve marine biodiversity by protecting habitats and reducing high impact activities. A range of activities are allowed in habitat protection zones including some forms of commercial fishing and recreational fishing and collecting which is restricted to a list of commonly taken species. Habitat protection zones comprise approximately 18.7% of CBMP. The Zoning Plan ensures that all estuaries, beaches and intertidal rocky shores that are not included within sanctuary

zones, are included in habitat protection zones or, for management reasons, in special purpose zones.

General Use Zones

General use zones provide for a wide range of activities including most commercial fisheries and recreational fishing. General use zones complement other marine park zones and provide an integrated approach to the management of the Marine Park. All standard NSW fishing regulations and bag limits apply. Some forms of commercial fishing such as setline/dropline, longline and purse seine net fishing are prohibited in general use zones and all other zones of the Marine Park. General use zones comprise approximately 53.5% of CBMP.

Special Purpose Zones

Five special purpose zones together cover approximately 0.2% of CBMP. These zones provide for the management of oyster leases in Marshalls Creek a boat harbour in the Brunswick River, traditional use and rehabilitation of Belongil Creek and Tallow Creek, as well as allowing access for people with a disability to be able to fish from a popular board-walk at Lennox Head.

Figure 4. Cape Byron Marine Park Zoning Plan

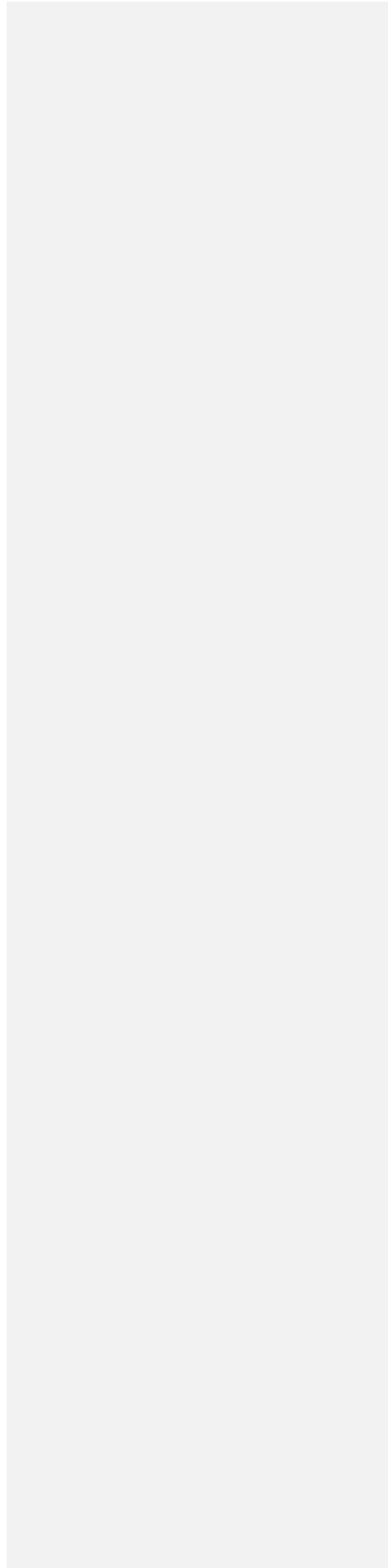
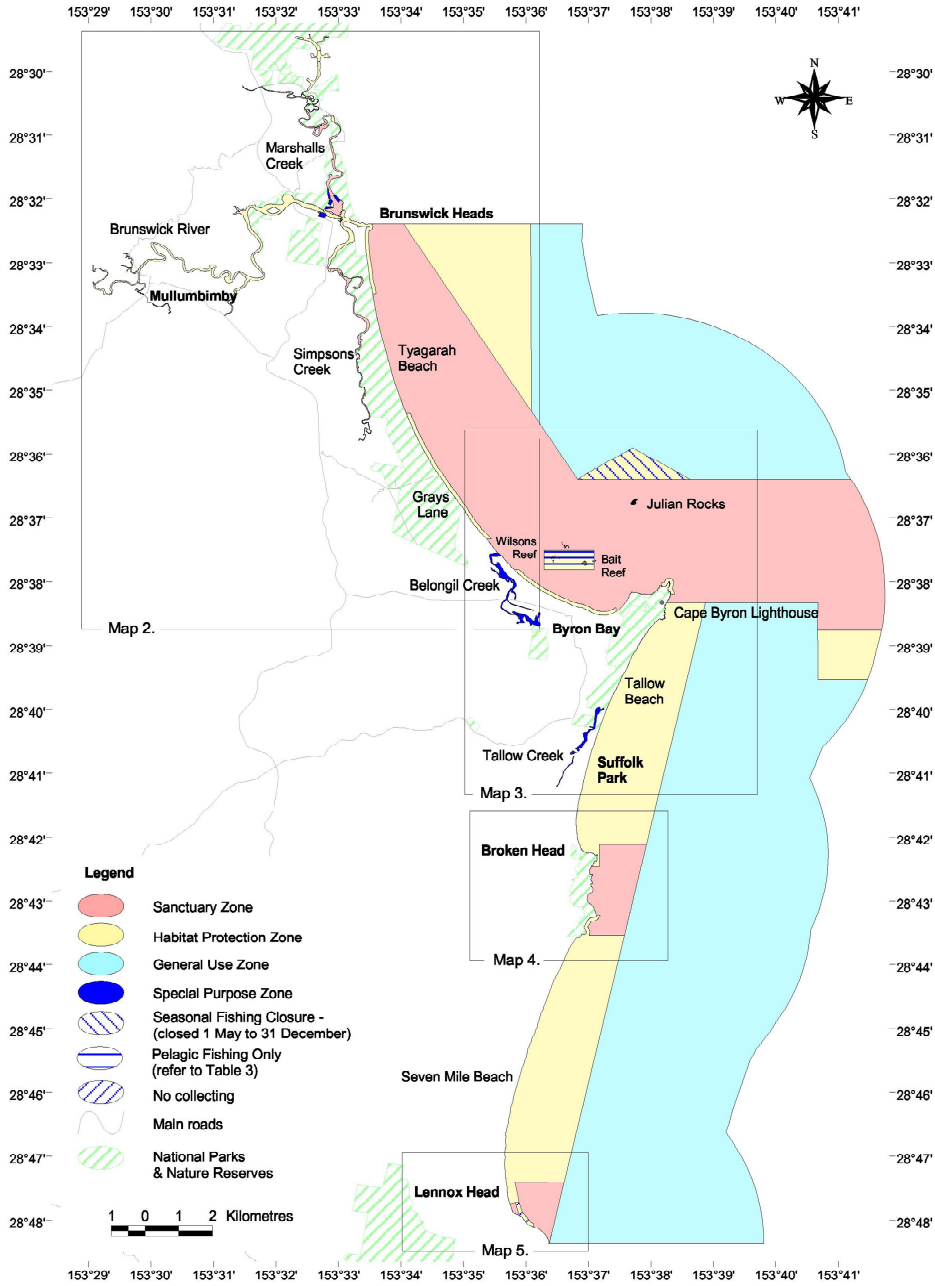


Table 1. Activity table - Cape Byron Marine Park

Activity	General Use Zone	Habitat Protect Zone	Sanctuary Zone
Commercial Fishing			
Line fishing	✓	✓(a)	X
Spanner crab netting	✓	✓(b)	X
Lift netting for bait only (non-saleable)	✓	✓(b)	X
Fish trapping	✓	✓(b)	X
Lobster trapping	✓	✓(b)	X
Eel /crab trapping	✓	✓(c)	X
Hand gathering (pipis and beachworms)	✓	X(d)	X
Beach hauling	✓	X(e)	X
Prawn trawling	✓	X	X
Purse seine netting	X	X	X
Setline/dropline	X	X	X
Longlining (surface and demersal)	X	X	X
Estuary mesh netting	X	X	X
Recreational Fishing			
Line fishing	✓	✓(a)	X
Trapping	✓	✓(b)	X
Spearfishing	✓	✓(f)	X
Netting	✓	✓(g)	X
Collecting			
Collecting (recreational, bait / food)	✓	✓(b)	X
Collecting (scientific / educational)	P	P	P
Collecting for aquariums (private)	P	P	x
Collecting for aquariums (commercial)	x	x	x
Commercial Tourism			
Commercial tour operators (non-ext..)	P(h)	P(h)	P(h)
Charter Fishing	P	P	X
Recreational Boating, Diving			
Recreational boating	✓	✓	✓
Recreational diving/snorkelling	✓	✓	✓
Anchoring	✓	✓	✓(h)
Personal watercraft and hovercraft	P(h)	P(h)	P(h)
Other Activities			
Aquaculture	✓(i)	✓(i)	X
Organised events	P	P	P
Research	P	P	P

Symbol in Table

Explanation

✓	Activity is allowed as of right in the zone
X	Activity is prohibited in the zone
P	Permit form the Marine Parks Authority or other government agency required for activities that are consistent with marine park zoning.
(a) – (i)	Additional caveats on use that apply generally or in specific zones

Managing human activities in Cape Byron Marine Park

In addition to the laws which are in place to regulate human activities in the marine environment such as fisheries legislation, human activities in marine parks are also regulated through the application of the provisions of marine parks legislation including the provisions of zoning plans and the marine parks permit system. Most passive forms of use of the marine environment such as swimming, beach going, diving and boating may take place in marine parks just as they do in areas outside marine parks.

Extractive uses such as commercial and recreational fishing and collecting however, in addition to being regulated under fisheries legislation, in marine parks are also regulated under the provisions of the marine park zoning plan as described previously. Also, other activities such as commercial tourist operations, research, and organised sporting and cultural events are regulated through the marine park zoning plan and permit system (see Table 1). This enables marine park managers to impose specific conditions on such activities to ensure they are conducted in a sustainable manner and don't unduly impact on the use or enjoyment of the marine park by others.

In addition, in accordance with the provisions of the Marine Parks Act, there are a number of requirements placed on authorities seeking to undertake or to approve works to be undertaken within or adjacent to a marine park. Specifically, before determining a development application under Part 4 of the Environmental Planning and Assessment Act 1979 to undertake a development within a marine park, a consent authority must take into consideration the objects of the Marine Parks Act, the objects of the zone, any permissible uses of the area concerned, and any relevant marine park closures. If the consent authority intends to grant consent to the development the authority must first obtain the concurrence of the relevant Ministers to the granting of the consent.

Similarly, in determining a development application under Part 4 of the Environmental and Planning Assessment Act for the carrying out of development on land that is in the locality of a marine park, the consent authority must take into consideration the objects of the Marine Parks Act, the permissible uses of the area concerned under the regulations, and any advice given to it by the Marine Parks Authority about the impact on the marine park of development in the locality. If the consent authority is of the opinion that development proposed in the development application is likely to have an effect on the plants or animals within the marine park and their habitat, the consent authority must consult with the Marine Parks Authority before finally determining the application.

Furthermore, developments proposed to be undertaken in a marine park that do not require consent under Part 4 of the Environmental Planning and Assessment Act, require approval from the Marine Parks Authority in the form of a marine parks permit.

Consequently, developments in or adjacent to a marine park can still proceed but are subject to an additional layer of approvals specifically aimed at assessing and mitigating impacts on the marine environment. The experience at CBMP has been that once local government planners and managers get used to the need for additional marine parks approvals they generally support this requirement and seek input from marine parks staff early on in the assessment of any developments that may impact on the Marine Park. Such a process leads to better outcomes for the

environmental management of the marine [and has been incorporated into a memorandum of understanding that is currently being finalised between the Marine Parks Authority and local government authorities.](#)

Conclusions

This level of regulation of human activities in a marine park ensures a high level of environmental management of the various activities that take place in a marine park with the aim that they are conducted in a sustainable manner. This also applies to works that are undertaken in or adjacent to a marine park. Consequently, the model for management provided by multiple use marine parks provides a structured way to plan for and manage a variety of issues and uses and should be considered by authorities when seeking to manage marine and coastal environments into the future, particularly in the face of challenges posed by climate change and sea level rise.

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