



Australian Government

Great Barrier Reef  
Marine Park Authority

# Recreation Management Strategy for the Great Barrier Reef Marine Park





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# **Recreation Management Strategy** for the Great Barrier Reef Marine Park

*Recreation - an independent visit for enjoyment that is not part of a commercial operation*

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Published by the Great Barrier Reef Marine Park Authority

ISBN 9781921682414 (Electronic document: pdf)

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**The National Library of Australia Cataloguing-in-Publication entry :**

Recreation management strategy for the Great Barrier Reef Marine Park [electronic resource] / Great Barrier Reef Marine Park Authority.

ISBN 9781921682414 (Electronic document: pdf)

Includes bibliographical references.

Marine parks and reserves--Queensland--Great Barrier Reef--Management.  
Great Barrier Reef Marine Park (Qld.)--Recreational use.  
Great Barrier Reef Marine Park Authority.

333.91641709943

**Cover:** Audi Hamilton Island Race Week, photographer Andrea Francolini.

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## EXECUTIVE SUMMARY

Recreation is one of the major uses of the Great Barrier Reef Marine Park (Marine Park). Recreation is woven into the social fabric of adjacent coastal communities and plays an important role in the health and wellbeing of regional communities. This Strategy sets out the approach of the Great Barrier Reef Marine Park Authority (GBRMPA) in managing recreational use within the Marine Park.

It is estimated that there are over 14 million recreational visits to the Marine Park by Great Barrier Reef catchment residents every year, plus visits by free and independent travellers from outside the catchment (including grey nomads and cruising yachties). Most people visit the Marine Park to boat, fish, sail, dive, snorkel and swim. Increasingly, opportunities to appreciate and understand Aboriginal and Torres Strait Islander cultures and their intricate links with the Great Barrier Reef has become an experience sought by recreational users.

The GBRMPA is one of a number of agencies with responsibilities for managing recreation in the Marine Park; others include the Queensland Department of Environment and Resource Management (partners in field management of the Marine Park); Fisheries Queensland (managers of the fisheries resource under the Offshore Constitutional Settlement), Queensland Boating and Fisheries Patrol, Maritime Safety Queensland and the Commonwealth Department of Sustainability, Environment, Water, Population and Communities. The GBRMPA employs a number of management tools in managing recreational use, ranging from the *Great Barrier Reef Marine Park Act 1975* and its Regulations to partnership programs and education. All are supported by risk-based compliance and enforcement.

The *Great Barrier Reef Outlook Report 2009* found that the Great Barrier Reef supports a wide variety

of recreational activities, including fishing, that generate regional economic value, and that the impacts of recreation are mainly localised in inshore areas around major population centres. In addition, it found that visitors to the Great Barrier Reef are consistently very happy with their visit and would recommend the experience.

The review of management effectiveness for recreation undertaken as part of the Outlook Report concluded that there was no overall strategy for managing recreation, a lack of

coordination between managing agencies as well as a lack of targeted management objectives to properly assess effectiveness.

This Strategy is a first step in addressing these shortcomings. It is designed to provide an overarching framework for the management of recreation by the GBRMPA, to facilitate more coordinated management and to set out in the public arena the management approach of the GBRMPA.

Achieving GBRMPA's vision requires a risk-based approach to the management of recreation, where the emphasis is on those issues that present the highest risk to the values of the Marine Park. This

Strategy consolidates the management arrangements of the GBRMPA, with a strong emphasis on maintaining, applying and enhancing the suite of management tools that can be applied to emerging recreation issues. Action is identified in a range of areas, particularly education and public awareness, best practice, understanding recreational use, working with others and in-Park arrangements. Any impacts from the recreational take of marine resources will continue to be addressed in other strategies, policies and management arrangements of both the GBRMPA and its partner agencies and are not the focus of this Strategy.

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Great Barrier Reef Marine Park Authority's vision for recreation:

*Ecologically sustainable recreational use of the Great Barrier Reef Marine Park where the Great Barrier Reef is protected and where visitors can appreciate its values and enjoy recreational experiences, now and into the future.*

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# RECREATION MANAGEMENT STRATEGY

## Purpose

The purpose of this Recreation Management Strategy for the Great Barrier Reef Marine Park is to:

- Provide an overarching framework for the management of recreation within the Great Barrier Reef Marine Park
- Facilitate coordinated management of recreation with other managing agencies
- Set out the management approach of the Great Barrier Reef Marine Park Authority in the public arena.

The Strategy has been developed in response to the *Great Barrier Reef Outlook Report 2009* which noted recreation as an emerging issue for the Great Barrier Reef and identified the lack of an overall strategy for managing recreation.

## Scope

The Great Barrier Reef Marine Park Authority (GBRMPA) defines recreation as an independent visit for enjoyment that is not part of a commercial operation. It is distinct from tourism where a visitor has paid to be part of a commercial operation to visit the Great Barrier Reef Marine Park (Marine Park), including those visitors who undertake recreational fishing from a charter fishing vessel.

This Strategy encompasses all recreation undertaken in the Marine Park, for example, boating, snorkelling, recreational fishing and sightseeing.

While the management of recreation in the Marine Park is undertaken by a range of agencies, this Strategy focuses on the areas of management where the GBRMPA has significant responsibilities.

## Vision for recreation in the Great Barrier Reef Marine Park

Recognising the importance of the Great Barrier Reef to adjacent coastal communities, the Australian nation and the world, the vision for recreation in the Great Barrier Reef Marine Park is:

*Ecologically sustainable recreational use of the Great Barrier Reef Marine Park where the Great Barrier Reef is protected and where visitors can appreciate its values and enjoy recreational experiences, now and into the future.*

## Management objectives

In working towards this vision for recreation and in accordance with the objects of the *Great Barrier Reef Marine Park Act 1975* (the Act), the management activities of the GBRMPA are focused on achieving three objectives:

- A range of recreational opportunities is provided for.
- The major potential threats associated with recreation are minimised.
- Other managing agencies and the community are working with the GBRMPA to manage recreational use and the factors that affect it.

## Management approach

Within the Marine Park, recreational use is managed through a range of legislative and other tools administered by both Australian and Queensland Government agencies. Combined, they provide a comprehensive set of management arrangements for recreational use. With regard to its responsibilities, the GBRMPA employs a number of management tools, ranging from the Act and the *Great Barrier Reef Marine Park Regulations 1983* (the Regulations) to partnership programs and education. These tools are underpinned by a risk-based approach

to protection and management of the Marine Park.

In managing recreation, emphasis will be on those issues that present the highest risk to the values of the Marine Park now and into the future. To this end, development of this Strategy was informed by the findings of the *Great Barrier Reef Outlook Report 2009* and a comprehensive risk assessment of risks associated with recreation (summarised in Table 1), developed with advice from external stakeholders.

The recreational take of marine resources is identified as a risk area in relation to impacts on the Great Barrier Reef ecosystem from recreation. This matter will continue to be addressed in other strategies, policies and management arrangements of both the GBRMPA and partner agency Fisheries Queensland and is not the focus of this Strategy.

Recognising the range of other managing agencies, community groups and individuals who have an interest in management of the

Great Barrier Reef Marine Park, the GBRMPA will work collaboratively with these groups to achieve sustainable recreational use.

In all management actions, a high priority will be placed on open communication with interested parties and on respecting their needs and aspirations. In addressing any emerging issues for recreation, the consideration of new management arrangements will continue to include appropriate consultation with interested stakeholders and Traditional Owners.

At the same time, the GBRMPA will continue to work collaboratively to pursue its broader programs that address the major threats to the Great Barrier Reef ecosystem which in turn are likely to represent the greatest influence on the recreational experience (for example, climate change, loss of coastal habitats and catchment run-off).

## Management strategies

Over the coming years, the GBRMPA will continue to apply its suite of tools to manage recreation (Table 2, page 4), with an increased focus on understanding recreational use,

**Table 1.** Summary of risks associated with recreation in the Great Barrier Reef Marine Park

Threat	Residual Risk	Future Trend			
<b>Impacts on Great Barrier Reef ecosystem</b>					
Interference with species of conservation concern	Medium	↑↑			
Damage and disturbance during snorkelling and diving	Low	↔			
Anchoring and grounding of vessels	Medium	↑↑			
Recreational take of marine resources	Medium	↑↑			
Introduction of exotic species - hull fouling	Low	↑			
Discharges and spills - waste discharge (including sewage)	Medium	↑			
Discharges and spills - small spills	Low	↑			
Litter and marine debris	Medium	↑			
Dredging and dumping of spoil	Low	↑↑			
Clearing or modifying coastal habitats	Medium	↑↑			
Decreased water quality - coastal marine facilities	Medium	↑			
<b>Impacts on cultural heritage</b>					
Damage to historic and cultural sites and artefacts	Low	↔			
Interruption of Traditional Owner use and access to resources	Medium	↑			
<b>Impacts on recreation experience</b>					
User conflict	Low	↑			
Shifts in recreational use	Very Low	↑			
<b>Impacts on Marine Park management</b>					
Lack of compliance	Medium	↔			
Lack of information for effective management	Medium	↔			
Inadequate user understanding of management arrangements	Medium	↔			
<b>Risk level</b>	Very Low	Low	Medium	High	Very High

working with others, education and public awareness, best practice and in-Park arrangements.

### Understanding recreational use

A management approach that is risk-based and can adapt to change relies on a strong and up-to-date knowledge base. Ongoing information is required on both recreational use of the Great Barrier Reef and the external factors that influence it. This information will be particularly relevant during development of future Outlook Reports.

Key management components:

- Understanding recreational users, their motivations, current knowledge and activities
- Monitoring recreational use, its benefits and impacts, aligned with the five-yearly Outlook Report cycle
- Tracking and reporting trends in the factors that influence recreation, such as population growth and infrastructure development.

### Working with others

Many agencies play a significant role in managing recreation in the Marine Park including the Queensland Government's Department of Environment and Resource Management, Department of Employment, Economic Development and Innovation and Maritime Safety Queensland, plus the Australian Government's Department of Sustainability, Environment, Water, Population and Communities and the Customs and Quarantine Services (see Appendix 2, page 35). The GBRMPA is committed to working collaboratively with these agencies, as well as the Traditional Owners, community groups and individuals that have an interest in management of the Marine Park. Collaboration, coordination and consistency are important factors in ensuring that the Marine Park is protected and recreational use is ecologically sustainable.

Key management components:

- Collaborating with other agencies to ensure management of recreation in the Marine Park is coordinated and consistently applied
- Building and maintaining productive connections between the GBRMPA, management agencies and recreational

user groups who work towards Marine Park protection and sustainable recreation

- Engaging with Traditional Owners about recreation and its management, focusing on existing processes and networks
- Collaborating with other agencies and recreational user groups who provide information and training to recreational users in order to improve skills and knowledge relevant to visiting the Marine Park
- Fostering understanding within other managing agencies about general management arrangements for the Marine Park and the key issues affecting its outlook
- Collaborating with other agencies to address external factors affecting the Marine Park and its recreational use.



### Education and public awareness

Education and public awareness is a vital component of the management of recreation in the Marine Park. It is aimed at improving user understanding of the value and significance of the Marine Park, the management arrangements in place and the ways in which they can minimise their impact on the Reef.

Key management components:

- Focusing education resources on the key messages for the Marine Park, recreation management arrangements and best practices for recreation
- Targeting education and awareness activities at the full range of user groups
- Improving user understanding of Traditional Owner cultural connections, rights and responsibilities including opportunities to experience culture



- Educating young community members about the Marine Park, its use and management through the Reef Guardian Schools Program.

### Best practice

There are a variety of opportunities to encourage the uptake of best practices by recreational users and for them to be active stewards for the Reef.

**Table 2.** Summary of GBRMPA management arrangements for recreation and associated threats

	Legislation	Zoning Plan	Permits	Management plans	Site management	Policy	Research	Partnerships and best practice	Education and community awareness
<b>Activity</b>									
Viewing nature	✓			✓	✓	✓		✓	✓
Fishing	✓	✓	#					✓	✓
Boating	✓	✓	#	✓	✓	✓	✓	✓	✓
Using high speed vessels	✓	✓	*#	✓	✓	✓		✓	✓
Camping	✓	✓	✓					✓	✓
<b>Supporting infrastructure</b>									
Coastal marine facilities	✓	✓	✓			✓		✓	
Private moorings	✓	✓	✓	✓	✓	✓		✓	✓
Reef protection infrastructure	✓			✓	✓	✓		✓	✓
<b>Impacts on Great Barrier Reef ecosystem</b>									
Interference with species of conservation concern	✓			✓		✓		✓	✓
Damage and disturbance during snorkelling and diving	✓	✓						✓	✓
Anchoring and grounding of vessels	✓			✓	✓	✓		✓	✓
Recreational take of marine resources	✓	✓					✓	✓	✓
Introduction of exotic species - hull fouling	✓					✓		✓	✓
Discharges and spills - waste discharge (including sewage)	✓			✓				✓	✓
Discharges and spills - small spills	✓							✓	✓
Litter and marine debris	✓							✓	✓
Dredging and dumping of spoil	✓		✓			✓			✓
Clearing or modifying coastal habitats	✓							✓	
Decreased water quality - coastal marine facilities						✓		✓	
<b>Impacts on cultural heritage</b>									
Damage to historic and cultural sites and artefacts	✓			✓				✓	
Interruption to Traditional Owner use and access to resources	✓			✓				✓	
<b>Impacts on recreation experience</b>									
User conflict	✓	✓	✓	✓	✓		✓	✓	✓
Shifts in recreational use			✓	✓	✓				✓
<b>Impacts on Marine Park management</b>									
Lack of compliance	✓					✓		✓	✓
Lack of information for effective management							✓	✓	
Inadequate user understanding of management arrangements								✓	✓

# Only for organised events that are assessed as more than 'low impact'

\* Only for hovercraft

Key management components:

- Making available and promoting up-to-date best practices for recreational users.
- Receiving ongoing contemporary advice from GBRMPA Advisory Committees and relevant managing agencies on opportunities to encourage recreational users to follow best practices.

### In-park management

The management requirements set out in the Act, its Regulations, the *Great Barrier Reef Zoning Plan 2003* (Zoning Plan), plans of management and site management, combined with in-Park infrastructure, are the backbone of direct in-Park management of recreational use.

Key management components:

- Maintaining and applying a contemporary and adaptive set of management arrangements, such as the Act, Regulations, Zoning Plan, plans of management and site management
- Working with other agencies so that field management activities for recreational users are coordinated and aimed at promoting voluntary compliance while providing effective deterrence and enforcement (including for illegal activities that may impact on recreational use)
- Providing adequate and well-maintained in-Park infrastructure, such as moorings, reef protection markers and signs, that maintain the recreational experience and address environmental impacts.

### Timing, resources and priorities

The management activities outlined in this Strategy will be undertaken by the GBRMPA within existing resources and implementation will be integrated into all relevant components of the GBRMPA's work program. The installation and maintenance of more in-Park infrastructure, such as public moorings and Reef Protection Markers to meet growing recreational visitation, would require additional resources or alternative funding sources.

Over the coming years, emphasis will be on improving understanding of recreation and the factors that influence it, improving education and best practice arrangements for recreational users, and on further building collaborative

arrangements with partner managing agencies. Early priority will be given to updating and expanding the best practices for recreational users and making these easily accessible, and increasing the recreational expertise on the Tourism and Recreation Reef Advisory Committee.

Table 3 (over page) is a summary of the areas where management resources and priority will be focused to address the most significant threats associated with recreation.

Work to collate and assess information relevant to recreation will be undertaken so that it is available as part of the five-yearly Outlook Report cycle.

This Strategy will be reviewed following completion of the 2014 Outlook Report.

### Assessing effectiveness

In accordance with the requirements of Section 54 of the Act, the effectiveness of management measures to protect and manage the Great Barrier Reef ecosystem (including those in relation to recreation) will be assessed in a five-yearly cycle as part of the development of the Outlook Report. The assessment will examine the extent to which the Strategy's objectives have been achieved, that is, a range of recreation opportunities provided for, potential threats associated with recreation addressed and a range of partners engaged in managing recreation.





**Table 3.** Areas of management focus

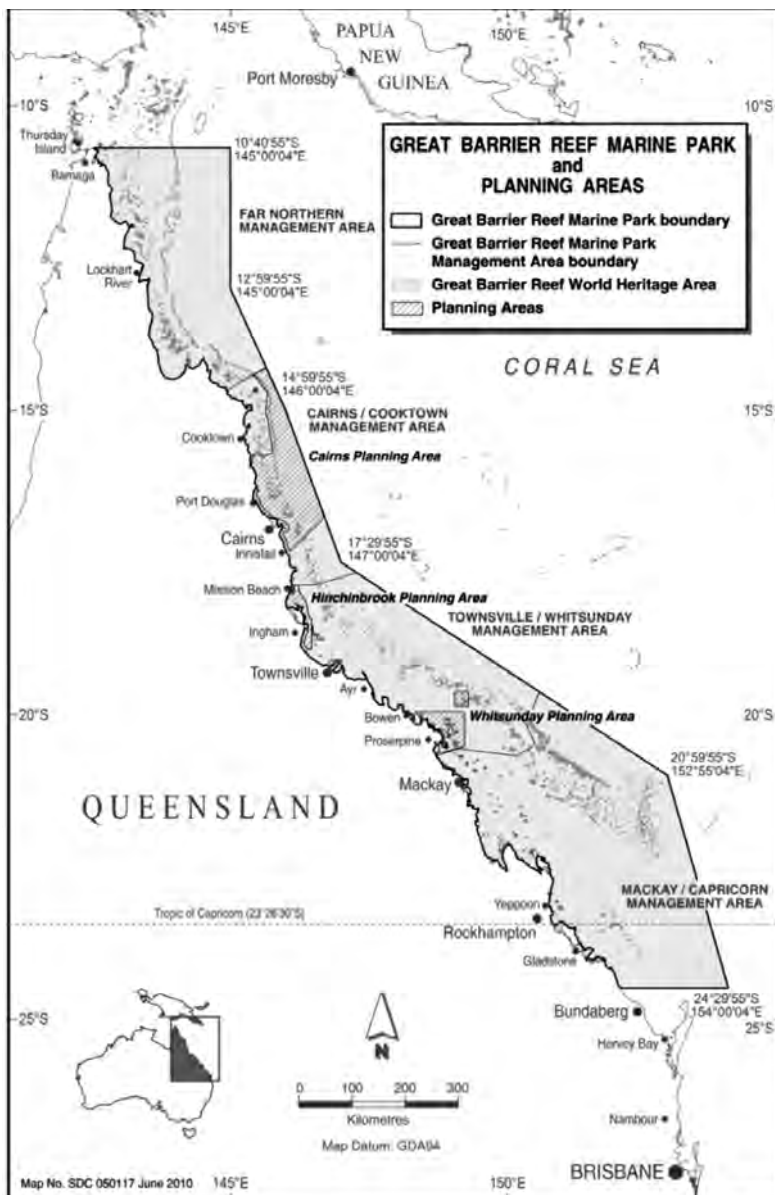
Threats	Management focus				
	Understanding recreational use	Working with others	Education and public awareness	Best practice	In-Park management
<b>Impacts on Great Barrier Reef ecosystem</b>					
Interference with species of conservation concern			✓	✓	✓
Anchoring and grounding of vessels			✓	✓	✓
Recreational take of marine resources	✓	✓	✓	✓	✓
Discharges and spills – waste discharge (including sewage)		✓	✓	✓	✓
Litter and marine debris		✓	✓	✓	✓
Clearing or modifying coastal habitats		✓	✓		
Decreased water quality – coastal marine facilities		✓	✓		
<b>Impacts on cultural heritage</b>					
Interruption of Traditional Owner use and access to resources		✓	✓	✓	
<b>Impacts on Marine Park management</b>					
Lack of compliance		✓	✓		✓
Lack of information for effective management	✓	✓			
Inadequate user understanding of management arrangements.	✓	✓	✓		

# BACKGROUND

## 1. Context

The Great Barrier Reef is the largest and best known coral ecosystem in the world, spanning a length of 2300 km along Queensland's east coast (Map 1). Within the area there are also approximately 900 islands, including both cays and continental islands. The Great Barrier Reef is a World Heritage Area, is included on Australia's National Heritage List and is classified as a Particularly Sensitive Sea Area by the International Maritime Organisation.

For over 60,000 years Aboriginal and Torres Strait Islanders have held complex and deep-seated physical, emotional, cultural, social and spiritual connections with the Great Barrier Reef and there are approximately 70 Aboriginal and Torres Strait Islander Traditional Owner groups with connections to sea country. These groups have a rich heritage of traditional knowledge, practice and belief which underpins a dynamic and contemporary relationship with country, both land and sea.



Map 1. The Great Barrier Reef Marine Park boundaries

The Commonwealth Great Barrier Reef Marine Park stretches from Cape York to north of Bundaberg and includes some Commonwealth islands. The Marine Park is complemented by the Queensland Great Barrier Reef Coast Marine Park in adjacent Queensland waters. The adjacent Great Barrier Reef catchment area has a population of 1,115,000 concentrated in regional centres along the coast.

The GBRMPA is responsible for the long-term protection, ecologically sustainable use, understanding and enjoyment of the Great Barrier Reef for all Australians and the international community through the care and development of the Marine Park. Management is guided by an ecosystem-based management approach. In managing the Marine Park, the GBRMPA works in partnership with a wide range of government agencies, community groups and individuals.

A joint management arrangement between the Australian and Queensland Governments integrates management of the Great Barrier Reef Marine Park and Great Barrier Reef Coast Marine Park, together with protected areas on adjacent



islands. Many other Australian and Queensland Government agencies, local governments, industry groups, community groups and individuals also directly participate in protection and management of the Great Barrier Reef.

The Great Barrier Reef Marine Park is a multiple use area. As well as being a major recreational area, it supports significant commercial industries, including marine tourism, fishing and shipping, is central to the culture of Traditional Owners, is an internationally important scientific resource and is an important area for Defence training.

The 2009 Outlook Report<sup>1</sup> indicates that the Great Barrier Reef ecosystem is generally healthier than most coral reef ecosystems around the world. However its condition has declined significantly since European settlement and, as a result, the overall resilience of the ecosystem has been reduced. The Report identifies climate change, continued declining water quality from catchment run-off, loss of coastal habitats from coastal development and some remaining impacts from fishing as the priority issues reducing the Reef's resilience. The Report also identifies that increasing regional populations and economic development may mean an increase in use, especially from recreation, and therefore the potential for greater impact to the ecosystem.

## Consultation

In developing this Strategy, the GBRMPA received detailed advice from its Tourism and Recreation, Indigenous, Catchment and Coastal and Ecosystems Reef Advisory Committees, including a Working Group of the Tourism and Recreation Reef Advisory Committee. General advice on issues and potential approaches was also received from the eleven regional Local Marine Advisory Committees.

The GBRMPA also consulted with a range of Australian and Queensland Government agencies with responsibilities for recreation in the Great Barrier Reef area.

## 2. Opportunities for recreation

The Great Barrier Reef Marine Park is a vast natural area. People who visit for recreation are usually seeking to learn about and appreciate nature, relax, spend time with friends and family, be active and adventurous, or develop new skills.

Generally, recreational users may access all of the Marine Park except the Preservation Zone (0.2 per cent of the Marine Park), two parts of the Scientific Research Zone and three small Special Management Areas in the Far Northern Management Area.

Traditional Owners actively engage with the Marine Park to care for their sea country. Many of these activities are driven by the complex relationship between Aboriginal and Torres Strait Islander people and the biodiversity found within their traditional estates. The Great Barrier Reef is a cultural landscape that has emerged slowly across time, as landscape layers reflect patterns of use. To this day, the Great Barrier Reef sustains composite and complex patterns of interrelationships between people, places and events that have remained in the landscape.

The main recreation opportunities pursued in the Marine Park are:

- motorised boating (ranging from dinghies to superyachts)
- sailing
- jet skiing and water skiing (i.e. motorised water sports)
- kayaking, kite surfing and sailboarding (i.e. non-motorised water sports)
- fishing
- snorkelling
- SCUBA diving
- nature appreciation (such as birdwatching, turtle watching and whale watching)
- swimming
- sightseeing
- photography
- camping on some islands within the Marine Park.

Adjacent beaches and the islands and cays of the Great Barrier Reef are the base for many of the recreational activities in the Marine Park.



Various types of vessels are used when undertaking recreational activities, principally motorised boats, yachts, jet skis and kayaks. Some visitors use commercial ferry services to reach their destination (for example, for island camping).

All of these recreational opportunities are available at sites along the length of the Marine Park, sometimes in a very remote setting (such as off Cape York and much of the Capricorn Bunker Group) and sometimes in more popular locations such as offshore Cairns, in the Whitsundays and adjacent to other regional centres.

### 3. Current state and trends of recreation use

The following data provides an insight into recreational activities and is drawn from a range of sources with slightly differing methodologies that are not directly comparable. The Strategy recognises there is a need to better understand recreational use.

#### 3.1 Numbers and activities

The estimated total number of independent recreational visits to the Marine Park by residents of the Great Barrier Reef catchment was 14.6 million in 2008.<sup>2</sup> In that year, an estimated 55 per cent of coastal residents (living within 50 km of the coast) visited the Marine Park.<sup>2</sup> These visits include those who participate in swimming and beach-based activities.

The number of visitors from the catchment appears to have increased substantially since 2003, most likely as a result of three factors: an increase in population, an increase in the proportion of the population visiting the Marine Park and an increase in the average number of visits per person.<sup>2</sup> There is an as yet unquantified number of free and independent travellers visiting the Marine Park from outside the catchment (for example, grey nomads and cruising yachties).

The majority of visits to the Marine Park are vessel-based (55 per cent in 2003, 66 per cent in 2008), mostly in motorised vessels.<sup>2</sup>

The most popular water-based activities are swimming, motorised boating and fishing, with snorkelling, sailing, diving and jet skiing being significant additional activities (Figure 1). These activities have changed slightly in relative

popularity in recent years, with motorised boating becoming more popular. The proportional use of sailing boats has decreased slightly over the last decade.<sup>2</sup> Activities like shell collecting are now far less popular than early in the twentieth century.<sup>3</sup>

The majority of vessel-based trips are undertaken in groups of between two and four people and just over half of the participants are male (60 per cent in 2003, 54 per cent in 2008).

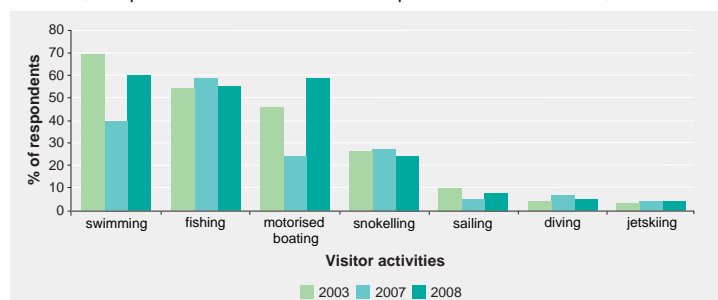


Figure 1. Main activities of visitors to the Great Barrier Reef

Four out of five recreational visits are for one day or less.<sup>2</sup>

The average number of visits by residents of the catchment has increased from 14 visits per person per year in 2003 to 15.5 in 2008. Half of those who visit from the Great Barrier Reef catchment do so more than seven times in a year and 17 per cent visit more than once a week.<sup>2</sup>

It is estimated that approximately 40 per cent of Queensland's recreational fishing is undertaken in the Marine Park, mostly focused in inshore areas close to population centres.

#### 3.2 Places visited

The main destinations for vessel-based trips are islands and, increasingly, reefs, shoals, cays, rocks and wrecks (Figure 2). Because by far the most common boat length for recreational vessels is 3 to 4.5 metres (Figure 3), most vessels

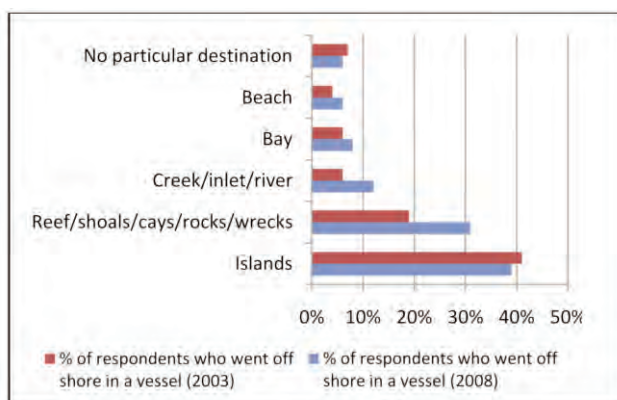


Figure 2. Main destination of vessel-based trips (2003, 2008)<sup>2</sup>

are not suited to trips well offshore. This concentrates recreational use in inshore areas close to urban centres.

Almost half of the vessel-based trips depart from the area between and including Cairns and Townsville (Table 4 and Map 2). In the southern region, departures from Mackay and the area between Mackay and Rockhampton increased markedly between 2003 and 2008.<sup>2</sup>

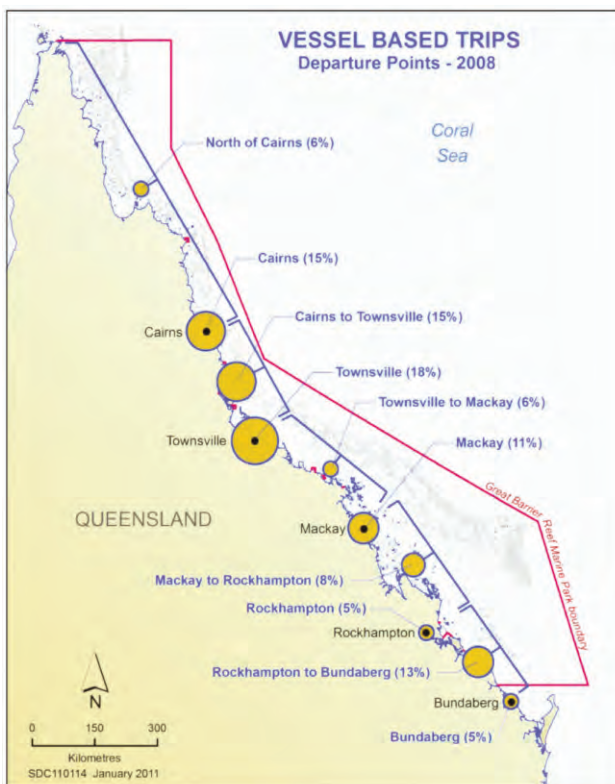
### 3.3 Satisfaction

The level of satisfaction of recreational visitors has remained relatively constant between 2003 and 2007, with bad weather and not catching enough fish being the main factors contributing to visitor dissatisfaction.<sup>1</sup>

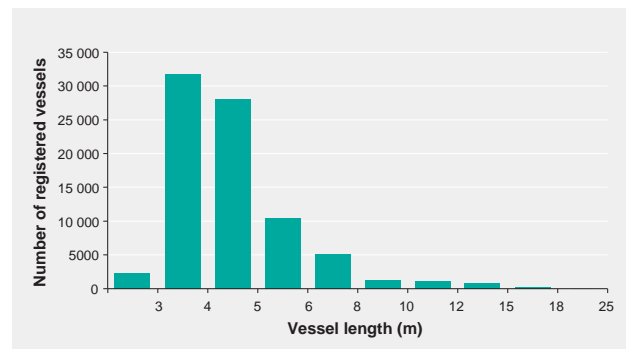
Almost all visitors to the Great Barrier Reef

**Table 4.** Departure point for most recent vessel-based trip<sup>2,4</sup>

Departure point	2003	2008
North of Cairns	4%	6%
Cairns	10%	15%
Between Cairns and Townsville	15%	15%
Townsville	15%	18%
Between Townsville and Mackay (inc Whitsundays)	14%	6%
Mackay	7%	11%
Between Mackay and Rockhampton	1%	8%
Rockhampton	6%	5%
Between Rockhampton and Bundaberg	15%	13%
Bundaberg	10%	5%



**Map 2.** Departure points for most recent vessel-based trips, 2008<sup>4</sup>



**Figure 3.** Registered recreational vessel size in the Great Barrier Reef catchment, 2007<sup>1</sup>

would return to the places they visited and would recommend the destination to other people. Despite anecdotal concerns about overcrowding, most visitors are either not concerned about the number of other people or vessels around them or consider that the number is about right.<sup>1</sup>

Great Barrier Reef catchment residents have a generally positive attitude to the Marine Park and their activities within it. Almost all participants in a 2008 survey considered that the Marine Park was a special and unique environment and more than just a place for catching fish. Two thirds thought there were many things they could do to improve the health of the Marine Park. Fifty five per cent considered that their activity in the Marine Park did not make much difference to the environment.<sup>2</sup>

There is anecdotal evidence that the role of green zones is being increasingly accepted by the recreational fishing community.

### 3.4 Value of recreation

The Great Barrier Reef is an integral part of the Queensland and Australian identity and the opportunity to enjoy the Marine Park is of enormous social and cultural value to Queensland coastal residents and to Australians more broadly. The Great Barrier Reef is seen as a beautiful place that is pristine and unique, both by those who have visited the Marine Park and those who are yet to visit.<sup>1</sup>

The important role that parks such as the Great Barrier Reef Marine Park play in the health and wellbeing of communities is recognised by the Australian-based Parks Forum: 'Parks are places of adventure and challenge, exercise, peace and quiet, recreation, gathering and relaxation. In them, we find a sense of enjoyment, strong community spirit and wonder in nature. Parks



offer a range of recreation activities to bring families and friends together in appealing places'.<sup>5</sup>

The most recent study of the economic value of recreational use (including recreational fishing) in the Great Barrier Reef catchment was undertaken in 2006/07. It estimated the contribution to the Australian economy at \$153 million.<sup>6</sup>

### 3.5 Impacts of recreation

There have been few studies of the impacts of recreational use of the Marine Park. The distribution of boat ownership and the size of vessels owned suggests that any impacts are likely to be mainly inshore, close to major regional centres. In relation to the Great Barrier Reef ecosystem, the 2009 Outlook Report concludes that, "apart from fishing, localised but frequent anchor damage to corals and seagrass meadows are likely impacts, along with littering, boat strikes on marine mammals and turtles, and fin damage to corals when snorkelling and diving. There is some risk of introducing species through fouling on recreational vessels, especially those from overseas". There are also potential impacts from the grounding of small vessels, oil and chemical spills, vessel sewage discharge, and disturbance of wildlife (particularly species of conservation concern).

With regard to recreational fishing, an estimated 7400 tonnes of inshore fish species and 3000 tonnes of reef fish are caught each year. The main target species are coral trout and cod, emperor, tropical snapper, barramundi, bream, mackerel, whiting, crabs, lobster and bait fish.<sup>1</sup> A large proportion (for example, 60 per cent for inshore species) of the recreational catch is subsequently released, either through the increasingly popular practice of catch and release or because they are undersized or unwanted. The survival success of many of the released species is not well understood.

The ecosystem effects and cumulative impacts of fishing are poorly understood, but are likely to be concentrated in inshore areas close to major population centres. Local depletion, particularly of some inshore species, is of concern in some areas. In contrast, the fishing practices of recreational users are unlikely to result in significant physical impacts on the habitats of the Great Barrier Reef.

Illegal recreational fishing continues in the



Marine Park, particularly fishing in zones closed to fishing. In recent years, by far the majority of fishing offences have related to recreational fishing, reflecting the high proportion of recreational fishers. Research indicates that illegal fishing activities have a significant impact on fish populations within the no-take zones.<sup>7</sup>

Recreational use of the Marine Park has the potential to damage cultural heritage, such as historic sites and sites of cultural significance to Traditional Owners. The removal of culturally significant artefacts is also a potential impact. Traditional Owner connections to their sea country, including access to resources, are being interrupted, at least partly because of increasing recreational use.

Recreational use of the Marine Park can also result in flow-on impacts to adjacent Great Barrier Reef islands, particularly disturbance to seabirds and other wildlife, trampling of coastal vegetation and the introduction of weeds and feral animals.

## 4. Factors influencing recreation

Recreation in the Great Barrier Reef Marine Park is mostly nature-based and relies strongly on a healthy and resilient Great Barrier Reef ecosystem. Therefore, as well as socio-economic factors such as population growth and trends in leisure time, future recreation in the Marine Park is likely to be significantly affected by the overall state of the Great Barrier Reef ecosystem.

This Strategy examines four major factors that, combined, are predicted to substantially influence recreation: climate change, coastal development (including population trends), catchment run-off, and the interplay between

recreation and the other direct uses of the Marine Park.

#### 4.1 Climate change

The 2009 Outlook Report shows that almost all Great Barrier Reef species will be affected by climate change, some seriously. Coral reef habitats are one of the most vulnerable components of the ecosystem. It is expected that, over coming decades, there will be serious flow-on effects on uses of the Great Barrier Reef, including recreation. Patterns of recreational use could change and levels of visitor satisfaction could decline as a result of declining health of coral reefs, changes in species composition (including fish abundance and distribution), rising sea levels and the increased frequency of severe weather events.

#### 4.2 Coastal development and population growth

There are 72 coastal urban centres (i.e. populations greater than 200) directly adjacent to the Great Barrier Reef coast, with four centres of populations greater than 50,000. The population of the Great Barrier Reef catchment continues to increase steadily, with an average increase of 1.6 per cent per annum from the late 1980s to 2007. The population of the Great Barrier Reef catchment is approximately 1,115,000 and it is expected to grow to 1,812,313 by 2031<sup>8</sup> at an average annual growth rate of nearly two per cent. This predicted growth is particularly evident in the coastal cities of Gladstone, Mackay and Townsville (Table 5).

The median age of the catchment's population is also predicted to increase substantially over the next 25 years (Table 5) with the most significant growth in the over 65 years cohort.

An increasing population is likely to mean an increase in recreational use of the Marine Park. It is anticipated that expansions in the mining and exploration sectors, in particular, will fuel increases in recreation use, not only because of an increase in the base population but also because, for those engaged in this sector, incomes are relatively high and 'fly-in, fly-out' work arrangements can result in increased leisure time.

Vessel ownership has been steadily growing in the Great Barrier Reef catchment over several decades, with a rate of increase outstripping the rate of population growth. A total of 85,675 vessels were registered in the Great Barrier Reef catchment in December 2010. It is anticipated that an increase in vessel ownership will translate into an increase in recreational use, probably concentrated around the major regional centres.

With increasing use of the Marine Park comes an increasing demand for coastal infrastructure to access the area (for example, marinas and boat ramps). Construction and operation of these facilities can threaten the Great Barrier Reef ecosystem through damage to coastal habitats, dredging, dumping of spoil and effects on water quality. Improved access to the Marine Park through new roads (for example, on Cape York), marinas and boat ramps can also place greater pressure on areas with little previous use.

High demand and long wait times at popular access points can result in use being spread to adjacent, less popular areas as people choose to spend more time travelling and less time queuing. Unregulated beach access is also a threat to coastal habitats that support the Great Barrier Reef.

A growing population is also likely to result in

**Table 5.** Predicted growth in regional centres, 2006-2031<sup>8</sup>

Local Government Area	2006		2031		Change between 2006 and 2031	
	Total Population	Median Age	Total Population	Median Age	Total Population	65+ Age Group
Bundaberg	87,898	41	130,548	47	49%	57%
Gladstone	53,941	35	98,041	40	82%	72%
Rockhampton	107,517	37	153,256	41	43%	57%
Mackay	107,332	36	172,993	40	61%	64%
Townsville	165,278	33	270,500	39	64%	70%
Cairns	147,538	35	222,640	41	51%	68%



further damage to coastal habitats that support the Great Barrier Reef ecosystem. While present development affects only a small portion of the coast, a significant portion of coastal land has freehold status, providing potential for intensification of development and infrastructure activities with a growing population.

Increasing coastal development is also likely to result in an increase in marine debris and a decline in water quality as more litter and pollutants are washed out of creeks into the ocean. This affects the overall health of the ecosystem and, in addition, marine debris directly affects the enjoyment of people who use the Marine Park.

### 4.3 Catchment run-off

A finding of the 2009 Outlook Report is that increased concentrations of suspended sediments and agricultural chemicals are having significant effects on inshore areas of the Great Barrier Reef ecosystem that are close to agricultural areas. It reports that, while much continues to be done to improve water quality entering the Great Barrier Reef, it will be decades before the benefits are seen.<sup>1</sup>

A decline of inshore habitats as a result of poor water quality is expected to have implications for recreational use of these areas. Inshore coral reefs near developed areas have been affected by declining water quality, in turn affecting the quality of reef-based recreational activities. Enjoyment is also occasionally affected by algal blooms and increased turbidity which reduces underwater visibility.<sup>1</sup>

### 4.4 Other uses of the Marine Park

Other uses of the Marine Park, such as tourism, commercial fishing, shipping, scientific research, Defence activities and Traditional Owner

practices can affect recreational use and user enjoyment of the Marine Park, and can at the same time be affected by recreational use. There can also be negative interactions between different recreational uses, especially in relation to vessel speed, noise and the intrusiveness of an activity.

From time to time, the GBRMPA receives reports and complaints from recreational users who are dissatisfied about the activities of other users or who feel displaced by the activities of another user group. Examples include the use of jet-skis in inshore areas, motorboat races, commercial fishing in popular recreational fishing areas, and large tourism operations at destinations previously used only by local residents.

Historically, there have been concerns about negative interactions between recreation and tourism use of the Marine Park, especially in popular areas. Settings established in the Cairns, Hinchinbrook and Whitsundays Planning Areas in the late 1990s and early 2000s define a range of experiences in popular locations by specifying limits on the length of vessels accessing a location and the maximum group size. They have significantly reduced, but not eliminated, conflicts of use in these areas. The Cairns Area and the Whitsundays are expected to continue as popular tourism and recreation destinations and are therefore likely to require ongoing management attention.

Changing intensity and patterns of recreational use in the Marine Park can affect Traditional Owner values and experiences as more people undertake recreational activities in areas of particular significance to Traditional Owners. There is growing reports of this both in areas close to population centres and in more remote locations such as in the far north of the Marine Park. The Great Barrier Reef supports a biocultural diversity that is a rich asset for individuals and societies. Sustainable development of biocultural diversity (including resource use) for the benefit of present and future generations is an important element for Aboriginal and Torres Strait Islanders with connections to the Great Barrier Reef. Equitable access to Traditional resources is pivotal and, in some circumstances, in competition with other user groups including recreational users. There is a need to ensure effective strategies are implemented so that Traditional Owners are not disadvantaged or unreasonably impacted upon.

Motorised water sports, especially the use of jet





skis, are often cited as an emerging issue, especially given the growth in jet ski ownership throughout the catchment. For example, concerns about jet skis and the overall behaviour of Marine Park visitors were highlighted in the comments received from Local Marine Advisory Committee members. Motorised water sports are not permitted in the Remote Natural Area of the Marine Park and the activity is allowed only in some locations within the three Planning Areas. In addition, Maritime Safety Queensland has introduced a number of regulations to manage this growing use. These include a requirement to hold a personal watercraft licence or be accompanied by a licensed operator and distance limits from swimmers, other boats and the shore, unless operating at reduced speed. Freestyling (for example, wave jumping) is further restricted.

Continuing technological development of vessels and navigation equipment makes it difficult to predict trends in vessel use and likely impacts. However, based on current trends, it is likely that future technological advances will enable users to travel greater distances into the Marine Park.

#### 4.5 Drivers of recreation use

Based on this assessment, the two major drivers likely to influence future recreational use of the Marine Park are:

- Increasing coastal population
  - o More people accessing the Marine Park
  - o More coastal marine facilities and access points
  - o Coastal marine facilities and access points in new areas
  - o Increasing leisure time

- o Increasing vessel ownership (including larger vessels)
- o Increasing user conflict
- Declining ecosystem health and attractiveness
  - o Environmental changes at key locations
  - o Deterioration of inshore habitats
  - o Increasing marine debris
  - o Increasing frequency and severity of weather events.

Feedback from Local Marine Advisory Committee members and the Reef Advisory Committees consistently identified increasing population and its flow-on effects as fundamental issues for future recreation management.

## 5. Management arrangements

### 5.1 Management outcome

In managing the Great Barrier Reef Marine Park, the overarching outcome for the GBRMPA is:

*The long-term protection, ecologically sustainable use, understanding and enjoyment of the Great Barrier Reef for all Australians and the international community through the care and development of the Marine Park.*

In relation to use of the Marine Park, the GBRMPA's *Corporate Plan 2011-2014* has as one of its objectives: *Ensure that management delivers ecologically sustainable use of the Great Barrier Reef*, and has adopted four Strategies to achieve this objective:

- Provide effective legislative, policy, planning, assessment and permitting arrangements to achieve ecologically sustainable use of the Great Barrier Reef
- Partner with Traditional Owners to ensure sustainable traditional use of marine resources and protection of Traditional Owner cultural and heritage values
- Partner with the Queensland Government to deliver an effective field management program
- Collaborate with industry, Reef users, other governments and the community to implement best practice approaches and certification programs to ensure protection and sustainable use of the Great Barrier Reef.



## 5.2 Management partners

The GBRMPA manages recreation in the Marine Park (including Commonwealth islands) in partnership with a range of government agencies (Box 1 over page).

The GBRMPA and the Queensland Department of Environment and Resource Management (DERM) are jointly responsible for field operations and routine day-to-day activities. DERM is the lead agency for the management of National Park islands within the Great Barrier Reef World Heritage Area.

Other management partners include Fisheries Queensland; Queensland Department of Infrastructure and Planning; Maritime Safety Queensland; Queensland Boating and Fisheries Patrol; Queensland Police Service; Commonwealth Department of Sustainability, Environment, Water, Population and Communities and Australian Maritime Safety Authority. Local Government also plays a major role in providing access and facilities for recreational users. Many research organisations, community groups and individuals also directly participate in management. Reef Advisory Committees and Local Marine Advisory Committees provide advice to the GBRMPA.

## 5.3 Management tools

A range of tools are employed by the GBRMPA in managing recreational use within the Great Barrier Reef Marine Park:

- Legislation, principally the *Great Barrier Reef Marine Park Act 1975* and its Regulations, sets the broad, ecosystem-based management framework for managing the Marine Park.
- Zoning Plan, designed to protect and conserve the biodiversity of the Great Barrier Reef ecosystem while providing opportunities for ecologically sustainable use by current and future generations. It addresses recreational use by providing broad-scale direction on what activities can occur and where. In particular, it allows various forms of fishing in two thirds of the Marine Park and designates the remaining third as 'no take'. The Remote Natural Area in the Far North ensures that area remains largely unaltered by works and facilities and provides opportunities for quiet appreciation and enjoyment. In addition, Special Management Areas can

be designated to restrict access for conservation or management purposes, for example public safety, turtle or seabird breeding or an oil spill.

- Permits, usually issued jointly with the Queensland Department of the Environment and Resource Management, allow detailed consideration of proposed activities and apply any necessary conditions to those activities. A recreational user requires a permit for the installation of a private mooring and to use a hovercraft. In addition, organisers of recreational events require a Marine Parks permit if the event is assessed as more than 'low impact'.
- Management plans are generally prepared for intensively used areas, or particular groups of islands and reefs, and for the protection of species or ecological communities. They complement zoning by addressing specific issues in greater detail. The Plans of Management for the Cairns Area, Hinchinbrook and Whitsundays contain provisions relevant to recreation, especially by defining a range of settings for individual locations.
- Site management is the implementation of fine-scale arrangements for use and management of a particular site. The arrangements can be given effect through a Plan of Management, through individual site plans approved as policy by the GBRMPA and through onsite infrastructure. They address recreational use through initiatives such as defining mooring limits, no anchoring or anchoring areas and areas suitable for specified activities.
- Policy is the GBRMPA's statement of intent about an issue and guides the practical implementation of legislation and planning. While there are no formal policies, position statements or guidelines specifically on recreational issues, some aspects of the policies on moorings, whale and dolphin conservation and direct take of protected species are relevant to recreational use.
- Research (including monitoring) provides the up-to-date information

required for effective management. Two large-scale surveys of recreational use have been conducted in the last decade, along with research focused on recreational fishing.

- Partnerships and best practices are a vital part of Marine Park management. The Tourism and Recreation Reef Advisory Committee and the Local

Marine Advisory Committees provide advice to the GBRMPA on recreation issues. A set of Responsible Reef Practices describe best practice for recreational activities and partnership programs are an opportunity for recreational users to become involved in management. Recreational users are encouraged to report any incidents they

### **Box 1. Partners in managing recreation in the Great Barrier Reef Marine Park**

#### ***Australian Government***

**Great Barrier Reef Marine Park Authority** Responsible for protection and ecologically sustainable use of the Great Barrier Reef Marine Park.

**Department of Sustainability, Environment, Water, Population and Communities** Responsible for national policies, programs and legislation to protect and conserve Australia's natural environment and heritage.

**Australian Maritime Safety Authority** Responsible for maritime safety, marine environment protection (for example, emergency responses to marine pollution such as oil spills), and maritime and aviation search and rescue. The Australian Maritime Safety Authority manages shipping activities, including recreational shipping, throughout the Great Barrier Reef Region.

**Australian Quarantine Inspection Service - within the Department of Agriculture, Fisheries and Forestry (DAFF)** Responsible for quarantine inspection services for all vessels entering Australian waters to minimise the risk of exotic pests and diseases entering the country.

**Australian Customs and Border Protection Service** Responsible for the security and integrity of the Australian border and assists people and cargo to move in and out of the country. Customs Coastwatch fleet provides aerial surveillance of Australian coastal waters.

**Civil Aviation Safety Authority** Responsible for the maintenance, enhancement and promotion of the safety of civil aviation in Australia.

#### ***Queensland Government***

**Department of Environment and Resource Management** Responsible for the management of Queensland's natural resources, environment and cultural heritage and promotes sustainable living and resource use. Within the Department, Queensland Parks and Wildlife Service is responsible for field management in the Great Barrier Reef Coast Marine Park plus island and mainland National Parks. Queensland Parks and Wildlife Service is also the primary agency responsible for field management in the Great Barrier Reef Marine Park.

**Department of Transport and Main Roads – including Maritime Safety Queensland** Responsible for protecting Queensland's waterways and the people who use them – providing safer, cleaner seas and boating access facilities. Maritime Safety Queensland is responsible for licensing, registration and the safe navigation of vessels and is the lead response agency for oil and chemical spills.

**Department of Local Government and Planning** Responsible for integrated planning and infrastructure solutions. This includes the development of regional plans along the Great Barrier Reef coast.

**Department of Employment, Economic Development and Innovation (DEEDI)** Responsible for a range of services to industries, business, research organisations and government bodies to grow regional economies and strengthen industries (including super-yachts).

**Fisheries Queensland – within DEEDI** Under the Offshore Constitutional Settlement is responsible for developing the policy framework to protect and conserve fisheries resources while maintaining profitable commercial and enjoyable recreational fishing sectors.

**Queensland Boating and Fisheries Patrol – within DEEDI** Responsible for enforcing fisheries and boating safety laws through surveillance and inspection, as well as undertaking related education with industry and community groups.

**Queensland Water Police – within the Queensland Police Service** Responsible for policing and investigating serious marine incidents in the waterways of Queensland. Enforces Marine Parks legislation and investigates crimes on the water.

#### ***Other Partners***

**Local Government** Responsible for local management within the Great Barrier Reef catchment, including managing shore-based recreation access (e.g. boat ramps).

**Community Groups** Local community members who join together in appreciating, recreating in and protecting the Great Barrier Reef (e.g. sail clubs, dive clubs, 'Clean Marine' groups).

witness. In addition, local communities can help protect marine recreational areas by being involved in the Reef Guardian programs for schools and local government.

- Education and community awareness improves community understanding about Great Barrier Reef issues including what users can do at home to help make the Reef healthier and more resilient. Many of the GBRMPA's publications and education initiatives are directed at improving user understanding of management arrangements and best practice behaviour.

Compliance and enforcement supports all these management tools. A risk-based approach is employed for compliance activities in the Marine

Park. For recreational activities, compliance focuses on illegal fishing activities, illegal access to Preservation Zones and other restricted access areas, protection of protected species, offences for vessel groundings, offences against Plan of Management provisions and illegal use of moorings. Compliance activities also play a role in identifying emerging management issues within the Marine Park.

The management arrangements employed by the GBRMPA for recreation and associated activities are summarised in Table 6. Its arrangements for managing the major threats associated with recreation are summarised in Table 7 (page 19).

All GBRMPA management activities in relation to recreation are presented in detail at Appendix 1 (page 24). The areas of responsibility for other

**Table 6.** GBRMPA management arrangements for recreation and associated activities

	Legislation	Zoning Plan <sup>††</sup>	Permits	Management plans	Site management	Policy	Research	Partnerships and best practice	Education and community awareness
<b>Activity</b>									
Viewing nature - snorkelling and diving	✓				✓			✓	✓
Viewing nature - photography, bird watching, turtle watching, whale watching				✓		✓		✓	✓
Fishing	✓	✓	#					✓	✓
Boating - motorised <sup>†</sup>	✓	✓	#	✓	✓	✓	✓	✓	✓
Boating - sailing	✓	✓	#	✓	✓	✓	✓	✓	✓
Boating - super-yachts	✓	✓		✓		✓		✓	✓
Boating - non-motorised water sports	✓		#			✓			
Using high speed vessels - motorised water sports <sup>†</sup>	✓	✓	#	✓	✓	✓		✓	✓
Using high speed vessels - jet skis	✓	✓	#	✓		✓		✓	✓
Using high speed vessels - hovercraft	✓	✓	✓	✓	✓	✓			
Using aircraft	✓	✓		✓		✓		✓	✓
Camping	✓	✓	✓					✓	✓
<b>Supporting infrastructure</b>									
Coastal marine facilities - major (e.g. marinas)	✓	✓	✓			✓		✓	
Coastal marine facilities - minor (e.g. boat ramps)	✓	✓	✓			✓		✓	
Private moorings	✓	✓	✓	✓	✓	✓		✓	✓
Reef protection infrastructure (e.g. public moorings, markers)	✓			✓	✓	✓		✓	✓

<sup>†</sup> Motorised water sports means irregular driving, weaving or surfing in a motorised vessel; an activity in which a high-speed vessel or motorised vessel tows a person on top of the water or in the air (e.g., waterskiing or parasailing) or an activity in which a personal watercraft is used, except for transport.

<sup>††</sup> The Zoning Plan allows access to all zones for most recreational uses, except the Preservation Zone and two parts of the Scientific Research Zone.

# Only for organised events assessed as more than 'low impact'



Government agencies in managing recreation in the Marine Park are outlined at Appendix 2 (page 35). The Queensland Department of Environment and Resource Management and Maritime Safety Queensland play key roles in managing recreation. Fisheries Queensland is the primary managing agency for recreational fishing, responsible for fisheries policy, catch and bag limits, seasonal closures, data collection and research, as well as fish habitat protection. These management arrangements are complemented by the protected species provisions of the Great Barrier Reef Marine Park Regulations and Zoning Plan. Fisheries compliance monitoring and enforcement are undertaken by a number of the partner agencies.

#### 5.4 Effectiveness of management

The effectiveness of current management arrangements for recreation in the Great Barrier Reef Marine Park was assessed in the 2009 Outlook Report.<sup>1</sup> The overall conclusion for recreation (not including fishing) is that management of recreation is generally indirect and coordination is lacking. For fishing (both commercial and recreational) it was concluded that a lack of information and coordination, plus variable uptake of best practice management, is



limiting the effectiveness of fisheries management.

Based on an evaluation method that considers a management cycle in which management is continuously evaluated and refined, the Outlook Report's independent assessors considered the understanding of context is 'Very Good' for recreation (not including fishing). The assessors rated the planning, the financial, staffing and information inputs, the management systems and processes, the delivery of outputs and the achievement of outcomes components as 'Good'. For fishing the assessors ranked most of these components as 'Good' with inputs and outcomes as 'Poor'.<sup>9</sup>

In particular, for recreation (not including fishing) the assessment concluded:

- Quality recreation products have been provided and satisfaction ratings from recreational visitors are high.
- Good governance and management processes are in place to address recreation issues but the scale of the Great Barrier Reef and the dispersed nature of the activities pose challenges.
- Coordination between management agencies on recreation is lacking.
- There is no overarching document explicitly focused on recreation to guide planning for recreational use.
- A lack of targeted management objectives makes assessment of effectiveness difficult.
- Management is generally indirect and implicitly undertaken as part of routine field operations. Limited resources are allocated explicitly to management of recreation activities.
- Recreational use is a relatively low priority for compliance activities.
- Threats created by recreation are generally being reduced.
- Specific issues such as impacts from sewage discharge from vessels and continued commitment to community partnership programs have begun but these areas still require focus.
- Extensive programs such as volunteer groups and Reef Guardian schools provide opportunities for wider involvement in management of recreation-related issues.
- There is little recreational impact monitoring.

**Table 7. GBRMPA management arrangements for current threats associated with recreation**

Threat	Legislation	Zoning Plan	Permits	Management plans	Site management	Policy	Research	Partnerships and best practice	Education and community awareness
<b>Impacts on Great Barrier Reef ecosystem</b>									
Interference with species of conservation concern <sup>†</sup> - boat strikes	✓			✓		✓		✓	✓
Interference with species of conservation concern - disturbance	✓			✓		✓		✓	✓
Snorkelling and diving - interference with wildlife	✓	✓						✓	✓
Snorkelling and diving - physical impacts	✓							✓	✓
Anchoring on coral and seagrass beds	✓			✓	✓	✓		✓	✓
Grounding of vessels	✓							✓	✓
Recreational take of marine resources	✓	✓					✓	✓	✓
Introduction of exotic species - imported bait								✓	✓
Introduction of exotic species - hull fouling	✓					✓		✓	✓
Discharges and spills - waste discharge (including sewage)	✓			✓				✓	✓
Discharges and spills - small chemical spill	✓							✓	✓
Discharges and spills - small oil spill	✓							✓	✓
Litter and marine debris	✓							✓	✓
Dredging and dumping of spoil - coastal marine facilities	✓		✓			✓			✓
Clearing or modifying coastal habitats -coastal marine facilities	✓							✓	
Clearing or modifying coastal habitats - unregulated beach access								✓	
Decreased water quality - coastal marine facilities						✓		✓	
<b>Impacts on cultural heritage</b>									
Damage to historic sites	✓			✓				✓	
Damage to sites of cultural significance to Traditional Owners	✓			✓				✓	
Removal of culturally significant artefacts	✓							✓	
Interruption of Traditional Owner use and access to resources	✓			✓				✓	
<b>Impacts on recreation experience</b>									
User conflict - other users (e.g. tourism, traditional owners, commercial fishers)	✓	✓	✓	✓	✓		✓	✓	✓
User conflict - different recreational activities	✓	✓	#	✓			✓	✓	✓
Shifts in recreational use - incompatible uses			✓	✓	✓				✓
Shifts in recreational use - poor environmental condition				✓	✓				
Shifts in recreational use - improved safety and technology			✓	✓	✓				
<b>Impacts on Marine Park management</b>									
Lack of compliance - general management arrangements	✓							✓	✓
Lack of compliance - use of in-Park infrastructure	✓					✓		✓	✓
Lack of compliance - illegal installation of structures (e.g. moorings)	✓					✓		✓	✓
Lack of information for effective management							✓	✓	
Inadequate user understanding of management arrangements								✓	✓

<sup>†</sup> Species of conservation concern include threatened species (e.g. all turtles, some whales, dugong, some sharks and some seabirds), iconic species (e.g. all whales and dolphins, Maori wrasse, sea snakes) and 'at risk' species (e.g. most sharks and rays, giant clams)  
# Only for organised events that are assessed as more than 'low impact'



For fishing, specific conclusions included:

- There is no systematic cross jurisdictional approach to address regional issues, cumulative impacts and how these interact with World Heritage obligations.
- Protection of Great Barrier Reef values relevant to fishing is variable and progress towards application of best practice management across the whole fisheries spectrum is being made, but not rapidly.
- Compared to commercial fishing, the understanding of recreational fishing is much more limited.
- Population growth and concurrent potential growth in recreational fishing are increasing management needs particularly with regard to ecosystem-based assessments and compliance monitoring.
- Effective collaboration in management efforts is particularly challenging in the diffuse recreational fishing sector.

## 6. Current and emerging issues

### 6.1 Threats relating to recreational use

Based on the assessments of current state and trends, factors influencing recreation and current management arrangements, the current and emerging threats associated with recreation in the Marine Park can be identified.

The predicted risk posed by each of the threats to the Great Barrier Reef ecosystem, cultural heritage, recreational experiences or management arrangements is examined at Table 8, based on an assessment of likelihood and consequence. This assessment has been undertaken assuming the current management arrangements continue and therefore represents the current residual risk for each threat. The likely future trend in the level of risk is also depicted in the table, along with a brief description of any regional differences.

The criteria used to assess both the likelihood and consequence of each threat is provided in Appendix 3 (page 37), along with a Risk Matrix that combines likelihood and consequence into an overall rating of risk.

### 6.2 Major risks remaining

The risk assessment presented in Table 8 indicates that, with current use patterns and

management arrangements, there are no threats that present a Very High or High Risk to the ecosystem, cultural heritage, recreational experiences or management arrangements.

### Great Barrier Reef ecosystem

The threats considered of Medium Risk to the ecosystem are:

- Interference with species of conservation concern - boat strikes
- Interference with species of conservation concern - disturbance
- Anchoring on coral and seagrass beds
- Recreational take of marine resources
- Discharges and spills - waste discharge (including sewage)
- Litter and marine debris
- Clearing or modifying coastal habitats – coastal marine facilities
- Decreased water quality – coastal marine facilities.

Although the risk to the Great Barrier Reef ecosystem from recreational take of marine resources is currently rated as medium, the overall risk, as assessed in the Outlook Report, from direct extractive use by commercial and recreational fishing combined is considered higher for:

- Illegal fishing
- Fishing of top order predators
- Fishing spawning aggregation sites
- By-catch of species of conservation concern
- Death of discarded catch.

The impacts of extractive use are separately addressed in other strategies, policies and management arrangements of both the GBRMPA and its partner agencies, in particular Fisheries Queensland.

Of the remaining threats to the ecosystem rated as Medium Risk, most arise from an increasing number of recreational vessels in the Marine Park, as a result of an increasing coastal population. Consequently, it is predicted that the risk of these activities under current management arrangements will become more severe in the future. These threats are principally focused on high use areas such as offshore Cairns and the Whitsundays and adjacent to the major regional population centres. The risk of interference to wildlife is likely to increase in the future, especially because of the continuing increase in the number of humpback whales

**Table 8.** Risks associated with recreation in the Great Barrier Reef Marine Park

Threat†	Consequence	Likelihood	Residual Risk	Future Trend	Regional Differences
<b>Impacts on Great Barrier Reef ecosystem</b>					
Interference with species of conservation concern - boat strikes	Moderate	Possible	Medium	↑↑	Localised, mainly in high use areas
Interference with species of conservation concern - disturbance	Moderate	Possible	Medium	↑↑	Localised, mainly in high use areas
Snorkelling and diving - interference with wildlife	Minor	Possible	Low	↔	Localised, mainly in high use areas
Snorkelling and diving - physical impacts	Minor	Possible	Low	↔	Localised, mainly in high use areas
Anchoring on coral and seagrass beds	Minor	Likely	Medium	↑↑	Localised, mainly in high use areas
Grounding of vessels	Minor	Possible	Low	↑	Localised, mainly in high use areas
Recreational take of marine resources	Minor	Likely	Medium	↑↑	Primarily in proximity to regional communities in inshore areas
Introduction of exotic species - imported bait	Moderate	Unlikely	Low	↔	Widespread, focused in coastal areas
Introduction of exotic species - hull fouling	Moderate	Unlikely	Low	↑	More likely around ports
Discharges and spills - waste discharge (including sewage)	Minor	Likely	Medium	↑	Localised, mainly in high use areas
Discharges and spills - small chemical spill	Insignificant	Possible	Very Low	↑	Localised, mainly in high use areas
Discharges and spills - small oil spill	Minor	Possible	Low	↑	More likely where no refuelling facilities
Litter and marine debris	Moderate	Possible	Medium	↑	Widespread
Dredging and dumping of spoil - coastal marine facilities	Minor	Possible	Low	↑↑	Localised near regional centres
Clearing or modifying coastal habitats - coastal marine facilities	Moderate	Possible	Medium	↑↑	Localised near regional centres
Clearing or modifying coastal habitats - unregulated beach access	Minor	Possible	Low	↑	Localised, mainly adjacent to regional centres
Decreased water quality - coastal marine facilities	Minor	Likely	Medium	↑	Localised near regional centres
<b>Impacts on cultural heritage</b>					
Damage to historic sites	Moderate	Unlikely	Low	↔	Localised
Damage to sites of cultural significance to Traditional Owners	Moderate	Unlikely	Low	↔	Localised, mainly in high use areas
Removal of culturally significant artefacts	Moderate	Unlikely	Low	↔	Localised
Interruption of Traditional Owner use and access to resources	Moderate	Possible	Medium	↑	Localised, mainly in high use areas
<b>Impacts on recreation experience</b>					
User conflict - other users (e.g. tourism, traditional owners, commercial fishers)	Minor	Possible	Low	↑	Localised, mainly in high use areas
User conflict - different recreational activities	Minor	Possible	Low	↑	Localised, mainly in high use areas
Shifts in recreational use - incompatible uses	Minor	Unlikely	Low	↔	Localised, mainly in high use areas
Shifts in recreational use - poor environmental condition	Minor	Possible	Low	↑	Likely to move away from inshore areas
Shifts in recreational use - improved safety and technology	Insignificant	Possible	Very Low	↑	Likely increased use further away from coast
<b>Impacts on Marine Park management</b>					
Lack of compliance - general management arrangements	Moderate	Possible	Medium	↑	More likely in remote areas
Lack of compliance - use of in-Park infrastructure	Minor	Possible	Low	↔	Localised, mainly in high use areas
Lack of compliance - illegal installation of structures (e.g. moorings)	Minor	Possible	Low	↓	Reef-wide
Lack of information for effective management	Moderate	Possible	Medium	↔	Reef-wide
Inadequate user understanding of management arrangements	Moderate	Possible	Medium	↔	Reef-wide
<b>Risk level</b>	Very Low	Low	Medium	High	Very High

† This assessment has been applied to the recreational component of the threat. It is recognised that if the assessment applied to all user components of the threat (for example, commercial use) then the risk is likely to be higher. The residual risk takes into account management measures that are in place.



migrating annually to the Marine Park.

Recent improvements in the management of vessel-based sewage in Queensland waters are likely to improve performance on large vessels, but the Queensland regulations do not apply to the bulk of the recreational fleet due to the small number of passengers carried. The current provisions in the Great Barrier Reef Marine Park legislation are not as stringent as the Queensland Government requirements.

Most of these threats to the Great Barrier Reef ecosystem are already addressed in published best practices for the Marine Park and it is likely that improved uptake of these practices could significantly reduce the risks in the future.

The remaining threats to the ecosystem are mostly considered a Low Risk, principally because they are likely to be of less consequence to its environmental values, for example interfering with wildlife while snorkelling and diving, introducing exotic species from imported bait, small oil spills and the physical impacts of snorkelling and diving.

### **Cultural heritage**

With regard to the cultural heritage of the Marine Park, the only identified threat considered to be of Medium Risk is the interruption to Traditional Owner use and access to resources.

This threat is likely to be most severe in high use areas and there is already evidence of Traditional Owner dissatisfaction with the increases in recreational use within traditional sea country. A better understanding of Traditional Owner cultural connections, rights and responsibilities amongst recreational users would likely improve interactions between Traditional Owners and recreational users.

The threats that recreational users may damage historic sites and sites of significance to Traditional Owners or remove artefacts are considered of Low Risk, principally because of management arrangements already in place.

The improved engagement of Traditional Owners in Marine Park management through the development of partnerships, such as through the Traditional Use of Marine Resources Agreements and by cultivating productive working relationships through the formation of the Indigenous Reef Advisory Committee, are likely to form a basis for mitigating these risks.

### **Recreational experience**

None of the threats to the recreational experience are considered to be a Medium, High or Very High Risk. This is mainly due to the management arrangements in high use areas such as settings and site planning. It is likely that the predicted continued increase in recreational use of the Marine Park, potentially coupled with increasing tourism use, will result in increasing interactions between different users in the Marine Park.

### **Marine Park management**

Three threats to Marine Park management are considered to be of Medium Risk:

- Lack of compliance – general management arrangements
- Lack of information for effective management
- Inadequate user understanding of management arrangements.

These threats are likely to have an impact Reef-wide, with lack of compliance possibly more common in remote areas where compliance activities are less frequent. Issues of compliance are likely to increase with increasing use of the Marine Park. Inadequate user understanding is likely to be a particular issue for visitors from outside the catchment area (such as grey nomads, cruising yachties and international visitors) who are not a current focus of GBRMPA education and community awareness programs. Better information about the characteristics of different recreational groups is likely to improve the effectiveness of Marine Park communication activities.

The threats associated with infrastructure within the Marine Park, both non-compliance with arrangements for the use of public infrastructure and the installation of illegal private infrastructure are considered a Low Risk. The installation of public moorings is likely to reduce the incidence of illegal infrastructure, at least in high use areas.

## **6.3 Cumulative risks**

Each of the threats identified in this assessment are acting simultaneously and, often, in the same general vicinity. For example, many of the threats to the ecosystem such as the take of marine species, boat strikes, disturbance to wildlife, anchoring on coral and seagrass beds, vessel groundings and waste discharge are most likely to occur in popular areas, along with

threats to the recreational experience such as user conflict and threats to cultural values such as the interruption to Traditional Owner use and access to resources.

Improving vessel technology and safety, combined with further increases in ownership, may expand the areas that are commonly used for recreation and therefore expand the areas of potential cumulative impact.

#### 6.4 Avenues to reduce the risks

The lack of any High or Very High Risks associated with recreational use indicates that the current management arrangements employed by the GBRMPA are generally appropriate for the current threats. The key management strategies include Plans of Management for high use areas, site planning, best practices, partnerships with the community and education and community awareness.

The strong partnership between the GBRMPA and the Queensland Department of Environment and Resource Management, both in the joint management of the Great Barrier Reef Marine Park and the adjacent Great Barrier Reef Coast Marine Park and in the management of the adjacent island National Parks, is also significantly reducing the risks associated with recreation.

Further, there are a number of other managing agencies who make contributions to the management of the threats associated with recreation, such as the requirements for vessel safety, responsible vessel use and vessel-based



sewage disposal managed by Maritime Safety Queensland and the management of land-based marine developments by the Queensland Department of Infrastructure and Planning.

Threats associated with the recreational take of marine resources are addressed in a range of strategies, policies and management arrangements of both the GBRMPA and its partner agencies. Fisheries Queensland plays a key role in managing the recreational fishery, including through size, take and possession limits.

Across all recreational uses and impacts in the Marine Park, one area that is likely to play a key role in further reducing risk is engagement and collaboration with recreational users, Traditional Owners and the community more broadly. A better understanding of the values of the Marine Park and its management arrangements, combined with a stronger sense of stewardship amongst users of the area and meaningful engagement in the management process can be expected to significantly improve management outcomes. The need to improve understanding about management arrangements and the boating skills of new recreational users were identified as important by many respondents from the Local Marine Advisory Committees.

With regard to management by the GBRMPA, the management approaches that are likely to most effectively address the remaining risks now and into the future are:

- Improving the information available for management
- Building better collaborative arrangements with community groups, Traditional Owners and government agencies.
- Improving and better targeting education and public awareness
- More actively encouraging best practice use
- Improving in-Park management arrangements, especially cooperation, coordination and the provision of infrastructure.

These approaches are the focus of the management activities outlined in the Strategy.

## Appendix 1. GBRMPA management arrangements for recreational use of the Great Barrier Reef Marine Park, 2010

	Activities				
	Viewing nature - snorkelling and diving	Viewing nature - photography, bird watching, turtle watching, whale watching	Fishing	Boating – motorised	Boating – sailing vessels, kayaks and canoes
<b>Legislation</b>	<ul style="list-style-type: none"> <li>s37AA – A person who uses or enters the Marine Park must take all reasonable steps to prevent or minimise harm to environment in the Marine Park</li> <li>Reg 117H – do not feed or attempt to feed cetaceans</li> <li>Reg 117I – Do not touch or make sudden movements within 2m of cetacean</li> <li>No access to Restricted Access Special Management Areas (SMAs)</li> </ul>	<ul style="list-style-type: none"> <li>Reg 117J – do not enter water cetacean within certain distances of a cetacean</li> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Regs specify Protected and restricted species for the purposes of fishing</li> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>No access to Restricted Access Special Management Areas</li> </ul>
<b>Zoning Plan</b>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones and two Scientific Research Zones (AIMS and One Tree Island) and Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones and two Scientific Research Zones (AIMS and One Tree Island) and Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in General Use, Habitat Protection and Conservation Park Zone</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones and two Scientific Research Zones (AIMS and One Tree Island) and Restricted Access Special Management Areas</li> <li>Where use exceeds 14 consecutive days or 30 out of 60 days a permit is required in all zones</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones, two Scientific Research Zones (AIMS and One Tree Island) and some Special Management Areas</li> <li>Where use exceeds 14 consecutive days or 30 out of 60 days a permit is required in all zones</li> </ul>
<b>Permits</b>			<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>	<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>	<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>
<b>Management plans</b>		<ul style="list-style-type: none"> <li>Cairns Area Plan of Management (PoM), Hinchinbrook PoM and Whitsundays PoM – have a range of restrictions including those for the relevant sensitive sites (e.g. Sensitive Locations, Setting 5, Significant Bird Sites)</li> </ul>		<ul style="list-style-type: none"> <li>Cairns Area PoM, Hinchinbrook PoM and Whitsundays PoM – have a range of restrictions including those for the relevant sensitive sites (e.g. Sensitive Locations, Setting 5, Significant Bird Sites)</li> </ul>	<ul style="list-style-type: none"> <li>Cairns Area PoM, Hinchinbrook PoM and Whitsundays PoM – have a range of restrictions including those for the relevant sensitive sites (e.g. Sensitive Locations, Setting 5, Significant Bird Sites)</li> </ul>
<b>Site management</b>	<ul style="list-style-type: none"> <li>No snorkelling or diving in Boating Access Channels e.g. Michaelmas Cay</li> <li>Trigger limit on number of Dive Site Markers (e.g. Lady Elliot Island)</li> <li>Dive and snorkelling sites designated as No Anchoring Area (e.g. Lady Elliot Island)</li> <li>Small Structures Area designated to protect access to snorkelling sites (e.g. Fitzroy Reef)</li> </ul>			<ul style="list-style-type: none"> <li>Boating Access Channels e.g. Michaelmas Cay</li> </ul>	<ul style="list-style-type: none"> <li>Boating Access Channels e.g. Michaelmas Cay</li> </ul>
<b>Policy</b>		<ul style="list-style-type: none"> <li>Management approaches addressed in <i>Guidelines for Managing Visitation to Seabird Breeding Islands</i></li> </ul>		<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>
<b>Research</b>				<ul style="list-style-type: none"> <li>2003 and 2008 surveys of recreation use by catchment residents</li> </ul>	<ul style="list-style-type: none"> <li>2003 and 2008 surveys of recreation use by catchment residents</li> </ul>
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>Responsible Reef Practices for snorkelling and diving</li> <li>Best practices on LMAC brochures</li> <li>Messages encouraged through Reef Guardian Schools program with marine teachers</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on bird watching, around turtles, around whales and dolphins</li> <li>Best practices on LMAC brochures</li> <li>Reef Forums sponsored by LMACs</li> <li>Local informal conservation partnerships with nature and conservation groups</li> <li>LMAC support for local Reef-based festivals</li> <li>LMAC brochures highlight nature-based opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices for fishing</li> <li>Support for NEATFish accreditation of fishing tournaments</li> <li>Support of Sunfish best practice guidelines and education and stewardship</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on boating and yachting, outboard engines, anchoring and mooring</li> <li>Best practices promoted at boat shows, marine expos</li> <li>Best practices on zoning maps and LMAC brochures</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on boating and yachting, anchoring and mooring</li> <li>Information packs to cruising yachts visiting Low Isles</li> <li>Information packs to cruising yachts visiting Whitsunday Islands</li> </ul>
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Information provided to external publications including websites</li> <li>Ad hoc educational talks</li> <li>Best practices encouraged through Reef HQ education</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Information provided to external publications including websites</li> <li>Ad hoc educational talks</li> <li>Best practices encouraged through Reef HQ education</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Information provided to external publications including websites</li> <li>Ad hoc educational talks</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Information provided to external publications including websites</li> <li>Best practices encouraged through Reef HQ education</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Information provided to external publications including websites</li> <li>Best practices encouraged through Reef HQ education</li> </ul>

**Activities (continued)**

	<b>Boating – recreational super-yachts</b>	<b>Boating - non-motorised water sports</b>	<b>Use of high speed vessels - motorised water sports †</b>	<b>Use of high speed vessels – jet skis</b>	<b>Use of high speed vessels - hovercraft</b>
<b>Legislation</b>	<ul style="list-style-type: none"> <li>Part V111A of Act – Vessels over 70 metres must have a Reef pilot in compulsory pilotage areas</li> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Reg 117A and 117D – prohibited vessels (jet skis, etc) to stay more than 300m away from cetaceans</li> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Reg 117D – prohibited vessels (jet skis, etc) to stay more than 300m away from cetaceans and must move at a constant speed of six knots away from an approaching cetacean</li> <li>No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Reg 117A and 117D – prohibited vessels (hovercraft, etc) to stay more than 300m away from cetaceans</li> <li>Reg 23 defines hovercraft as a managed vessel</li> <li>No access to Restricted Access Special Management Areas</li> </ul>
<b>Zoning Plan</b>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones, two Scientific Research Zones (AIMS and One Tree Island) and some Special Management Areas</li> <li>Where use exceeds 14 consecutive days or 30 out of 60 days a permit is required in all zones</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones, two Scientific Research Zones (AIMS and One Tree Island) and some Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones, two Scientific Research Zones (AIMS and One Tree Island) and some Special Management Areas</li> <li>Not allowed in Remote Natural Area</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones, two Scientific Research Zones (AIMS and One Tree Island) and some Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>Allowed in all zones except Preservation Zones, two Scientific Research Zones (AIMS and One Tree Island) and some Special Management Areas</li> <li>Use of a hovercraft requires a permit in all zones</li> </ul>
<b>Permits</b>		<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>	<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>	<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>	<ul style="list-style-type: none"> <li>Use of a 'managed vessel' requires a permit in all zones</li> </ul>
<b>Management plans</b>	<ul style="list-style-type: none"> <li>Cairns Area Plan of Cairns Area PoM, Hinchinbrook PoM and Whitsundays PoM – have a range of restrictions including those for the relevant sensitive sites (e.g. Sensitive Locations, Setting 5, Significant Bird Sites)</li> <li>Cairns Area PoM, Hinchinbrook PoM and Whitsundays PoM – vessels 35 m or more have additional access restrictions to Locations and Setting areas</li> </ul>		<ul style="list-style-type: none"> <li>Cairns Area PoM – no motorised water sports allowed in Locations except at Lizard Island Locality 2</li> <li>Hinchinbrook PoM – motorised water sports not allowed except in intensive use settings</li> <li>Whitsundays PoM – motorised water sports only allowed in Setting 1 areas or Designated Water sports Area</li> </ul>	<ul style="list-style-type: none"> <li>Cairns Area PoM, Hinchinbrook PoM and Whitsundays PoM – have a range of restrictions including those for the relevant sensitive sites (e.g. Sensitive Locations, Setting 5, Significant Bird Sites)</li> <li>Whitsundays PoM – use of jet skis and other high speed vessels for motorised water sports not allowed except in Setting 1 areas and Designated Water sports Area</li> </ul>	<ul style="list-style-type: none"> <li>Cairns Area PoM – no hovercraft allowed in Locations (except Lizard Island Locality 2)</li> <li>Hinchinbrook PoM – hovercraft not allowed except in intensive use settings</li> <li>Whitsundays PoM – use of jet skis and other high speed vessels for motorised water sports not allowed except in Setting 1 areas and Designated Water sports Area</li> </ul>
<b>Site management</b>			<ul style="list-style-type: none"> <li>Designated areas for differing activities</li> </ul>		<ul style="list-style-type: none"> <li>Use of hovercraft not permitted at some sites (e.g. Lizard Island Locality 3)</li> </ul>
<b>Policy</b>	<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>
<b>Research</b>					
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on boating and yachting, anchoring and mooring, motorised water sports</li> </ul>		<ul style="list-style-type: none"> <li>Responsible Reef Practices on motorised water sports</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on motorised water sports</li> </ul>	
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>Specific information on GBRMPA website</li> </ul>		<ul style="list-style-type: none"> <li>Responses to stakeholder enquiries</li> <li>Information in GBRMPA printed material, website, educational products</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Responses to stakeholder enquiries</li> </ul>	

### Activities (continued)

	<b>Use of aircraft</b>	<b>Camping</b>
<b>Legislation</b>	<ul style="list-style-type: none"> <li>• Reg 117G – aircraft to stay certain distances from cetaceans</li> <li>• No access to Restricted Access Special Management Areas</li> </ul>	<ul style="list-style-type: none"> <li>• Reg 95 – certain animals not to be taken onto Commonwealth Islands</li> </ul>
<b>Zoning Plan</b>	<ul style="list-style-type: none"> <li>• Altitude must be &gt;500 feet in Preservation Zone</li> <li>• Where use exceeds 14 consecutive days or 30 out of 60 days a permit is required in all zones (except the Preservation Zone)</li> </ul>	<ul style="list-style-type: none"> <li>• Permit required to camp on Commonwealth islands</li> </ul>
<b>Permits</b>		<ul style="list-style-type: none"> <li>• Permit required to camp on Commonwealth islands</li> </ul>
<b>Management plans</b>	<ul style="list-style-type: none"> <li>• Cairns Area PoM – restrictions on number of people per vessel (lowest limit is 15 people in Low Use Locations)</li> <li>• Cairns Area PoM – Sensitive Locations have restrictions on aircraft speed, access during certain times (e.g. no access to Low Isles between sunset and sunrise), use of horns, loudspeakers, sirens</li> <li>• Cairns Area PoM – some Locations have restrictions on anchoring of aircraft</li> <li>• Hinchinbrook PoM – restrictions on aircraft access in Locations and Dugong Protection Area Whitsundays PoM – aircraft not allowed in a Location more than twice per week except for designated airports/airstrips and Regular Aircraft Landing Areas</li> <li>• Whitsundays PoM – aerobatics not permitted in Setting areas except for Setting 1</li> <li>• Whitsundays PoM aircraft must not operate below 1500 feet or approach within 1000m of a significant bird site during restriction periods</li> </ul>	
<b>Site management</b>		
<b>Policy</b>	<ul style="list-style-type: none"> <li>• Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	
<b>Research</b>		
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>• Air Services Australia 'Fly Neighbourly' Advice' (e.g. Hinchinbrook Area)</li> </ul>	<ul style="list-style-type: none"> <li>• Best practices on visiting islands and cays on LMAC brochures</li> </ul>
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>• Aircraft requirements around whales in relevant brochures</li> </ul>	<ul style="list-style-type: none"> <li>• Best practice information in brochures and printed material</li> <li>• Responses to stakeholder enquiries</li> </ul>



Supporting infrastructure				
	Coastal marine facilities - major (e.g. marinas)	Coastal marine facilities – minor (e.g. boat ramps)	Private moorings	Reef protection infrastructure (e.g. public moorings, markers)
<b>Legislation</b>	<ul style="list-style-type: none"> <li>• <i>Environment Protection and Biodiversity Act 1999</i> assessment trigger if within the World Heritage Area and likely to have a significant impact on the environment</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Environment Protection and Biodiversity Act 1999</i> assessment trigger if within the World Heritage Area</li> </ul>	<ul style="list-style-type: none"> <li>• Reg 101A(2) Mooring buoy must display permanently and legibly a mooring reference number</li> <li>• <i>Environment Protection and Biodiversity Act 1999</i> assessment trigger if within the World Heritage Area and likely to have a significant impact on the environment</li> </ul>	<ul style="list-style-type: none"> <li>• Reg 102(1) Offence to remove, misuse or engage in conduct that damages an Authority mooring</li> <li>• <i>Environment Protection and Biodiversity Act 1999</i> assessment trigger if within the World Heritage Area</li> </ul>
<b>Zoning Plan</b>	<ul style="list-style-type: none"> <li>• Allowed under permit provided that activity is consistent with objective of zone</li> </ul>	<ul style="list-style-type: none"> <li>• Allowed under permit provided that activity is consistent with objective of zone</li> </ul>	<ul style="list-style-type: none"> <li>• Allowed under permit provided that activity is consistent with objective of zone</li> </ul>	
<b>Permits</b>	<ul style="list-style-type: none"> <li>• Requires a permit if within the Marine Park</li> </ul>	<ul style="list-style-type: none"> <li>• Requires a permit if within the Marine Park</li> </ul>	<ul style="list-style-type: none"> <li>• Requires a permit if within the Marine Park</li> </ul>	
<b>Management plans</b>			<ul style="list-style-type: none"> <li>• Cairns Area and Hinchinbrook PoMs – cap on number of private moorings and pontoons allowed in the Planning Area</li> <li>• Whitsundays PoM – Cap on number of private moorings except for Setting 1 areas and Hardy Reef</li> <li>• Trigger limits on number of private moorings set for several sites in the southern GBR e.g. Fitzroy Reef</li> </ul>	<ul style="list-style-type: none"> <li>• Whitsundays and Hinchinbrook PoMs – declare statutory No Anchoring Areas</li> </ul>
<b>Site management</b>			<ul style="list-style-type: none"> <li>• No Structure Sub-zones declared for some Cairns Area Locations</li> <li>• No moorings to be installed in Vessel Transit Areas e.g. Clump Point</li> <li>• A trigger limit for the number of permitted moorings (e.g. Lady Elliot Island, Fitzroy Reef)</li> </ul>	<ul style="list-style-type: none"> <li>• Non-statutory No Anchoring Areas in place in numerous locations outside of Planning Areas.</li> </ul>
<b>Policy</b>	<ul style="list-style-type: none"> <li>• Assessment and management of structures in the Marine Park addressed in <i>Structures Policy</i></li> <li>• Location of infrastructure managed through <i>Position Statement on No Structures Sub-Zones (Cairns area)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Assessment and management of structures in the Marine Park addressed in <i>Structures Policy</i></li> </ul>	<ul style="list-style-type: none"> <li>• Assessment and management of structures in the Marine Park addressed in <i>Structures Policy</i></li> <li>• Permitting and management of moorings addressed in <i>Policy on Moorings in the Great Barrier Reef Marine Park</i></li> <li>• Location of infrastructure managed through <i>Position Statement on No Structures Sub-Zones (Cairns area)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Use and management of public moorings addressed in <i>Policy on Moorings in the Great Barrier Reef Marine Park</i></li> </ul>
<b>Research</b>				
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>• Reef Guardian Council best practices on adopting a clean marina strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Reef Guardian Council best practices on foreshore and dune protection</li> <li>• Input to Queensland Government planning processes</li> </ul>	<ul style="list-style-type: none"> <li>• Public access to Moorings Register fosters public use of private moorings</li> <li>• Responsible Reef Practices on anchoring and mooring</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on anchoring and mooring</li> <li>• LMAC and community partnerships for installation of more reef protection markers</li> <li>• LIPS volunteers promote responsible behaviour at Low Isles</li> </ul>
<b>Education and community awareness</b>			<ul style="list-style-type: none"> <li>• Information on GBRMPA website</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> <li>• Responses to stakeholder enquiries</li> </ul>

## Impacts on Great Barrier Reef ecosystem

	<b>Interference with species of conservation concern†† - boat strikes</b>	<b>Interference with species of conservation concern †† - disturbance</b>	<b>Snorkelling and diving –interference with wildlife</b>	<b>Snorkelling and diving - physical impacts</b>	<b>Anchoring on coral and seagrass beds</b>
<b>Legislation</b>	<ul style="list-style-type: none"> <li>s37AA – A person who uses or enters the Marine Park has a duty to prevent or minimise harm to environment</li> </ul>	<ul style="list-style-type: none"> <li>s37AA – A person who uses or enters the Marine Park has a duty to prevent or minimise harm to environment</li> <li>Reg 117D – prohibited vessels (jet skis, etc) to stay more than 300m away from a cetacean</li> <li>Reg 117E – other vessels (not prohibited) to stay 50m from dolphin, 100m from whale, speed and other approach distances apply</li> <li>Reg 117F – operation of a vessel in the vicinity of a cetacean calf</li> <li>Reg 117G – aircraft to stay certain distances from cetaceans</li> </ul>	<ul style="list-style-type: none"> <li>s37AA – A person who uses or enters the Marine Park has a duty to prevent or minimise harm to environment</li> <li>Reg 117H – do not feed or attempt to feed cetaceans</li> <li>Reg 117I – do not touch or make sudden movements within 2m of cetacean</li> <li>Reg 117J – do not enter water/approach cetacean within certain distances</li> </ul>	<ul style="list-style-type: none"> <li>s37AA – A person who uses or enters the Marine Park has a duty to prevent or minimise harm to environment</li> </ul>	<ul style="list-style-type: none"> <li>S38DA – offence if vessel causes damage to the environment</li> <li>38DB – civil penalty provisions for above offence</li> </ul>
<b>Zoning Plan</b>		<ul style="list-style-type: none"> <li>S5.3 requires a permit for the take of a protected species (includes interfering with or bringing ashore)</li> </ul>	<ul style="list-style-type: none"> <li>S5.3 requires a permit for the take of a protected species (includes interfering with or bringing ashore)</li> </ul>		
<b>Permits</b>					
<b>Management plans</b>	<ul style="list-style-type: none"> <li>Hinchinbrook PoM - encourage vessel traffic north to use the marked voluntary transit lanes and travel at the recommended voluntary maximum speeds</li> </ul>	<ul style="list-style-type: none"> <li>Hinchinbrook PoM – prohibits interferences with turtle or dugong</li> <li>Whitsundays and Hinchinbrook PoMs – restrictions on vessel speed and access, and aircraft access and flying height around Significant Bird Sites</li> </ul>			<ul style="list-style-type: none"> <li>Cairns Area, Hinchinbrook and Whitsundays PoMs – some Locations have restrictions on anchoring</li> <li>Cairns Area, Hinchinbrook and Whitsundays PoMs – prohibit damage to coral</li> </ul>
<b>Site management</b>					<ul style="list-style-type: none"> <li>No Anchoring Areas defined at some sites</li> </ul>
<b>Policy</b>	<ul style="list-style-type: none"> <li>Raising community awareness addressed in <i>Position Statement on the Conservation of Dugongs in the Great Barrier Reef Marine Park</i></li> <li>Management of vessels and aircraft around cetaceans addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Raising community awareness addressed in <i>Position Statement on the Conservation of Dugongs in the Great Barrier Reef Marine Park</i></li> <li>Education and management addressed in <i>Operational Policy on Whale and Dolphin Conservation in the Great Barrier Reef Marine Park</i></li> <li>Seabird management approaches addressed in <i>Guidelines for Managing Visitation to Seabird Breeding Islands</i></li> </ul>			<ul style="list-style-type: none"> <li>Sharing of private moorings encouraged in <i>Policy on Moorings in the Great Barrier Reef Marine Park</i></li> </ul>
<b>Research</b>					
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on boating and yachting</li> <li>Best practices on LMAC brochures</li> <li>Safety messages LMAC brochures</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on bird watching, around turtles, around whales and dolphins, boating and yachting</li> <li>Best practices on LMAC brochures</li> <li>LMAC brochures emphasise regulations</li> <li>Reef Guardian Schools involvement with turtle monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on snorkelling and diving</li> <li>Best practices on LMAC brochures</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on snorkelling and diving</li> <li>Best practices LMAC brochures</li> <li>LIPS volunteers promote responsible behaviour at Low Isles</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on anchoring and mooring</li> <li>Best practices on LMAC brochures</li> <li>LIPS volunteers promote responsible behaviour at Low Isles</li> </ul>
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website</li> <li>Ad hoc educational talks and promotions</li> <li>Information provided as part of Reef HQ education programs</li> </ul>	<ul style="list-style-type: none"> <li>Information provided as part of Reef HQ education programs</li> <li>Information in GBRMPA printed material, website</li> <li>Responses to stakeholder enquiries</li> </ul>	<ul style="list-style-type: none"> <li>Information provided as part of Reef HQ education programs</li> <li>Information in GBRMPA printed material, website</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Ad hoc educational talks</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website</li> </ul>



### Impacts on Great Barrier Reef ecosystem (continued)

	<b>Grounding of vessels</b>	<b>Recreational take of marine resources</b>	<b>Introduction of exotic species – imported bait</b>	<b>Introduction of exotic species – hull fouling</b>	<b>Discharges and spills - waste discharge (including sewage)</b>
<b>Legislation</b>	<ul style="list-style-type: none"> <li>• S38DA – offence if vessel causes damage to the environment</li> <li>• 38DB – civil penalty provisions for above offence</li> </ul>	<ul style="list-style-type: none"> <li>• Regs specify Protected and restricted species for the purposes of fishing</li> </ul>		<ul style="list-style-type: none"> <li>• s37AA – A person who uses or enters the Marine Park has a duty to prevent or minimise harm to environment</li> </ul>	<ul style="list-style-type: none"> <li>• s38DD – offence to discharge waste</li> <li>• Reg 93C - reckless or negligent sewage discharge</li> <li>• Reg 93D – discharge of untreated sewage from vessels</li> <li>• Reg 93E – discharge of treated sewage from vessels</li> <li>• Reg 101 – must not litter in the Marine Park</li> </ul>
<b>Zoning Plan</b>		<ul style="list-style-type: none"> <li>• Allowed in General Use, Habitat Protection and Conservation Park Zone</li> <li>• Fishing not allowed in Scientific Research Zone, Marine National Park and Preservation Zones</li> <li>• Spearfishing not allowed in Public Appreciation Areas</li> </ul>			
<b>Permits</b>					
<b>Management plans</b>					<ul style="list-style-type: none"> <li>• Cairns Area PoM – some Sensitive Locations restriction on discharge of waster (including greywater, sewage, fresh fish – part or whole)</li> </ul>
<b>Site management</b>					
<b>Policy</b>				<ul style="list-style-type: none"> <li>• Incidental translocation partly addressed in <i>Position Statement on the Translocation of Species in the Great Barrier Reef Marine Park</i></li> </ul>	
<b>Research</b>		<ul style="list-style-type: none"> <li>• Fish Spawning Aggregation surveys</li> </ul>			
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on boating and yachting</li> <li>• Best practices on LMAC brochures</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices for fishing</li> <li>• Support for NEATFish accreditation of fishing tournaments</li> <li>• Support of Sunfish best practice guidelines and education and stewardship programs</li> <li>• Community education on baro-trauma and release techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on fishing</li> <li>• Support of Sunfish best practice guidelines and education and stewardship programs</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on boating and yachting</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on waste (including sewage), chemicals and litter</li> <li>• Reef Water Quality Guidelines</li> </ul>
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> <li>• Responses to stakeholder enquiries</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> <li>• Responses to stakeholder enquiries</li> </ul>

### Impacts on Great Barrier Reef ecosystem (continued)

	<b>Discharges and spills - small chemical spill</b>	<b>Discharges and spills - small oil spill</b>	<b>Litter and marine debris</b>	<b>Dredging and dumping of spoil – coastal marine facilities</b>	<b>Clearing or modifying coastal habitats – coastal marine facilities</b>
<b>Legislation</b>	<ul style="list-style-type: none"> <li>• s38DD – offence to discharge waste</li> </ul>	<ul style="list-style-type: none"> <li>• s38DD – offence to discharge waste</li> </ul>	<ul style="list-style-type: none"> <li>• Reg 101 – must not litter in the Marine Park</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Sea Dumping Act</i> administered by the GBRMPA in the Marine Park</li> <li>• <i>Environment Protection and Biodiversity Act 1999</i> assessment trigger if within the World Heritage Area and likely to have a significant impact on the environment</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Environment Protection and Biodiversity Act 1999</i> assessment trigger if within the World Heritage Area and likely to have a significant impact on the environment</li> </ul>
<b>Zoning Plan</b>					
<b>Permits</b>				<ul style="list-style-type: none"> <li>• Requires a permit if within the Marine Park</li> </ul>	
<b>Management plans</b>					
<b>Site management</b>					
<b>Policy</b>				<ul style="list-style-type: none"> <li>• Addressed in <i>Dredging and Spoil Disposal Policy</i></li> </ul>	
<b>Research</b>					
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on waste (including sewage), chemicals and litter</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on waste (including sewage), chemicals and litter, boating and yachting</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible Reef Practices on waste (including sewage), chemicals and litter, boating and yachting</li> <li>• LMAC, Reef Guardian Schools, Reef Guardian Councils and community involvement with beach and creek clean up activities</li> </ul>		<ul style="list-style-type: none"> <li>• Watching brief by LMACs on local coastal development issues</li> <li>• Reef Guardian Council best practices on engaging the community in coastal monitoring and restoration activities</li> </ul>
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> <li>• Responses to stakeholder enquiries</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website</li> <li>• Responses to stakeholder enquiries</li> </ul>	<ul style="list-style-type: none"> <li>• Information in GBRMPA printed material, website, education products</li> <li>• Information incorporated in media articles</li> <li>• Responses to stakeholder enquiries</li> <li>• Information provided to external publications including websites</li> <li>• Ad hoc educational talks</li> <li>• Best practices encouraged through Reef HQ education programs</li> </ul>	<ul style="list-style-type: none"> <li>• Information on GBRMPA website</li> </ul>	

<b>Impacts on Great Barrier Reef ecosystem</b>		
	<b>Clearing or modifying coastal habitats – unregulated beach access</b>	<b>Decreased water quality – coastal marine facilities</b>
<b>Legislation</b>		
<b>Zoning Plan</b>		
<b>Permits</b>		
<b>Management plans</b>		
<b>Site management</b>		
<b>Policy</b>		<ul style="list-style-type: none"> <li>• Addressed in <i>Policy on Sewage Discharges from Marine Outfalls to the Great Barrier Reef Marine Park</i></li> </ul>
<b>Research</b>		
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>• Reef Guardian Council best practices on foreshore and dune protection</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers contribute to water quality monitoring, including Marine Monitoring Program</li> <li>• Great Barrier Reef Water Quality Guidelines</li> </ul>
<b>Education and community awareness</b>		



<b>Impacts on cultural heritage</b>				
	<b>Damage to historic sites</b>	<b>Damage to sites of cultural significance to Traditional Owners</b>	<b>Removal of culturally significant artefacts</b>	<b>Interruption to Traditional Owner use and access to resources</b>
<b>Legislation</b>	<ul style="list-style-type: none"> <li>The objects of the Act (2A) include the protection and conservation of heritage values and assisting to meet Australia's international responsibilities in relation to the environment and protection of world heritage</li> </ul>	<ul style="list-style-type: none"> <li>The objects of the Act (2A) include the protection and conservation of heritage values and assisting to meet Australia's international responsibilities in relation to the environment and protection of world heritage</li> </ul>	<ul style="list-style-type: none"> <li>The objects of the Act (2A) include the protection and conservation of heritage values and assisting to meet Australia's international responsibilities in relation to the environment and protection of world heritage</li> </ul>	<ul style="list-style-type: none"> <li>The objects of the Act (2A) include the protection and conservation of heritage values and assisting to meet Australia's international responsibilities in relation to the environment and protection of world heritage</li> </ul>
<b>Zoning Plan</b>				<ul style="list-style-type: none"> <li>The Zoning Plan is not intended to extinguish Native Title rights and interests</li> <li>The Zoning Plan is not intended to affect section 211 of the Native Title Act 1993</li> </ul>
<b>Permits</b>				
<b>Management plans</b>	<ul style="list-style-type: none"> <li>Cairns Area, Hinchinbrook, and Whitsundays PoMs contain broad provisions for protecting cultural heritage</li> </ul>	<ul style="list-style-type: none"> <li>Cairns Area, Hinchinbrook, and Whitsundays PoMs contain broad provisions for protecting cultural heritage and consulting with Traditional Owners</li> </ul>		<ul style="list-style-type: none"> <li>Cairns Area, Hinchinbrook, and Whitsundays PoMs contain broad provisions for protecting cultural heritage and consulting with Traditional Owners</li> </ul>
<b>Site management</b>				
<b>Policy</b>				
<b>Research</b>				
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>Best practices on LMAC brochures (Mackay)</li> </ul>	<ul style="list-style-type: none"> <li>Best practices on LMAC brochures (Mackay)</li> <li>Cooperation by some LMACs with Traditional Owner groups</li> </ul>	<ul style="list-style-type: none"> <li>Best practices on LMAC brochures (Mackay)</li> </ul>	<ul style="list-style-type: none"> <li>Best practices on LMAC brochures (Mackay)</li> <li>Cooperation by some LMACs with Traditional Owner groups</li> </ul>
<b>Education and community awareness</b>				

Impacts on recreation experience					
	User conflict - other users (e.g. tourism, traditional owners, commercial fishers)	User conflict - different recreational activities	Shifts in recreational use – incompatible uses	Shifts in recreational use – poor environmental condition	Shifts in recreational use – improved safety and technology
<b>Legislation</b>	<ul style="list-style-type: none"> <li>Regs 52-56 – Restricted Access Special Management Areas (research areas), no entry without permission</li> <li>Part V111A of Act – Vessels over 70 metres must have a Reef pilot in compulsory pilotage areas</li> <li>Regs 57-59 – Public Appreciation Special Management Areas, must not be used for spearfishing, commercial aquarium fishing, coral and beachworm harvesting and aquaculture</li> </ul>	<ul style="list-style-type: none"> <li>Regs 57-59 – Public Appreciation Special Management Areas, must not be used for spearfishing</li> </ul>			
<b>Zoning Plan</b>	<ul style="list-style-type: none"> <li>Recreation access not permitted in two Scientific Research Zones (AIMS and One Tree Island)</li> </ul>	<ul style="list-style-type: none"> <li>Remote Natural Area provides opportunities for quiet appreciation and enjoyment (no motorised water sport)</li> </ul>			
<b>Permits</b>	<ul style="list-style-type: none"> <li>Permit for tourism, research, etc can be conditioned to reduce conflicts</li> <li>Reg 88Q(a) requires consideration of potential impacts on social values of the Marine Park</li> <li>Reg 88R(c) allows for consideration of potential impacts in the context of other conduct in the area or nearby areas</li> </ul>	<ul style="list-style-type: none"> <li>Permit required by organisers of events if impact is assessed as more than 'low impact'</li> </ul>	<ul style="list-style-type: none"> <li>Permit for tourism, research, etc can be conditioned to reduce conflicts</li> <li>Reg 88Q(a) requires consideration of potential impacts on social values of the Marine Park</li> <li>Reg 88R(c) allows for consideration of potential impacts in the context of other conduct in the area or nearby areas</li> </ul>		<ul style="list-style-type: none"> <li>Permits are required for recreational use of WIGS, and hovercraft</li> </ul>
<b>Management plans</b>	<ul style="list-style-type: none"> <li>Cairns Area - PoM – restrictions on number of people per vessel (lowest limit is 15 people in Low Use Locations)</li> <li>Hinchinbrook PoM - vessels 35 m or more must book to anchorages</li> <li>Hinchinbrook PoM - restrictions on number of people per tourism vessel</li> <li>Whitsundays PoM - group and vessel size limits at locations (lowest limits are 20m and 15 people)</li> </ul>	<ul style="list-style-type: none"> <li>PoMs restrict some activities e.g. motorised water sports</li> <li>Cairns Area and Hinchinbrook PoMs – restrictions on number of people per vessel (lowest limit is 15 people in Low Use Locations)</li> <li>Whitsundays PoM - group and vessel size limits at locations (lowest limits are 20m and 15 people)</li> </ul>	<ul style="list-style-type: none"> <li>PoMs restrict access and activities through vessel size and group size and arrangements at specific sites</li> </ul>	<ul style="list-style-type: none"> <li>PoMs restrict access and activities through vessel size and group size and arrangements at specific sites</li> </ul>	<ul style="list-style-type: none"> <li>PoMs restrict access and activities through vessel size and group size and arrangements at specific sites</li> </ul>
<b>Site management</b>	<ul style="list-style-type: none"> <li>Limit or trigger limit on number of daily tourism operations (e.g. Fitzroy Reef)</li> </ul>		<ul style="list-style-type: none"> <li>Site management arrangements provide a set rules for a range of uses including recreational use</li> </ul>	<ul style="list-style-type: none"> <li>Site management arrangements provide a set rules for a range of uses including recreational use</li> </ul>	<ul style="list-style-type: none"> <li>Site management arrangements provide a set rules for a range of uses including recreational use</li> </ul>
<b>Policy</b>					
<b>Research</b>	<ul style="list-style-type: none"> <li>2003 and 2008 surveys of recreation use by catchment residents</li> </ul>	<ul style="list-style-type: none"> <li>2003 and 2008 surveys of recreation use by catchment residents</li> </ul>			
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>Users report incidents through the Incident Reporting Program</li> </ul>	<ul style="list-style-type: none"> <li>Users report incidents through the Incident Reporting Program</li> </ul>			
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>Responses to stakeholder enquiries and concerns</li> <li>Reactive media</li> </ul>	<ul style="list-style-type: none"> <li>Responses to stakeholder enquiries and concerns</li> </ul>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> </ul>		

Impacts on Marine Park management					
	Lack of compliance – general management arrangements	Lack of compliance – use of in-Park infrastructure	Lack of compliance - illegal installation of structures (e.g. moorings)	Lack of information for effective management	Inadequate user understanding of management arrangements
<b>Legislation</b>	<ul style="list-style-type: none"> <li>A range of offence provisions in Act and Regulations</li> </ul>	<ul style="list-style-type: none"> <li>Reg 102 – offence to remove or misuse an Authority mooring (public mooring)</li> </ul>	<ul style="list-style-type: none"> <li>Reg 94 – Authority has power to order removal of unpermitted property</li> <li>Reg 101A – Mooring buoy must display reference number</li> </ul>		
<b>Zoning Plan</b>					
<b>Permits</b>					
<b>Management plans</b>					
<b>Site management</b>					
<b>Policy</b>		<ul style="list-style-type: none"> <li>Use of public moorings addressed in <i>Policy on Moorings in the Great Barrier Reef Marine Park</i></li> </ul>	<ul style="list-style-type: none"> <li>Unpermitted structures addressed in <i>Structures Policy</i></li> <li>Unpermitted moorings, standard mooring buoys and identification numbers addressed in <i>Policy on Moorings in the Great Barrier Reef Marine Park</i></li> </ul>		
<b>Research</b>				<ul style="list-style-type: none"> <li>2003 and 2008 surveys of recreation use by catchment residents</li> </ul>	
<b>Partnerships and best practice</b>	<ul style="list-style-type: none"> <li>Users can report incidents in the Marine Park</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices on anchoring and mooring</li> <li>Users can report incidents in the Marine Park</li> </ul>	<ul style="list-style-type: none"> <li>Installation of standard mooring buoys encouraged in Responsible Reef Practices</li> </ul>	<ul style="list-style-type: none"> <li>Users can report incidents in the Marine Park</li> </ul>	<ul style="list-style-type: none"> <li>Responsible Reef Practices</li> <li>Best practices on LMAC brochures</li> <li>Reef Forums sponsored by LMACs</li> <li>Local informal conservation partnerships with nature and conservation groups</li> </ul>
<b>Education and community awareness</b>	<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, education products</li> </ul>	<ul style="list-style-type: none"> <li>Use information provided on public moorings</li> <li>Moorings and reef protection information in brochures</li> </ul>	<ul style="list-style-type: none"> <li>Occasional articles in Searead and printed material as well as on websites</li> </ul>		<ul style="list-style-type: none"> <li>Information in GBRMPA printed material, website, educational products</li> <li>Information incorporated in media articles</li> <li>Responses to stakeholder enquiries</li> <li>Information provided to external publications including websites</li> <li>Ad hoc educational talks</li> <li>Best practices encouraged through Reef HQ education</li> </ul>

<sup>†</sup> Motorised water sports means irregular driving, weaving or surfing in a motorised vessel; an activity in which a high-speed vessel or motorised vessel tows a person on top of the water or in the air (e.g. example, waterskiing or parasailing) or an activity in which a personal watercraft is used, except for transport

<sup>††</sup> Species of conservation concern include threatened species (e.g. all turtles, some whales, dugong, some sharks and some seabirds), iconic species (e.g. all whales and dolphins, Maori wrasse, sea snakes) and 'at risk' species (e.g. most sharks and rays, giant clams)

## Appendix 2. Management arrangements by other agencies relevant to recreation, 2010

	Dept of Sustainability, Environment, Water, Population and Communities	Australian Maritime Safety Authority	Australian Quarantine and Inspection Service	Australian Customs	Civil Aviation Safety Authority	Qld Dept of Environment and Resource Management	Qld Dept of Transport and Main Roads, inc. MSQ	Qld Dept of Local Government and Planning	Fisheries Queensland	Queensland Boating and Fisheries Patrol	Queensland Police Service	Qld Dept of Employment, Economic Development and Innovation	Local government
<b>Activity</b>													
Viewing nature - snorkelling and diving						✓	✓						
Viewing nature - photography, bird watching, turtle watching, whale watching	✓				✓	✓							
Fishing						✓			✓	✓	✓		
Boating – motorised		✓	✓			✓	✓			✓	✓		
Boating – sailing vessels, kayaks and canoes						✓	✓			✓	✓		
Boating - super-yachts		✓	✓			✓	✓			✓	✓	✓	
Boating - non-motorised water sports						✓	✓			✓	✓		✓
Using high speed vessels - motorised water sports <sup>†</sup>						✓	✓			✓	✓		
Using high speed vessels – jet skis						✓	✓			✓	✓		
Using high speed vessels - hovercraft		✓				✓	✓						
Using aircraft					✓	✓							
Camping						✓							✓
<b>Supporting infrastructure</b>													
Coastal marine facilities - major (e.g. marinas)	✓		✓			✓	✓	✓	✓				✓
Coastal marine facilities – minor (e.g. boat ramps)							✓		✓				✓
Private moorings						✓	✓		✓				
Reef protection infrastructure (e.g. public moorings, markers)						✓	✓		✓				
<b>Impacts on the Great Barrier Reef ecosystem</b>													
Interference with species of conservation concern - boat strikes	✓					✓	✓		✓	✓			
Interference with species of conservation concern - disturbance	✓				✓	✓			✓	✓			✓
Snorkelling and diving –interference with wildlife						✓							
Snorkelling and diving - physical impacts						✓							
Anchoring on coral and seagrass beds						✓							
Grounding of vessels		✓				✓	✓			✓	✓		
Recreational take of marine resources						✓			✓	✓			
Introduction of exotic species – imported bait									✓				
Introduction of exotic species – hull fouling			✓				✓						
Discharges and spills - waste discharge (including sewage)		✓				✓	✓			✓	✓		
Discharges and spills - small chemical spill		✓				✓	✓			✓			



	Dept of Sustainability, Environment, Water, Population and Communities	Australian Maritime Safety Authority	Australian Quarantine and Inspection Service	Australian Customs	Civil Aviation Safety Authority	Qld Dept of Environment and Resource Management	Qld Dept of Transport and Main Roads, inc. MSQ	Qld Dept of Local Government and Planning	Fisheries Queensland	Queensland Boating and Fisheries Patrol	Queensland Police Service	Qld Dept of Employment, Economic Development and Innovation	Local government
Discharges and spills - small oil spill		✓				✓	✓			✓			
Litter and marine debris						✓				✓	✓		
Dredging and dumping of spoil – coastal marine facilities	✓					✓	✓	✓	✓				✓
Clearing or modifying coastal habitats – coastal marine facilities	✓					✓	✓	✓	✓			✓	✓
Clearing or modifying coastal habitats – unregulated beach access						✓					✓		✓
Decreased water quality – coastal marine facilities						✓	✓						✓
<b>Impacts on cultural heritage</b>													
Damage to historic sites	✓					✓					✓		
Damage to sites of cultural significance to Traditional Owners	✓					✓					✓		
Removal of culturally significant artefacts	✓					✓					✓		
Interruption to Traditional Owner use and access to resources	✓					✓							
<b>Impacts on recreation experience</b>													
User conflict - other users (e.g. tourism, traditional owners, commercial fishers)						✓			✓	✓			
User conflict - different recreational activities						✓			✓				
Shifts in recreational use – incompatible uses						✓	✓						✓
Shifts in recreational use – poor environmental condition	✓					✓	✓						✓
Shifts in recreational use – improved safety and technology						✓	✓						
<b>Impacts on Marine Park management</b>													
Lack of compliance – general management arrangements						✓	✓			✓	✓		
Lack of compliance – use of in-Park infrastructure						✓	✓			✓	✓		
Lack of compliance - illegal installation of structures (e.g. moorings)						✓	✓						
Lack of information for effective management						✓	✓			✓			
Inadequate user understanding of management arrangements	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓

† Motorised water sports means irregular driving, weaving or surfing in a motorised vessel; an activity in which a high-speed vessel or motorised vessel tows a person on top of the water or in the air (e.g. example, waterskiing or parasailing) or an activity in which a personal watercraft is used, except for transport.

## Appendix 3. Criteria for Ranking Consequence and Likelihood

Consequence or impact				
	Environmental	Social and Cultural	Economic	Political and Administrative
<b>Catastrophic</b>	Impact is clearly affecting, or would clearly affect, the nature of the ecosystem over a wide area. Recovery periods greater than 20 years likely.	Death of the visitor Visitor satisfaction drops below 4 out of 10. Long term bad press about GBR experience Over a wide area, most historic sites or sites of cultural significance are destroyed and sea country connections are severed	Severe economic loss and/or remedial costs Depressed regional economy	Severe damage to agency reputation Significant long-term effect on most clients
<b>Major</b>	At a broad scale, impact is, or would be, significant. Recovery periods of 10 - 20 years likely. At a local scale, impact is, or would be, extremely serious and possibly irreversible to a sensitive population or community. Condition of an affected part of the ecosystem possibly irretrievably compromised.	Extensive injuries - evacuation required Visitor satisfaction drops below 6 out of 10. Frequent serious complaints about Reef experience Over a wide area, many historic sites or sites of cultural significance are severely damaged and sea country connections are severely reduced. At a local scale, a historic site or site of cultural significance is destroyed, most artefacts removed and sea country connections are severed	Substantial economic loss and/or remedial costs Affecting significant portion of community	Substantial long term damage to agency reputation (1-2 years)
<b>Moderate</b>	At a broad scale, impact is, or would be, present. Recovery periods of 5 - 10 years likely. At a local scale, impact is, or would be, extremely serious and possibly irreversible over a small area. Recovery periods of 10 - 20 years likely	Medical treatment required Visitor satisfaction drops below 7 out of 10. Some complaints about Reef experience Over a wide area, some historic sites or sites of cultural significance are degraded, some artefacts removed and sea country connections are reduced At a local scale, a historic site or site of cultural significance is degraded and a some artefacts removed	Some economic loss and/or remedial costs	Substantial short to medium term damage to agency reputation (6-12 months)
<b>Minor</b>	At a broad scale, impact is, or would be, not discernible. Impact would not impair the overall condition of the ecosystem, sensitive population or community. Impact is, or would be, significant to a sensitive population or community at a local level. Recovery periods of 5 - 10 years likely.	Minor injuries only – first aid treatment required Visitor satisfaction drops below 8 out of 10. Occasional complaints about Reef experience Impact has a small but discernable effect on historic sites or sites of cultural significance or on sea country connections	Minimal economic loss and/or remedial costs	Some short term damage to agency reputation (<6 months)
<b>Insignificant</b>	No impact or if impact is, or would be, present then only to the extent that it has no discernible effect on the overall condition of the ecosystem.	No injuries Visitor satisfaction high Reef experience good No discernible effect or impact on historic sites or sites of cultural significance or on sea country connections	No economic loss or remedial costs	No loss of agency reputation

- Only 1 aspect of the impact definition is necessary to qualify for a category

Likelihood	
<b>Almost certain</b>	Is expected to occur at most times
<b>Likely</b>	Will probably occur at most times
<b>Possible</b>	Might occur at some time
<b>Unlikely</b>	Could occur in some circumstances
<b>Rare</b>	May occur in exceptional circumstances

Risk Matrix	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood					
Almost certain	Low	Medium	High	Very High	Very High
Likely	Low	Medium	High	High	Very High
Possible	Very Low	Low	Medium	High	High
Unlikely	Very Low	Low	Low	Medium	High
Rare	Very Low	Very Low	Low	Low	Medium

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