Existing protection and management

Chapter 7

*‘an assessment of the existing measures to protect and manage the ecosystem…’* within the Great Barrier Reef Region, Section 54(3)(f) of the *Great Barrier Reef Marine Park Act 1975*

*‘an assessment of the existing measures to protect and manage the heritage values…’* of the Great Barrier Reef Region, Section 116A(2)(d) of the *Great Barrier Reef Marine Park Regulations 1983*

< Photograph of *Reef Ranger*, a large Marine Parks vessel. Copyright Queensland Parks and Wildlife Service.

2014 Summary of assessment

|  |  |  |  |
| --- | --- | --- | --- |
| **Understanding of context** | Context is assessed as the strongest management effectiveness element and trends are either stable or improving. Understanding of values, direct and indirect threats and stakeholders is generally strong. Understanding of cumulative and consequential impacts as well as condition and trend is improving and has been effectively documented through the Outlook Report and strategic assessment processes. In particular, tourism, defence activities, recreation, research activities and land-based run-off are well understood. This reflects a solid information and research base and a very mature understanding of the key values of the Region. | Very good | **Very good**, Improved |
| **Planning** | Significant efforts have been made in planning for a number of topics such as biodiversity protection and recreation. Planning effectiveness has declined for climate change measures specific to the Region, principally as a result of changing policy and a lack of clarity about future directions. It has also declined for commercial marine tourism and research activities, largely because plans and policies have not been completed or updated. For coastal development, the fractured nature of the planning regime is problematic and recent changes have raised concerns. Planning effectiveness has improved for the management of land-based run-off and traditional use where the investment of resources is paying dividends. Lack of consistency across jurisdictions is the weakest aspect of planning. | Good | **Good**,  Stable |
| **Financial, staffing and information inputs** | Adequacy of inputs is variable across management topics, being least effective for community benefits, coastal development, and non-Indigenous heritage management. Poor understanding of heritage values is a problem for most issues and is among the worst performing criteria across the whole assessment. Availability of socioeconomic knowledge has improved. Substantial resources have been devoted to the topics of land-based run-off and traditional use. Secure resourcing is a significant ongoing problem for many management topics. In many cases the lack of adequate resources to advance planning and management is constraining the effectiveness of other aspects of management. | Poor | **Poor**,  Stable |
| **Management systems and processes** | Management processes are particularly strong for defence activities, shipping and management of land-based run-off. They are weakest for coastal development, community benefits and Indigenous heritage values. Addressing consequential and cumulative impacts, application of socioeconomic and Indigenous knowledge, and setting of targets to benchmark performance are problematic for most issues. Consideration of cumulative and consequential impacts has improved substantially. Stakeholder engagement and application of biophysical information are the strongest aspects of management across all issues. | Good | **Good**, Deteriorated |
| **Delivery of outputs** | Delivery of desired outputs was rated as effective or very effective for all topics except coastal development. It is strongest for commercial marine tourism, defence activities, research activities and land-based run-off, where there has been a noticeable improvement. The knowledge base of managing agencies and the community has consistently improved. While the majority of management programs are progressing satisfactorily, timeframes frequently slip and it is not yet clear that the programs are achieving all their desired objectives. | Good | **Good**,  Stable |
| **Achievement of outcomes** | Achievement of desired outcomes is highly variable across the management topics. Objectives in relation to community understanding of issues and development of effective partnerships are being achieved. Performance in outcomes is especially strong for research activities, shipping and defence activities. Overall, the weakest performance was for climate change, then coastal development, land-based run-off and fishing. For land-based run-off, the continued poor outcomes for the Region are largely due to scale of the problem and lags within the natural system. | Poor | **Poor**, Deteriorated |

Full assessment summary: see Section 7.5

# Existing protection and management

## Background

**Outlook Report 2009: Overall summary of existing protection and management**

*Management effectiveness challenges are evident for those management topics which are broad in scale and complex socially, biophysically and jurisdictionally (for example climate change, coastal development, water quality and fishing). Effectiveness is strongest on issues that are limited in scale, intensity or complexity (for example defence and scientific research).*

*While significant improvements have been made in reducing the impacts of fishing in the Great Barrier Reef, such as bycatch reduction devices, effort controls and closures, important risks to the ecosystem remain from the targeting of predators, the death of incidentally caught species of conservation concern, illegal fishing and poaching. The flow on ecosystem effects of losing predators, such as sharks and coral trout, as well as further reducing populations of herbivores, such as the threatened dugong, are largely unknown but have the potential to alter food web interrelationships and reduce resilience across the ecosystem.*

*Non-extractive uses within the Great Barrier Reef, such as commercial marine tourism, shipping and defence activities, are independently assessed as more effectively managed and are a lower risk to the ecosystem; however the risk of introduced species is likely to increase with projected increases in shipping when global economic recovery occurs. While many of the management measures employed in the Great Barrier Reef Region and beyond are making a positive difference, for example the Great Barrier Reef Marine Park Zoning Plan 2003, the ability to address cumulative impacts is weak.*

Protection and management of the Great Barrier Reef Region (the Region) is a partnership between many government agencies, stakeholders and community members, with activities both on the water and in the catchment. An understanding of the effectiveness of these activities is an important component in determining the likely resilience of the Region’s ecosystem and heritage values, assessing the major risks that remain for the Great Barrier Reef and predicting its outlook.

The effectiveness of existing measures to protect and manage the Region’s ecosystem was independently assessed in the *Great Barrier Reef Outlook Report 2009.*1

A similar assessment by four independent reviewers has been undertaken for this report, with additional emphasis on the effectiveness of measures to protect and manage heritage values. The assessment considers the activities of all government agencies and other contributors that play a role in protection and management of the Region.

### Roles and responsibilities

Key message: Both the Australian and Queensland governments have legislative responsibilities within the Region.

Key message: Many government agencies, Traditional Owners, industries, researchers and community groups contribute to protection and management.

Protection and management responsibilities within the Region Both the Australian and Queensland governments have direct legislative responsibilities within the Region (Figure 7.1). Under Australia’s constitution, regulation of natural resource management and environment protection are primarily the responsibility of state governments — in this case, Queensland. However, the Great Barrier Reef and Australia’s world and national heritage properties are protected through national regulation.

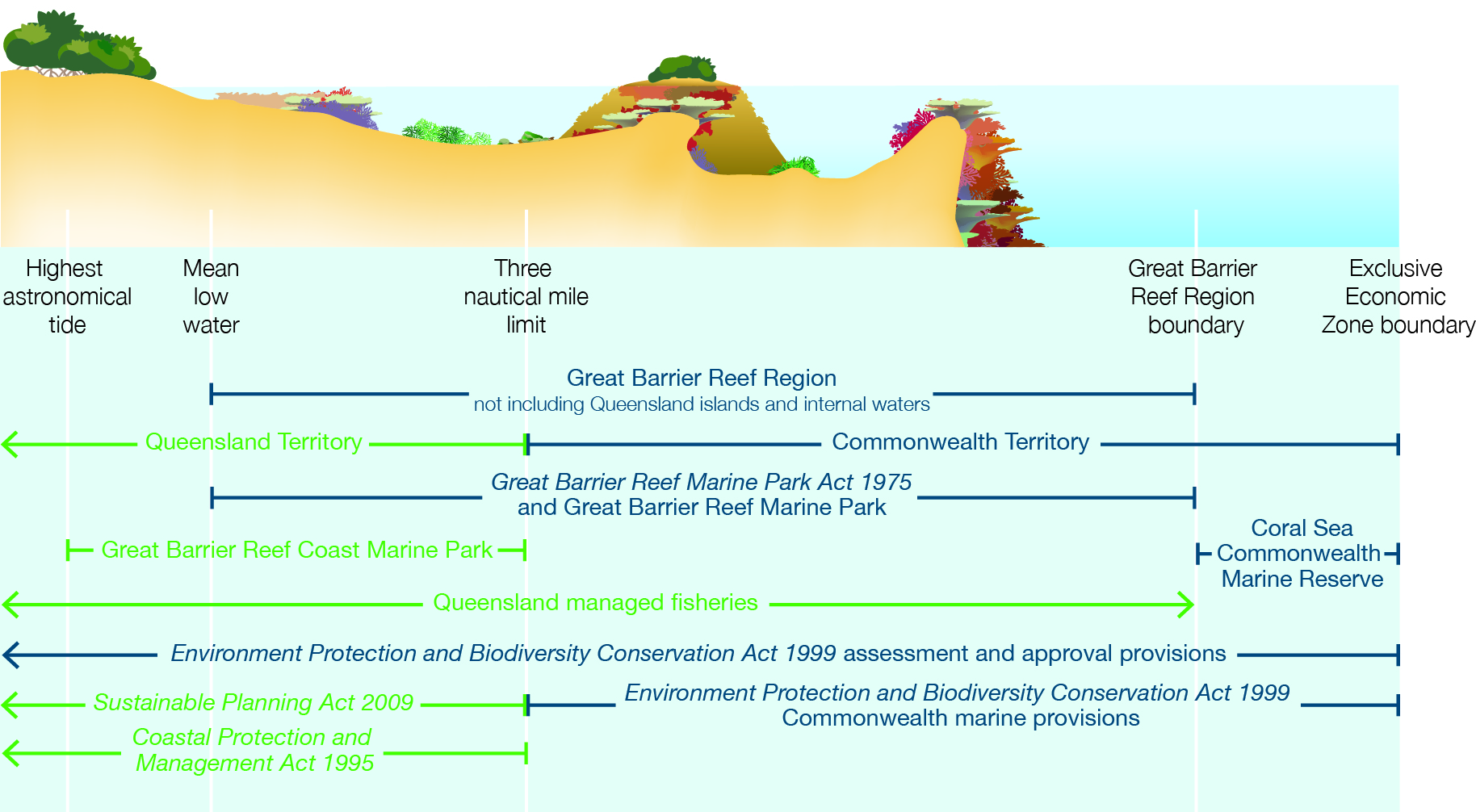


Figure . Jurisdictional boundaries

The Great Barrier Reef Region encompasses both Commonwealth and Queensland jurisdictions. Queensland territory extends from the land to the three nautical mile limit. An agreement to jointly manage marine parks and island national parks ensures integrated field management of both the Great Barrier Reef Marine Park and the adjacent Great Barrier Reef Coast Marine Park. Fisheries management, within the Region and beyond, is a Queensland Government responsibility. The assessment and approval provisions of the Environment Protection and Biodiversity Conservation Act 1999 apply throughout the Region; however, its Commonwealth marine area provisions apply only in Commonwealth Territory.

The *Great Barrier Reef Marine Park Act 1975* (the Act) establishes the Great Barrier Reef Marine Park Authority and governs its operations. The main object of the Act is to provide for the long-term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region. The Great Barrier Reef Marine Park Authority manages the Great Barrier Reef Marine Park (see Figure 1.1) in accordance with the Act. This Commonwealth marine protected area is complemented by the Queensland Great Barrier Reef Coast Marine Park in adjacent Queensland waters.

The Australian and Queensland governments work in partnership to protect and manage the Region, formalised through the *Great Barrier Reef Intergovernmental Agreement 2009*. There is a close working relationship between the responsible government agencies, resulting in joint management on many issues within the Great Barrier Reef Marine Park, the adjacent Queensland Great Barrier Reef Coast Marine Park and Queensland island national parks.

Protection and management responsibilities outside the Region Many of the threats to the Region’s ecosystem and heritage values are the result of actions beyond its boundaries (such as climate change, coastal development and catchment land-use practices). There is a range of Australian, Queensland and local government agencies that have regulatory responsibilities for these matters.

The Australian Government has national and international responsibilities in relation to environment and heritage protection. Under the *Environment Protection and Biodiversity Conservation Act 1999*, it is responsible for regulating activities having or likely to have a significant impact on matters of national environmental significance (including the Great Barrier Reef Marine Park and world heritage properties), whether they are undertaken in or outside the Region. The Queensland Government is responsible for natural resource management and land use planning for Queensland’s islands, coast and hinterland, including through the *Sustainable* *Planning Act 2009* and the *Coastal Protection and Management Act 1995*.

[Photograph of three Queensland Parks and Wildlife officers walking on a beach carrying various items of equipment. Copyright Chris Jones. Caption: The Australian and Queensland governments work in partnership to manage the Region.]

Partners in management In addition to the Great Barrier Reef Marine Park Authority, many government agencies, Traditional Owners, stakeholders and individuals directly participate in protection and management activities within the Region and the adjacent catchment. For example:

* Within the Australian Government: the Department of the Environment is responsible for implementing the Environment Protection and Biodiversity Conservation Act; Border Protection Command provides aerial surveillance of the Region; and the Australian Institute of Marine Science undertakes research that supports management.
* Within the Queensland Government: the Queensland Parks and Wildlife Service is responsible for day-to-day field management; the Department of Environment and Heritage Protection is the lead agency on environmental management matters in intertidal areas, internal waters and the catchment; and Queensland Boating and Fisheries Patrol enforces fisheries, marine park and transport legislation.
* Local governments are responsible for local planning and development decisions and providing local roads, waste removal and water treatment in the catchment.
* Traditional Owners work to protect cultural and heritage values, conserve biodiversity and enhance the resilience of the Great Barrier Reef.
* Industry groups, regional natural resource management bodies, research institutions, schools, community groups and individuals are involved in presenting the world heritage values of the Region, understanding the Region’s values, minimising impacts, addressing threats and improving outcomes.

In addition, the Great Barrier Reef Marine Park Authority receives advice on protection and management of the Great Barrier Reef Marine Park from 12 Local Marine Advisory Committees and issues-based Reef Advisory Committees and places a strong emphasis on community engagement, consultation and participation. The Queensland Government maintains structured advisory arrangements for tourism management through its State-wide Tourism Industry Forum.

### Focus of management

Activities to protect and manage the Great Barrier Reef are focused on 14 broad management topics:

**Managing direct use**

* commercial marine tourism
* defence activities
* fishing
* ports
* recreation (not including fishing)
* research and educational activities
* shipping
* traditional use of marine resources.

**Managing external factors**

* climate change
* coastal development
* land-based run-off.

**Managing to protect the Region’s values**

* biodiversity values
* heritage values
* community benefits of the environment.

These topics are the basis of the assessment of existing measures to protect and manage the Region’s ecosystem and heritage values.

The majority of management topics examined in the Outlook Report 2009 are repeated in this report. The amendments are: ports and shipping are separated to reflect the differences in both their management arrangements and their potential effects on the Region; and the topic of community benefits is added. Community benefits include aspects such as employment and income, and less tangible attributes such as understanding, appreciation, enjoyment, personal connection, health benefits and access to the Reef.

The effectiveness of managing education activities was not assessed by the independent assessors as it is only a small component of the overall management task.

[Photograph of a fishing boat grounded on the reef at Lady Elliot Island. Caption: Incidents such as this grounding off Lady Elliot Island trigger a multi-agency response.]

### Management approaches and tools

Key message: A wide range of tools is employed in protecting and managing the Region.

In protecting and managing the Region, three main management approaches are used:

* Environmental regulation: management tools such as regulations, zoning plans, management plans, permits and licences, and compliance are used to establish the statutory arrangements and environmental standards necessary to protect and manage the Reef.
* Engagement: managing agencies work with Traditional Owners, the community, business, industry and local government to influence best practice and encourage actions that will help secure the future health of the Reef.
* Knowledge, integration and innovation: management is based on the best available science as well as drawing on traditional ecological knowledge and information from the wider community, and is informed by the results of ongoing monitoring.

Each of these approaches is explicitly assessed in Section 7.4. They were not assessed in the Outlook Report 2009.

A wide range of tools is employed to implement these approaches:

* Acts and Regulations
* zoning plans
* management plans
* permits and licences (including environmental impact assessment and measures to avoid, mitigate and offset impacts)
* Traditional Owner agreements
* compliance
* site infrastructure
* fees and charges
* policy (including strategies, policies, position statements, site management arrangements and guidelines)
* partnerships
* stewardship and best practice
* education and community awareness
* research and monitoring
* reporting.

Each management tool is employed to address a number of topics and a combination of tools is applied to each topic (Table 7.1). In the assessment, all of the relevant tools are considered for each management topic.

Table . Management tools used in addressing the broad management topics

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Management tools** | **Direct uses** | | | | | | | | | **External factors** | | | | **Values** | | |
| Commercial marine tourism | Defence activities | Fishing | Ports | Recreation (other than fishing) | Research and educational activities | Shipping | Traditional use of marine resources | Climate change | | Coastal development | Land-based run-off | Biodiversity values | | Heritage values | Community benefits of the environment | |
| Acts and Regulations | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ |  | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Zoning plans | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ |  | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Management plans | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ |  | |  |  | ⚫ | | ⚫ | ⚫ | |
| Permits and licences | ⚫ |  | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ |  | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Traditional Owner agreements |  |  |  |  |  |  |  | ⚫ |  | |  |  | ⚫ | | ⚫ | ⚫ | |
| Compliance | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ |  | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Site infrastructure | ⚫ |  | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ |  |  | |  |  | ⚫ | | ⚫ | ⚫ | |
| Fees and charges | ⚫ |  | ⚫ | ⚫ |  | ⚫ | ⚫ |  |  | |  | ⚫ |  | |  |  | |
| Policy | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | ⚫ | | ⚫ |  | |
| Partnerships | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Stewardship and best practice | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Education and community awareness | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Research and monitoring | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |
| Reporting | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | ⚫ | | ⚫ | ⚫ | |

## Assessing protection and management measures

Key message: The effectiveness of protection and management measures was independently assessed.

In order to ensure the independence of the assessment of existing measures to protect and manage the Region’s ecosystem and heritage values, the Great Barrier Reef Marine Park Authority commissioned four external independent assessors to jointly undertake the assessment. These assessors have expertise in protected area management, defence, ports and shipping, monitoring and evaluation, public policy and governance. Their report2 is summarised in Sections 7.3 to 7.5 of this chapter.

### **Scope**

As with the Outlook Report 2009, the assessment includes the activities of all Australian and Queensland government agencies and other partners that contribute to protection and management of the Region. The scope is therefore much broader than just the Great Barrier Reef Marine Park Authority.

Management actions undertaken both inside and outside the Region are examined to the extent that they influence protection and management of the Region’s ecosystem and heritage values. In relation to the global issue of climate change, the assessment considers measures undertaken specifically to protect and manage the Region and does not consider broader state, national and global initiatives. While it is recognised that activities and management arrangements beyond Australia affect some migratory species, these are beyond the scope of this report.

### **Assessment method**

Key message: A structured framework guided the assessment of effectiveness.

So that the assessment is comparable with that reported in 2009, the independent assessment again followed the framework for evaluating the effectiveness of management of protected areas developed by the International Union for the Conservation of Nature and Natural Resources (IUCN) World Commission on Protected Areas3.

This framework is based on a management cycle in which management is continuously evaluated and refined (Figure 7.2).

An image of a framework process that has three phases and six elements.
Phase 1 – design/planning.  Element 1 - context status and threats, where are we now? Element 2 – planning, where do we want to be and how will we get there?
Phase 2 – adequacy/appropriateness. Element 3 inputs, what do we need. Element 4 – process, how do we go about management?
Phase 3 – delivery. Element 5 – outputs, what did we do and what products or services were produced. Element 6 – outcomes, what did we achieve?
The cycle starts at phase 1, element 1 and continues to phase 3, element 6 where the cycle continues and begins again. Throughout each element there is also a process of evaluation.


Figure . Framework for assessing management effectiveness of protected areas

Effective management is a closed loop where issues are considered, plans are made, resources are expended, proper processes are followed and products and services are delivered, all leading to outcomes that address the issues. Source: Adapted from Hockings *et al.* 20063

The independent assessment of the effectiveness of existing protection and management measures examined the six elements of the management cycle for each management topic outlined in Section 7.1.2 above. Each topic was assessed independent of the others.

For each management topic, the independent assessors used a series of indicators to assess effectiveness at each stage of the management cycle (Appendix 4). The indicators varied slightly from those in the Outlook Report 2009. Some were refined based on the experience of that and subsequent assessments; some were deleted because they were no longer relevant or had proved difficult to reliably assess.

Based on the results of the assessment of each management topic, the independent assessors also provided a summary of effectiveness for each of the three broad management approaches (environmental regulation, engagement, and knowledge, integration and innovation).

### **Information used**

Key message: There is wide variation in the scale and complexity of management topics.

Information relevant to assessing performance against each of the indicators was assembled by both Australian and Queensland government agencies and provided to the independent assessors. They also sought additional information from relevant research papers and other source documents.

The assessment was based on documentation available and advice provided before the end of December 2013. Where necessary, information has been updated after this date, but this has not been comprehensive.

### **Scale and complexity**

The assessment of effectiveness for each management topic has not been weighted to take into account differences in scale and complexity between topics (Table 7.2).

Table . Scale and complexity of management topics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Management topic** | **Scale** | **Complexity** | | |
| **Social** | **Biophysical** | **Jurisdictional** |
| **Managing direct use** | | | | |
| Commercial marine tourism | Region-wide but variable in intensity | Major | Moderate | Moderate |
| Defence activities | Limited in area and duration | Minor | Minor | Minor |
| Fishing | Region-wide but variable in intensity | Major | Major | Moderate |
| Ports | Concentrated around ports | Major | Moderate | Major |
| Recreation (not including fishing) | Region-wide but variable in intensity | Major | Moderate | Moderate |
| Research activities | Region-wide but limited in intensity | Minor | Moderate | Minor |
| Shipping | Concentrated around shipping lanes | Moderate | Moderate | Moderate |
| Traditional use of marine resources | Region-wide but variable in intensity | Major | Moderate | Moderate |
| **Managing external factors** | | | | |
| Climate change | Region-wide | Major | Major | Major |
| Coastal development | Region-wide, limited to coastal catchment areas and mainly inshore waters | Major | Major | Major |
| Land-based run-off | Great Barrier Reef catchment and mainly inshore waters | Major | Major | Major |
| **Managing to protect the Region’s values** | | | | |
| Biodiversity values | Region-wide | Minor | Major | Moderate |
| Heritage values | Region-wide | Major | Moderate | Moderate |
| Community benefits of the environment | Region-wide | Major | Moderate | Minor |

## Assessment of existing protection and management measures

***The following assessment of existing measures to protect and manage the Region’s ecosystem and heritage values is a summary of an independent analysis by four independent expert assessors.***

The full report of the independent assessors2 is available online at www.gbrmpa.gov.au.

**Managing direct use**

### Commercial marine tourism

Key message: Sound governance and industry partnerships are in place to address tourism issues.

Key message: Effectiveness of tourism management has declined as emphasis has shifted to emerging issues.

Tourism within the Region is recognised by managers as one of its most significant uses and a key mechanism for presenting its values to Australian and international visitors. Tourism is also acknowledged to be a major driver for economic growth and employment for coastal Queensland.

The mutual understanding between managers, tourism operators and the conservation sector on the Reef’s values relevant to tourism was improved as part of the process to recognise it as a ‘national landscape’4. Reef tourism continues to perform well in terms of both visitor satisfaction and economic benefit.

There are sound governance and partnership arrangements for managing tourism, with a mix of tools employed. Consistency across jurisdictions is helped by joint permitting and assessment processes, although changes to Queensland Government policy have introduced some incompatibilities. A key issue is the complexity of the management arrangements and the level of understanding required of operators. Overall outcomes in relation to commercial marine tourism would likely be improved through simplification and alignment of management arrangements. There is no permit compliance program — although non-compliance is unlikely to be significantly threatening the Region’s values.

An online system for the Environmental Management Charge, an online bookings system and improvements in permits management have increased user accessibility as well as improving understanding of the implications of latent capacity and trends in use. Ageing and poorly maintained tourism infrastructure is an emerging issue; an audit and compliance plan is being developed and relevant policy updated.

Planning has not proactively addressed emerging trends and opportunities as effectively as it might. While plans of management are in place for intensively-used areas, planning capability and the lack of a schedule of regular reviews affect the currency and consistency of plans. Although under development, an overarching strategy to guide tourism management identified as lacking in the Outlook Report 2009 is still to be finalised, and site planning has not expanded to areas where use is increasing. Policies covering many aspects of tourism are outdated.

The Great Barrier Reef Marine Park Authority continues to have high levels of skills related to marine tourism management and impact assessment, and continues to receive expert advice from its advisory committees. There has been a general decline in the delivery of interpretation about the Region and its values by the tourism industry, due mainly to difficulties in recruiting suitable staff and reductions in training opportunities.

Reef health monitoring information provided by tourism operators through the Great Barrier Reef Marine Park Authority’s Eye on the Reef program improves the information available for decision making. Monitoring information is better integrated, and the program has a user-friendly data portal and online training. Government agencies, scientists and the tourism industry are collaborating closely in addressing the threat of crown-of-thorns starfish outbreaks, especially at sites of high tourism value. The number of operators participating in the partnership High Standard Tourism program continues to grow, with the majority of tourists visiting the Reef on an independently certified high standard operator.

To some extent, successes in managing tourism have meant that management emphasis has shifted from it to other higher risk issues. This is reflected in a reduction of the management effectiveness grades relating to planning and management processes and a declining trend in the grades for management inputs and outputs.

### Defence activities

Key message: Defence activities continue to be managed very effectively with close cooperation between agencies.

Activities undertaken by the Department of Defence in the Region continue to be managed effectively with close cooperation clearly evident between the Department of Defence, Great Barrier Reef Marine Park Authority and other agencies. The Department of Defence recognises the area’s world heritage status and the pressures it is facing, and is generally implementing best practice environmental management.

There is a management agreement between the Great Barrier Reef Marine Park Authority and the Department of Defence on implementation of a strategic environmental assessment of defence activities in the Great Barrier Reef Marine Park.5 Strategic documents, policies and regular meetings facilitate implementation of the agreement and ensure a consistent approach with other management agencies.

[Photograph of army personnel and a tank on a beach during a training exercise. Caption: Defence training exercise, Shoalwater Bay in the south of the Region.]

A key factor in achieving the evident high standard of management is that professional expertise, with access to appropriate levels of funding (and other management resources), has been made available to support defence activities in the Region and the adjacent defence training areas.

Training exercises include good performance monitoring, debriefs and post-exercise monitoring. The identification of clear environmental performance indicators in relation to training exercises, particularly those related to addressing cumulative impacts, remains a challenge. The adoption of new training activities and platforms, and changing patterns and intensities of training activities, are likely to present new environmental management challenges, especially in managing their cumulative impacts.

There is emerging understanding of the unexploded ordnance, explosive ordnance waste, and the wide range of dumped war materials present in the Great Barrier Reef, particularly from World War II and immediately after. The Department of Defence implements Australian Government policy on unexploded ordnance and gathers and disseminates information to assist with the safe management of land and sea areas that may be subject to contamination. Not all sites in the Region are known or documented and there is no overall plan for monitoring or remediating unexploded ordnance in the Region. While the explosive risks are likely to be low and the incident response mechanism is generally excellent, the management framework and policies to address these legacy issues is dated and well below contemporary best practice for dealing with contamination by hazardous materials.

Adequate biophysical information within defence training areas continues to be available for decision making, including through hydrographic and ecological surveys. The Department of Defence undertakes community engagement for major exercises and has environmental advisory committees for its training areas.

A systematic approach generally ensures that statutory and planning timeframes are routinely met and results are reported by the Department of Defence in a timely manner. While Authority staff have an appropriate mix of skills to fulfil their statutory responsibilities for defence activities, the liaison and monitoring work is undertaken as a relatively low priority by a small number of Great Barrier Reef Marine Park Authority staff.

Defence training activities continue to be effectively undertaken in the Region. Any impacts are localised and short-term, with any incidents well managed.

### Fishing

Key message: Understanding of fishing and its impacts has improved; however, outcomes remain poor.

Fishing is the principal extractive use of the Great Barrier Reef. Sustainable recreational, charter and commercial fisheries in the Region depend on a healthy Reef ecosystem.

Management of fishing and the aquatic environment on which it relies is shared between the Australian and Queensland governments, principally through Queensland’s regulation, monitoring, compliance and education programs which include licensing commercial fishing, closures, gear and catch limits; and the programs of the Great Barrier Reef Marine Park Authority which include zoning, regulations, some permitting and stewardship programs. There are inconsistencies between state and Commonwealth management arrangements, for example some closure and apparatus requirements. The management arrangements for most commercial fisheries in the Region are accredited against national sustainability guidelines under the Environment Protection and Biodiversity Conservation Act. All accreditations in the Region are subject to conditions and recommendations.

In general, the activities and programs relating to fishing have progressed in accordance with planned work programs. Several major management initiatives have been progressed, for example the rollout of the $9 million buyout in the net fishery (which, as at December 2013, had removed 69 large mesh net symbols). In addition research studies, monitoring, extension work on bycatch reduction and reviews such as the trawl plan have informed management. However, actual changes to protect values and improve practices from these initiatives are more limited.

The achievement of outcomes presents ongoing challenges for fisheries management. Almost all fisheries sectors demonstrate varying degrees of progress towards desired biodiversity outcomes and better sustainability outcomes, but this is undermined by illegal fishing activities.

As identified in the Outlook Report 2009, there is a good understanding of the retained commercial catch. Key indicator fish species are monitored and assessed annually using information from monitoring and research. Ecosystem effects and cumulative impacts are poorly understood. Understanding of the risks associated with the East Coast Otter Trawl Fishery in the Great Barrier Reef has been improved through a comprehensive ecological risk assessment. The Great Barrier Reef Marine Park Authority has completed vulnerability assessments for two fisheries species.6,7

The Queensland Government annually identifies strategic and operational information needs for fisheries management, informed by annual status assessments of stocks, research findings and community concerns. However, the stock status of only 29 of the 65 fisheries resources harvested on the east coast of Queensland are defined. The remainder are classified as either uncertain or undefined because there is insufficient information available to make an assessment.

While there are specific programs to collect fisheries information, such as biological monitoring, recreational surveys and analysis of fisheries logbooks, they are often limited in scope and there is a lack of publicly available information on some. Anecdotal evidence suggests that interactions with ‘species of conservation interest’ are often not reported. Vessel monitoring systems are only in place for selected fisheries such as the East Coast Otter Trawl Fishery.

The ways in which fisheries interact with non-target species are understood, but remain largely unquantified. There are regulations aimed at minimising or preventing interactions. Limits on participation and gear restrictions are used to address remaining risks and unknown interactions. Protection of dugong from commercial netting in areas such as Bowling Green Bay has improved.

Ecosystem effects and cumulative impacts of recreational fishing are less well understood. In this sector, local depletion, particularly of some inshore species, is of concern in some areas.

Illegal fishing is considered one of the greatest risks to the environmental sustainability of fishing activities in the Region. Compliance activities, undertaken by the Queensland Boating and Fisheries Patrol, Border Protection Command and the Marine Parks joint Field Management Program, play a significant role in managing the impacts of fishing.

The resources available to agencies for the management of fishing have declined since 2009. For example, staffing resources in the Queensland Department of Agriculture, Fisheries and Forestry have declined by over one-third since 2009 and funding for the Field Management Program, which is responsible for many of the compliance activities, has been static since 2008 and declined in real terms.

Regionally based liaison and regular meetings with industry representatives aid communication and help identify and address issues. Stewardship among commercial fishers is promoted through the Great Barrier Reef Marine Park Authority’s pilot Reef Guardian Fishers program which, as at December 2013, involved nine operations and up to 50 fishing vessels.

### Ports

Key message: Ports are generally well managed; there has been a lack of coordinated planning and guidance.

In this assessment, the topic of 'ports' encompasses all aspects of the development, operation and maintenance of ports, with the exception of ship movements. It includes construction and maintenance of port facilities and navigational equipment, dredging, dredge material disposal, movement of harbour support vessels and the declaration and siting of anchorages (see Figure 5.23 for the location of anchorages). The assessment is confined to those aspects of the operation and management of Great Barrier Reef ports pertinent to the Region’s ecosystem and its heritage values.

There are 12 Great Barrier Reef ports, managed by four individual port authorities, all of which are Queensland Government-owned corporations. Of these, eight are located at least partly in the Region: Quintell Beach, Cape Flattery, Cooktown, Lucinda, Townsville, Abbot Point, Mackay and Hay Point.

Individual Great Barrier Reef ports are assessed as generally well managed, although there have been instances of shortfalls in planning and development programs. It is recognised that planning for future port developments could be improved. Effective implementation of the Queensland Government’s *Queensland Ports Strategy*, combined with its statutory ports master planning processes, should improve this situation.

The ways in which ports and port activities threaten or influence the Region’s ecosystem and its heritage values are not clearly understood. For example, there remains uncertainty about the effects of resuspended dredge material on the Region’s values. The outcomes of recent modelling suggest resuspended material could move over greater distances than previously assumed, but there is limited consensus on the implications for the Region.

Stronger coordination of environmental monitoring, reporting, and research and evaluation within and between ports would improve understanding of their combined effects and influences on the Region’s ecosystem and its heritage values. Monitoring programs are also not sufficient to indicate new or emerging threats, such as a significant deterioration in water quality or the incidence of invasive marine species.

There is a lack of clear guidelines and management targets for the guidance of port developers and operators and the associated regulatory authorities addressing the operation of ports in relation to the protection and management of the Region’s ecosystem and its heritage values.

[Photograph from the air of the port of Hay Point. Copyright Susan Sobtzick.]

Port planning in the recent past has appeared somewhat *ad hoc.* The significantly elevated number of port development proposals in the Region has accentuated concerns, both in Australia and internationally, about the likely future impacts of ports and port activities on the Region. Although some of the proposed port developments had the potential to threaten the Region’s ecological processes and integrity, it is pertinent to recognise that to date port developments have not resulted in any significant, widespread deterioration of the Region. Some localised effects are recognised, for example at dredging and marine disposal sites.

### Recreation (not including fishing)

Key message: An overarching recreation management strategy has improved understanding and coordination.

Responsibility for managing non-extractive recreation is spread across a variety of Australian and Queensland government agencies. Principal among these are the Great Barrier Reef Marine Park Authority, the Queensland Department of National Parks, Recreation, Sport and Racing, and Maritime Safety Queensland.

Recreation in the Region is managed through a variety of tools and coordination between relevant agencies in enforcing marine parks management arrangements is high. Some products and services such as maps and brochures are jointly prepared and presented. The diffuse nature of recreation means that the management arrangements do not provide certainty regarding where uses may occur and where any impacts are likely to be acceptable.

Substantial increases in the numbers of visits made by recreational users and shifts in the popularity of activities have been documented8. The results of the Social and Economic Long-term Monitoring Program are beginning to improve understanding of recreational use in the Region, including users’ values and activities.

The lack of an overarching document to guide planning for recreational use was identified in the Outlook Report 2009 and has been addressed by the Great Barrier Reef Marine Park Authority through subsequent preparation of a *Recreation Management Strategy for the Great Barrier Reef Marine Park*9. The strategy is designed to provide an overarching framework for the management of recreation in a coordinated manner and to inform the public of the management approach. The values that attract large numbers of visitors are well-documented in the strategy, the threats and risks to those values are clearly articulated, and the management tools are identified. The major risks and threats and the avenues to reduce them are assessed; however, while cumulative impacts are recognised as an issue, their management is not specifically addressed. The strategy does not include any timeframes or targets to meet its objectives, making it difficult to assess achievement of outcomes.

Development and implementation of the recreation management strategy is identified in the Great Barrier Reef Marine Park Authority’s strategic plan, and resources are allocated in line with the objectives. A decrease in funding in real terms for the joint Field Management Program has focused recreation-related activities on compliance, interpretation and infrastructure maintenance.

Stakeholder engagement remains strong through advisory committees and the engagement activities of Great Barrier Reef Marine Park Authority staff, especially those in the regional offices. However, the diversity and informality inherent in the sector presents ongoing challenges to engagement.

### Research activities

Key message: There is strong collaboration in research management; improvements are slow.

This evaluation of the effectiveness of management in relation to research activities concentrates on the direct management of research activities in the Region. The wider questions of the availability and application of knowledge gained from scientific research are separately considered under the other management topics.

There are robust governance arrangements in place to manage research on the Reef and research activities are generally considered to be environmentally sustainable.

The Great Barrier Reef Marine Park Authority and relevant Queensland agencies jointly manage research activities within the Region, including extractive and observational research. Permits for specific research projects and accreditation of partner research institutions are the principal means of managing potential impacts. There is stakeholder and local community engagement concerning proposed activities, as necessary, and research proposals with the potential to affect Indigenous values are referred to the relevant Indigenous liaison staff. There is limited compliance auditing of research permits.

Direct risks are recognised but potential cumulative impacts are unclear and warrant more focused attention. Specific management arrangements are in place to assist with the effective management of research in scientific research zones — where research is concentrated and cumulative impacts are most likely.

The assessment in the Outlook Report 2009 concluded that management of research in the Reef was moving towards desired outcomes. The foreshadowed database to manage permitted use information remains under development and it is not yet possible to use it for analyses. In addition, there is limited capacity to contribute to the formulation and review of regulations, plans and policies. For example, the policy on managing scientific research has not been reviewed since its introduction in 2004 and the sampling limits for limited impact research in the Great Barrier Reef Marine Park Regulations have not been reviewed since their introduction in the same year. As a result, management effectiveness grades for planning, inputs and processes have declined from effective to mostly effective.

There is increasing emphasis on managing research partnerships and collaborations that are delivering benefits to Great Barrier Reef management. The Great Barrier Reef Marine Park Authority’s *Scientific information needs for the management of the Great Barrier Reef Marine Park 2009–2014*10 identifies key information needed to better inform management of the area.

The Great Barrier Reef Marine Park Authority has very successful and effective relationships with the research community regarding management of research activities, demonstrated by the accreditation process and strong partnerships with research institutions.

### Shipping

Key message: Shipping is generally well regulated and well managed; future risks are being addressed.

In this assessment, the topic of ‘shipping’ encompasses the movement and operation of ships, including ships travelling to, from and between ports in the Region, and those transiting through the Region. It also includes ship loading and unloading, ship anchoring and the activities of ships while at anchor (for example discharge of ballast water or effluent).

Shipping within the Region is generally well regulated and well managed. In comparison with other, often busier, shipping areas globally, there is an extensive suite of control, risk reduction and risk response measures applying to shipping in the Region. Although shipping incidents, such as loss of propulsion and navigation error, will inevitably occur, both the incidence and the potential consequences are attenuated by improvements in technology, ship design, management arrangements and safety requirements. Examples include protected fuel tanks, electronic aids to navigation, the Great Barrier Reef and Torres Strait Vessel Traffic Service (REEFVTS), port state control inspections and ship vetting. Combined, these measures reduce the risk of shipping incidents, despite increase in shipping activity.

The draft North-East Shipping Management Plan11 jointly developed by a number of Australian and Queensland government agencies is an example of control and emergency response arrangements anticipating and pre-empting changes in shipping activity levels and risk profiles — a critical aspect of shipping management.

There are management arrangements in place to address chronic, low-level effects, although some are not comprehensively considered. Examples include the cumulative effects of leaching or loss of antifouling paints, wake and turbulence effects, and possibly altered light and underwater noise regimes. Impacts of shipping on aesthetic values, especially in remote areas, are an emerging issue.

The agencies responsible for managing shipping in the Region are generally well resourced to undertake the required tasks. There are well-coordinated initial response and clean-up arrangements in the case of an incident, as demonstrated in the response to the grounding of the *Shen Neng I* on Douglas Shoal in 2010. However, these arrangements need to be regularly reviewed and resources allocated as necessary in relation to changing risks. Aspects of shipping-related management considered to be under-resourced include restoration and rehabilitation of damaged areas following groundings and control, surveillance and monitoring for introduced species.

While not a primary managing agency for shipping, the Great Barrier Reef Marine Park Authority is a critical partner in shipping management arrangements in the Region with a focus on ensuring shipping operations are sustainable and consistent with management objectives. However, its objectives and implementation plans with regard to shipping have not been clearly articulated — if clearly documented this would help inform risk-based management and the optimal allocation of resources.

[Photograph of a ReefVTS operator sitting in front of a bank of computer screens. Caption: The Great Barrier Reef and Torres Strait Vessel Traffic Service facility in Townsville.]

### Traditional use of marine resources

Key message: There is strong cooperative management of traditional use of marine resources; outcomes have improved with improved planning and inputs.

Traditional use of marine resources in the Region is primarily managed through Traditional Use of Marine Resources Agreements (TUMRAs) — formal agreements of Traditional Owner groups that are jointly accredited by the Australian and Queensland governments. These agreements promote sustainable use of threatened species such as dugongs and green turtles, as well as other species and habitats. Aspiration statements, clear objectives and implementation plans are part of each TUMRA.

As at April 2014, there were seven TUMRAs and one Indigenous Land Use Agreement which, combined, cover about 13 per cent of the Great Barrier Reef, engaging 14 Traditional Owner groups. One TUMRA has lapsed since the Outlook Report 2009.

Values relevant to traditional use of marine resources have been articulated in the draft *Great Barrier Reef Region Strategic Assessment Report*12 and the *Biodiversity Conservation Strategy 2013*13and knowledge of the condition and trend of culturally important species such as dugongs and marine turtles has improved with vulnerability assessments14. Information on direct, indirect and cumulative impacts associated with traditional use is not widely available and therefore not well understood nor considered in management of the Region. However, any impacts attributable to traditional use of marine resources undertaken according to customs and traditions are considered to have only very minor effects.

The Australian Government Reef Programme Land and Sea Country Indigenous Partnership Program includes a program for the development and support of TUMRAs. It has engaged with over 80 per cent of the Region’s Traditional Owner groups and achieved its aims and objectives over the past five years.

The pace of negotiation and implementation of TUMRAs is driven largely by Traditional Owners and their local capacity. Although dedicated funding has been provided by the Australian Government, there remains limited capacity within managing agencies to deal simultaneously with development of multiple TUMRAs.

Ascertaining Traditional Owners who can speak for their country can be difficult. One of the benefits in developing TUMRAs is that the relationship between sea country and a Traditional Owner group is identified and documented as part of the process. The effectiveness of engagement of broader stakeholders and local communities is highly variable.

Many of the staff working in this area are Indigenous, however developing the expertise of all managing agency staff is critical. The knowledge base in agencies is improving through the development of information management systems. High levels of sensitivity about the collection, storage and accessibility of traditional knowledge continue. There is still limited capacity to gather relevant data, especially related to socioeconomic drivers and traditional knowledge where this has been lost from the community.

**Managing external factors**

### Climate change

Key message: There is sound Region-scale management for climate change; management focus has declined on a broader scale.

This assessment considers the topic of climate change in relation to proactive and adaptive management measures undertaken specifically to protect and manage the Great Barrier Reef. Any broader state, national and global initiatives to address climate change, including mitigation and adaptation activities, are not considered. Assessing the overall effectiveness of the Reef-specific activities is challenging, as the ultimate outcomes for the Region’s values depend heavily on the effectiveness of broader initiatives.

The Great Barrier Reef Marine Park Authority has the major role in facilitating awareness of the impacts from climate change and extreme weather in the Region and in building the resilience of its ecosystem. It has an advisory role to other Australian and Queensland government agencies, and makes a significant contribution to the development of international best practice around coral reef management under a changing climate.

A number of management initiatives contribute to offsetting the impacts of climate change by reducing risks from other stressors. The Great Barrier Reef Marine Park Authority provides adaptation resources to help minimise the vulnerability of coastal communities and Reef-dependent industries while also increasing their capacity to collaborate in building ecosystem resilience to climate change.

Through implementation of the *Great Barrier Reef Climate Change Action Plan 2007–2012*15, strategies that could help give the Great Barrier Reef the best chance of coping with a changing climate were identified and tested. The 2012 *Review of the Climate Change Action Plan 2007–2012*16 concluded that the work undertaken under the plan had placed the Great Barrier Reef Marine Park Authority at the leading edge of efforts to understand, test and implement adaptation options for the Great Barrier Reef. Based on the review outcomes, future actions of the Authority and its partners are set out in the *Climate Change Adaptation Strategy and Action Plan 2012–2017*17.

The managing agencies’ planning initiatives are focused on enhancing ecological, socio-economic and management systems to adapt to change in ecological and social variables. Within the Great Barrier Reef Marine Park Authority, there is specialist expertise to coordinate efforts and facilitate national, regional and international collaboration and climate change considerations have been incorporated into many areas. There is a risk that changes in staffing and funding arrangements in 2014 will dilute attention to climate change issues. The loss of staff and associated research and management resources within the Queensland Government contributed to a decline in the assessment of the effectiveness of inputs for this topic.

Vulnerability assessments continue to provide good contextual information and specific threats have been identified. While direct and indirect impacts are understood by managers, many knowledge gaps remain. Work continues on identifying gaps in biophysical information, and socio-economic implications are being addressed through the Social and Economic Long-term Monitoring Program. Climate change work has been the catalyst for improvements in understanding and consideration of consequential and cumulative impacts on the Region’s values. Efforts continue, including work with Traditional Owners, to apply available traditional knowledge to climate change considerations.

Community engagement relating to climate change continues through initiatives such as the Eye on the Reef program and the Reef Guardian program, and implementation of the climate change action plan contributes substantially to strengthened partnerships with tourism and fishing sectors.

The planned and systematic approach of the Great Barrier Reef Marine Park Authority in relation to climate change gives confidence it has been doing all that might be reasonably expected to reduce its effects in the Region. However, in spite of its good systems and processes, the long-term trend for the Region is still poor and the extent to which specific initiatives can effectively address particular problems will only become clear over time.

### Coastal development

Key message: It is too early to judge the effectiveness of changes to coastal development policy.

Key message: Understanding of connectivity between the Region and its adjacent coast has improved.

The topic of coastal development includes management of activities undertaken within the Great Barrier Reef catchment that affect the Region. Although part of this broad topic, the management of ports in and adjacent to the Region has been considered separately in Section 7.3.4. The management of land-based run-off is considered in Section 7.3.11.

Management of coastal development is mainly through the application of Queensland Government legislation and policy. Since 2009, there have been several significant changes to the planning and development framework under the Sustainable Planning Act.

The 2013 State Planning Policy18 defines the Queensland Government’s policies about matters of state interest in land use planning and development. It recognises biodiversity, coastal environment, cultural heritage, water quality and natural hazards as some of the state interests and sets out outcomes and requirements in relation to each. Guidelines support the policy by including model assessment codes for coastal development and further explanation on how the policy outcomes can be achieved at regional and local level. The new policy framework has not been in effect long enough to assess its effectiveness in supporting the management of coastal development to protect the Region.

While some coastal areas are protected through tenure such as protected areas, this does not provide confidence that the Region’s values are being protected. It is not clear how risks such as the loss of coastal wetlands and modification of floodplains are addressed or mitigated under the new state planning policy.

The provisions of the Environment Protection and Biodiversity Conservation Act and, in some cases, the Great Barrier Reef Marine Park Act, address the environmental impacts of some coastal works.

As a result of the Outlook Report 2009, the Great Barrier Reef Marine Park Authority developed a comprehensive report, *Informing the Outlook for the Great Barrier Reef Coastal Ecosystems*19. It provides an effective context for management, describing the functioning of the Reef’s coastal ecosystems, as well as their threats, pressures, risks and trends.

Vulnerability assessments for coastal ecosystems have been undertaken. There is a reasonable understanding of the direct and indirect impacts associated with the development of coastal ecosystems, though there has been little quantification of these impacts. Consequential and cumulative impacts require better understanding and monitoring.

Targets and performance measures for coastal ecosystems are included in the Great Barrier Reef Marine Park Authority’s biodiversity conservation strategy13, but they lack outcome targets, and cannot address coastal development due to jurisdictional responsibilities. The joint Australian and Queensland government *Reef Water Quality Protection Plan*20(Reef Plan), which focuses on agricultural land-based run-off, contains performance measures relating to coastal ecosystems.

Stakeholder engagement on coastal ecosystem management is increasing, including through Reef Plan activities, the Australian Government Reef Programme and the Reef Guardian partnerships of the Great Barrier Reef Marine Park Authority.

There is a lack of consistent goals and objectives to guide coastal development across all the agencies and sectors.

[Photograph of two men in a banana plantation. Caption: Improved land management practices are reducing pollutant loads into the Region.]

### Land-based run-off

Key message: Programs addressing land-based run-off have better focus, clearer targets, coordinated monitoring and improved outputs.

Key message: Poor outcomes in the Region for land-based run-off are largely due to the issue’s scale and lags within the system.

The Queensland Government has overall legislative responsibility for the management of land-based run-off in the Great Barrier Reef catchment. Healthy Water Management Plans are a legislative tool that implements water quality actions. There are additional major programs, coordinated through Reef Plan, aimed at improving the quality of land-based run-off through improved land management practices, as well as supporting research and monitoring programs. These on-ground activities, supported by education, community awareness, stewardship and best practice activities are managed through partnerships between the Queensland Government, the Great Barrier Reef Marine Park Authority, the Australian Government Department of the Environment, regional natural resource management bodies, landholders and industry groups.

Revision and updating of Reef Plan in 2009 and 2013 and complementary Australian and Queensland government initiatives have addressed many of the shortfalls identified in the Outlook Report 2009, such as slow progress in achieving outcomes and a lack of monitoring. Regular reviews of Reef Plan have provided better focus and direction for managers, including clear targets for water quality and land management improvement. The plan is focused on outcomes and takes into account new policy documents and regulatory frameworks. Measurable targets, improved accountability, and coordinated monitoring, evaluation and reporting underpin it.

Development by the Great Barrier Reef Marine Park Authority of water quality guidelines and a *Coastal Ecosystems Assessment Framework* set limits for water-borne pollutants entering the Marine Park and provide a framework for assessing ecosystem services within basins. The Reef Guardian program has also been expanded to include farmers, graziers and fishers.

The values relevant to water quality are well understood by managers. Key variables, such as sediment, nutrient and pesticide loads, are comprehensively measured. While many of the direct and indirect impacts are well known, knowledge is not as comprehensive concerning consequential and cumulative impacts, although it has improved through the *2013 Scientific Consensus Statement*21.

In terms of assessing performance, a Reef Plan monitoring, evaluation and reporting strategy has been developed and annual Reef Plan report cards have been published. In addition, all Australian Government grants require regular reporting and evaluation.

While the Australian and Queensland governments have allocated significant resources to understanding the biophysical aspects of water quality, information is still limited with respect to the socioeconomic impact of loss of ecosystem services from poor water quality. The Social and Economic Long-term Monitoring Program managed by CSIRO and commenced in 2011 should improve managers’ understanding of people’s values and perceptions.

The impacts of land-based run-off are considered one of the greatest threats to the Great Barrier Reef. Average pollutant loads in land-based run-off are estimated to have declined in the past two years. This has been attributed to improved land management practices by landholders. The work being undertaken by the Australian and Queensland governments, in addition to regional natural resource management bodies, industry and stakeholders implementing Reef Plan, water quality improvement plans and other programs is to be commended. The monitoring programs and improved knowledge about the impacts of land-based run-off are also world class. The assessments of processes and outputs for this management topic have improved considerably since 2009. The lagging response in desired outcomes is largely a result of the scale of the problem and the time needed to effect change in the system.

**Managing to protect the Region’s values**

### Biodiversity values

Key message: There is an improved focus on biodiversity outcomes, including an overarching strategy.

Protection of the biodiversity of the Great Barrier Reef is the primary objective of much of the management action undertaken in the Region and its catchment. A number of Australian and Queensland government agencies have relevant statutory responsibilities, including the Great Barrier Reef Marine Park Authority, the Queensland Parks and Wildlife Service, the Queensland Department of Environment and Heritage Protection, the Australian Government Department of the Environment and the Australian Quarantine Inspection Service. A potentially complex and confusing management regime has been simplified through intergovernmental coordination, for example, complementary zoning plans and joint marine parks permits.

Threat abatement plans, recovery plans and specific on-the-water actions are in place to address individual biodiversity issues. With regard to threatened species, these have had some effect in stabilising populations, but there are few examples of population recovery. More generally, assessments show more species are continuing to decline than have stabilised or are increasing, although status is uncertain for many groups.

On a Reef-wide scale, the *Great Barrier Reef Marine Park Zoning Plan 2003*, which came into effect in 2004 and is matched in the adjacent Great Barrier Reef Coast Marine Park, is the most significant action taken to enhance biodiversity protection. It has provided a robust framework and is already demonstrating positive results. However, the major threats to biodiversity, such as climate change, coastal development and land-based run-off, are generally outside the scope of this plan and other regional-scale biodiversity protection measures. There is a need to review cross-jurisdictional mechanisms in areas such as planning, coastal development and fisheries management to ensure they are being effectively applied to protecting and restoring ecosystem health.

|  |  |
| --- | --- |
| [START COLOURED BOX]  **Partnerships to address starfish outbreaks** In the period 2012 to 2015, the Australian Government has committed to investing more than $7 million in a targeted program for crown-of-thorns starfish removal. The program is managed by the Great Barrier Reef Marine Park Authority in partnership with the Association of Marine Park Tourism Operators. Following the identification of starfish hotspots through the joint Field Management Program, the Association of Marine Park Tourism Operators is responsible for starfish removal. Priority is given to sites of high value to Reef tourism and, where possible, conducting broader-scale control. The program also assists researchers, trains tourism staff in culling methods and collects data on reef health. Between August 2012 and December 2013, 8333 two-minute manta tows were completed along 1415 kilometres of reef, 2258 Reef Health and Impact Surveys were undertaken and over 190,000 crown-of-thorns starfish were culled (Figure 7.3).  In parallel, the Queensland Government has invested $1 million to control crown-of-thorns starfish through the Skilling Queensland program. Work placement participants assist in small-scale control of crown-of-thorns starfish on selected coral reefs.  [Photograph of a diver using a one-shot injection gun to control crown-of-thorns starfish. Caption: *Diver using a one-shot injection gun to cull crown-of-thorns starfish.]*  [END COLOURED BOX] | **Figure 7.3 Removal of crown-of-thorns starfish, offshore Cairns, August 2012 to January 2014**  Reefs where high numbers of starfish have been reported are targeted for repeat visits in the program. Effort is focused on one or more sites at each reef. The map shows the number of starfish removed from each reef. Source: Data provided by the Association of Marine Park Tourism Operators 2014 |

Planning for biodiversity management has been significantly improved since the 2009 assessment through preparation of the *Great Barrier Reef Biodiversity Conservation Strategy 2013*13, although targets in the plan tend to be focused on process and output rather than outcomes.

The processes of developing outlook reports and undertaking the strategic assessment for the Great Barrier Reef Region 12 have focused attention on the Region’s biodiversity values and threats to those values. The declines in coral cover are cause for considerable concern. To date, there is no explicit overarching strategy and action plan to address this decline. The extensive degradation in central and southern inshore areas highlights the importance of considering cumulative and consequential impacts. These are less well understood by managers, but work22,23 has begun to address this deficiency.

The information base for biodiversity management continues to improve through both scientific research and the compilation of information by managing agencies (for example the Great Barrier Reef Marine Park Authority’s vulnerability assessments and strategic assessment). Gaps in knowledge are well recognised. Considerable financial resources are allocated to improving understanding of biodiversity and the factors affecting it, including through institutions such as the Australian Institute of Marine Science, universities and the Great Barrier Reef Foundation. Relevant Traditional Owner knowledge is often not available or accessible to managers.

Resources within the Great Barrier Reef Marine Park Authority have been re-focused into relevant areas enabling development of products such as the biodiversity conservation strategy and vulnerability assessments. However, resources for implementation of actions from this work are yet to be identified. The capacity of the Field Management Program to address biodiversity management issues in marine and island environments is assessed as very limited and decreasing.

Key stakeholders in biodiversity protection have been identified and are generally well known to managers especially through the advisory committees of the Great Barrier Reef Marine Park Authority and other consultative mechanisms.

[Photograph of a Queensland Parks and Wildlife officer holding and examining a bird. Caption: Protection of biodiversity is a primary management objective. Copyright Chris Jones.]

### Heritage values

Key message: The Region’s heritage values are better defined and there is an increasing management focus.

In this assessment, the topic of 'heritage' encompasses Indigenous heritage values, historic heritage values, social and scientific heritage values (including aesthetic heritage values), world heritage and national heritage values, and Commonwealth heritage values as set out in Chapter 4. The effectiveness of measures to protect and manage natural heritage values is considered in the assessment of management to protect biodiversity values (Section 7.3.12).

The Great Barrier Reef Marine Park Authority has statutory responsibilities in relation to the protection of all heritage values in the Great Barrier Reef Marine Park, including consideration of potential impacts during the permit assessment process. The Australian Government Department of the Environment is the lead agency in relation to world, national and Commonwealth heritage matters overall. Historic shipwrecks are protected through specific legislation and entry controls.

Development of the draft *Great Barrier Reef Region Strategic Assessment Report*12 considerably strengthened understanding of the scope of heritage values associated with the Region.

The *Great Barrier Reef Marine Park Heritage Strategy*24, endorsed in 2005, identifies actions but does not indicate timing or priorities. The strategy is not fully implemented and has not been updated to effectively address major pressures and drivers. This is the substantive reason why the planning grading has declined since the Outlook Report 2009.

There is generally a reasonable understanding by managers of the Region’s historic heritage values and an audit of historic heritage on Commonwealth islands has improved specific knowledge. Little is known about the condition and trend of shipwrecks, World War II sites and heritage places. Consequential and cumulative impacts are not well understood.

Statutory heritage management plans for two lightstations are registered and development of another is underway. Policy documents relevant to historic heritage have not been updated or fully implemented. Resourcing of the management of historic heritage is generally poor. The frameworks for engagement with stakeholders, industry and the community are good, but implementation is limited due to staff resources.

Knowledge of Indigenous heritage values is improving; however, information on direct, indirect and cumulative impacts is not widely available and therefore not well understood or considered by managers.

The Australian Government Reef Programme Land and Sea Country Indigenous Partnerships Programme articulates a set of objectives and targets to ensure ‘*continued use, support and reinvigoration of traditional ecological knowledge to underpin biodiversity conservation’*. This program has met all its targets and has been extended to 2018. The Great Barrier Reef Marine Park Authority’s strategic plan includes specific objectives concerning working with Aboriginal and Torres Strait Islanders including in matters relevant to Indigenous heritage values.

While progress has been made in engaging with key Traditional Owner groups, further work is needed to develop a mutually agreed and culturally appropriate process for joint planning. An Indigenous cultural heritage strategy would enable a shared vision to be developed with Traditional Owner groups with actions and timeframes for implementation.

The protection, presentation and transmission of the outstanding universal value of the Great Barrier Reef World Heritage Area are integrated into most activities to protect and manage the Region. The attributes that make up the property’s outstanding universal value are articulated, and risks, threats and management progress are closely monitored and annually reported through State Party reports.

### Community benefits of the environment

Key message: Understanding of community benefits is improving; their consideration lacks a policy framework.

In this assessment, the topic of 'community benefits of the environment' encompasses cultural, social and economic benefits such as employment, income, understanding, appreciation, enjoyment, personal connection, health benefits and access to Reef resources.

The Great Barrier Reef Marine Park Authority, together with other Australian and Queensland government agencies, works to adopt an integrated approach to the management of the social, economic and environmental aspects of the Region.

Social values are considered in permit assessments, but this is limited by a lack of detailed understanding and knowledge. The consequential and cumulative impacts on community benefits as a result of activities within and adjacent to the Region are not well documented nor assessed thoroughly. Community benefit issues are often considered under programs and policies developed for other purposes.

Development of the draft *Great Barrier Reef Region Strategic Assessment Report*12 considerably strengthened understanding of community benefits derived from the Region, including their current condition and threats to them. Early results from the Social and Economic Long-term Monitoring Program have improved understanding. The importance of the Reef in Indigenous economies is not well understood and not incorporated fully into management.

Many of the factors influencing community benefits, such as population growth, economic growth and climate change, are global drivers and are difficult for a single management system to encompass. However, the *Recreation Management Strategy for the Great Barrier Reef Marine Park*9 made some progress towards recognising enjoyment and personal attachment to the Reef.

Objectives for community benefits are reflected in Great Barrier Reef Marine Park Authority activities such as the Reef Guardian program, Reef HQ Aquarium, and the recreation management strategy. The joint Field Management Program has a strong commitment to ensuring public access to the Reef and islands.

Stakeholder engagement, for example through the advisory committees of the Great Barrier Reef Marine Park Authority and during development of the Great Barrier Reef Region strategic assessment, contributes to managers’ understanding of community values and issues of concern. Volunteer programs, such as components of the Marine Monitoring and Eye on the Reef programs, provide avenues for community involvement in protecting the Great Barrier Reef.

There are no guidelines or policies for decision makers in relation to managing for community benefits. An overarching strategy would clarify objectives, roles and responsibilities in relation to community benefits. It would also provide an improved framework to assess management effectiveness with greater accuracy.

## Assessment of management approaches

The purpose of this section is to assess the three broad management approaches as described in Section 7.1.3 — environmental regulation, engagement, and knowledge, integration and innovation — across all management topics. The findings are based on the assessments carried out for each of the management topics.

### Environmental regulation

Key message: Environmental regulation is generally contemporary and appropriate; some needs updating and aligning.

Statutory instruments employed in protection and management of the Region’s ecosystem and heritage values are generally contemporary and appropriate. Commonwealth legislation has been reviewed to keep pace with emerging issues, and two key legislative instruments, the Environment Protection and Biodiversity Conservation Act and the Great Barrier Reef Marine Park Act, have been aligned. Relevant Queensland legislation is not necessarily consistent with that of the Commonwealth, often due to differences in objectives. Joint marine parks permits have been provided for some time, and governments are committed to a ‘one-stop shop’ approach with respect to approvals.

Revised coastal development arrangements through implementation of the new State Planning Policy are yet to be determined, as are arrangements for the devolution of environmental impact assessment processes.

Zoning plans have been very effective for managing activities such as fishing, resulting in improved biodiversity protection outcomes. However, other than setting out the requirement for a permit, they do not address activities such as tourism which are principally managed through plans of management and permits. While plans of management are a useful tool, they require updating, and there is a need for them to be developed in areas experiencing increasing impacts from use.

Compliance systems are very sophisticated, and are very effective for activities of highest risk to the Region’s values, such as illegal fishing and poaching. Due to funding issues, the joint Field Management Program must prioritise compliance activities, based on a detailed risk analysis, and is not able to comprehensively enforce legislation.

A number of policies and strategies have been considerably improved or developed since the 2009 assessment, for example in relation to climate change, recreation, biodiversity and land-based run-off. Some of these would benefit from targets focused on outcomes, with clear objectives, actions and milestones. An example of a highly effective strategy is the *Reef Water Quality Protection Plan*20

— a joint Australian and Queensland government program. Some policies require significant review, and plans for regular review and evaluation are generally lacking. There is a lack of policy guidance in areas such as Indigenous heritage values and community benefits.

### Engagement

Key message: Partnerships and stewardship arrangements are one of the strongest aspects of management.

The intergovernmental agreement between the Australian and Queensland governments articulating the joint management arrangements for the Great Barrier Reef is world-leading. It has been in place since 1979 and was updated in 2009 to ensure that contemporary issues and challenges were suitably addressed. The joint Field Management Program set up through the agreement works well and is also a model for the rest of world. This arrangement requires the two governments to jointly develop priorities for activities and allocate funding. The greatest concern with the partnership is a lack of resourcing to enable staff to undertake required management across all activities in the world heritage area. Further positive collaboration between agencies both within and across levels of government is through programs such as implementing Reef Plan.

Research collaboration between government agencies and research providers is positive and proactive.

There has been very positive progress in partnerships with Traditional Owners, especially through the Australian Government Reef Programme Land and Sea Country Indigenous Partnership Programme. The Great Barrier Reef Marine Park Authority is engaged with over 80 per cent of Traditional Owners that have connections to sea country in the Region and continues to work closely with them in relation to its management. Indigenous employment, especially through the Field Management Program and the Indigenous community compliance liaison officers, has been strongly supported. There continues to be poor transfer of traditional knowledge from Traditional Owners to managing agencies, and as a result it is not being taken into account in many management decisions or actions.

The development of partnerships and stewardship arrangements is one of the strongest aspects of management of the Region and knowledge of stakeholders is the highest ranked indicator overall. The Reef Guardian program of the Great Barrier Reef Marine Park Authority is an acknowledged example of a successful stewardship approach. More broadly, the success of Reef Plan depends on forming partnerships with regional natural resource management bodies and, through them, with land managers.

Partnerships and stewardship programs are also key elements of management with the tourism and fishing sectors, for example in planning for climate change, adoption of best practices and reef health monitoring.

The Great Barrier Reef Marine Park Authority’s engagement activities are underpinned by long-standing consultation arrangements with key sectors and regions, including through Local Marine Advisory Committees and Reef Advisory Committees.

[Photograph of a group of Traditional Owners and quad bikes. Caption: Lama Lama Traditional Owners taking part in a joint management patrol.]

### Knowledge, innovation and integration

Key message: An integrated framework will help address deficiencies in monitoring.

Research and monitoring The Outlook Report process and the comprehensive strategic assessment for the Great Barrier Reef World Heritage Area have accumulated and consolidated knowledge relevant to the Region and made it more widely available. In addition these processes have identified key knowledge gaps, for example through the scientific information needs process following the Outlook Report 200910, and have stimulated programs and projects to fill them.

Monitoring relevant to management has expanded, both in scope and scale. The long-term monitoring program managed by the Australian Institute of Marine Science continues to provide critical data on the Region’s ecosystem and demonstrates the value of maintaining consistent monitoring over an extended time period. The recently developed social and economic long-term monitoring program is beginning to address deficiencies in understanding of socioeconomic aspects.

The development of an integrated monitoring framework and program is a positive initiative that will help address deficiencies in monitoring, especially in relation to cumulative impacts and overall ecosystem health. The Eye on the Reef program consolidates monitoring and reporting by managers, Reef users and the community and already has a large set of data across a wide geographic area.

Reporting and evaluation The five-yearly Great Barrier Reef Outlook Report process provides the most comprehensive, regular basis for evaluation and reporting on management of the Great Barrier Reef. Its model and process, including the independent assessment of management effectiveness, has been widely acknowledged as ground-breaking. It has been adapted for Australian State of Environment reporting and elsewhere, including internationally. The five-yearly reports can be supported by in-depth assessments of particular issues, for example the 2012 report on the outlook for coastal ecosystems19.

Up to the end of 2013, implementation of Reef Plan had been evaluated in three annual report cards. The process and content of Reef Plan reporting in the latest report card released in 2013 is significantly improved by contributions from all partners in the program and enhanced depth and quality of monitoring information. All Australian Government-funded projects require structured monitoring and evaluation.

The draft reports of the comprehensive strategic assessment of the Great Barrier Reef World Heritage Area present a one-off, comprehensive evaluation of marine and coastal management in the Region.

[START COLOURED BOX]

**Keeping an Eye on the Reef**

Overall understanding of the Reef ecosystem, knowledge available for management and engagement with a variety of Reef stakeholders have all been improved through development of an integrated Eye on the Reef program. Managed by the Great Barrier Reef Marine Park Authority in collaboration with the Queensland Parks and Wildlife Service, the program is a network of monitoring programs that engages and benefits Australian and Queensland government managing agencies, researchers, fishers, tourism operators and community groups.

The program includes structured Reef Health and Impact Surveys, the Tourism Weekly Monitoring program, the Rapid Monitoring survey program and the Sightings Network. In combination, these programs provide everything from information on sightings and unusual events to an early warning system and on-the-spot impact assessments used to promptly inform responses to incidents such as coral bleaching and cyclones. Within a fortnight of severe tropical cyclone Yasi in 2011, 882 Reef Health and Impact Surveys had been completed, providing a comprehensive assessment of reef damage at over 76 reefs.16 The monitoring surveys undertaken through the Eye on the Reef program provide detailed information about a number of sites spread across the Region (Figure 7.4).

Figure . Eye on the Reef reporting locations and key contributors, 2008–2013

A range of different people and groups contribute data to the Eye on the Reef program. The map shows Eye on the Reef contributions are widely spread across the Region. Source: Great Barrier Reef Marine Park Authority 201325

[END COLOURED BOX]

[Photograph of a snorkeler with an Eye on the Reef datasheet in his hand watching a green turtle swim by. Caption: Contributions to the Eye on the Reef program are improving knowledge available for management.]

## Assessment summary — Existing protection and management

Section 54(3)(f) of the *Great Barrier Reef Marine Park Act 1975* requires *'… an assessment of the existing measures to protect and manage the ecosystem …'* within the Great Barrier Reef Region. Section 116A(2)(d) of the *Great Barrier Reef Marine Park Regulations 1983* requires ‘… *an assessment of the existing measures to protect and manage the heritage values…’* of the Great Barrier Reef Region.

The assessment was undertaken by four independent expert assessors based on six assessment criteria:

* understanding of context
* planning
* financial, staffing and information inputs
* management systems and processes
* delivery of outputs
* achievement of outcomes.

### Understanding of context

**Outlook Report 2009: Assessment summary**

*Understanding of values, threats, national and international influences and stakeholders is strong for all management issues assessed. This reflects a solid information and research base and a very mature understanding of the key values of the Great Barrier Reef in both a national and international context and the actual and potential threats to those values. Understanding of stakeholders is consistently strong across all issues (in fact, it shows the strongest performance across the entire range of assessment criteria).*

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment criterion** | **Summary** | **Grade 2009** | **Grade 2014 and trend since 2009** |
|
| **Understanding of context** | Context is assessed as the strongest management effectiveness element and trends are either stable or improving. Understanding of values, direct and indirect threats and stakeholders is generally strong. Understanding of cumulative and consequential impacts as well as condition and trend is improving and has been effectively documented through the Outlook Report and strategic assessment processes. In particular, tourism, defence activities, recreation, research activities and land-based run-off are well understood. This reflects a solid information and research base and a very mature understanding of the key values of the Region. | Very good | Very good, Improved |

|  |  |
| --- | --- |
| **Grading statements** | |
| **Very good** | Understanding of values, threats, regional/global influences and stakeholders is good for most management topics. |
| **Good** | Understanding is generally good but there is some variability across management topics or components. |
| **Poor** | Understanding of values, threats, regional and global influences and relevant stakeholders is only fair for most management topics. |
| **Very poor** | Understanding of values, threats, regional and global influences and relevant stakeholders is poor for most management topics. |
| **Trend since 2009** | |
| Improved, Stable, Deteriorated, No consistent trend | |

### Planning

**Outlook Report 2009: Assessment summary**

*Planning performance tends to be strongest where there are few organisations or levels of governance involved in the planning process. There are well developed planning systems in place for all issues except for coastal development where the fractured nature of the planning regime causes problems. Lack of consistency across jurisdictions is the weakest aspect of planning.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment criterion** | **Summary** | **Grade 2009** | **Grade 2014 and trend since 2009** |
|
| **Planning** | Significant efforts have been made in planning for a number of topics such as biodiversity protection and recreation. Planning effectiveness has declined for climate change measures specific to the Region, principally as a result of changing policy and a lack of clarity about future directions. It has also declined for commercial marine tourism and research activities, largely because plans and policies have not been completed or updated. For coastal development, the fractured nature of the planning regime is problematic and recent changes have raised concerns. Planning effectiveness has improved for the management of land-based run-off and traditional use where the investment of resources is paying dividends. Lack of consistency across jurisdictions is the weakest aspect of planning. | Good | Good, Stable |

|  |  |
| --- | --- |
| **Grading statements** | |
| **Very good** | Effective planning systems that engage stakeholders are in place for all or most significant issues. There is adequate policy to manage issues that is consistent across jurisdictions. |
| **Good** | Effective planning systems that engage stakeholders are in place for many significant issues. Policy and consistency across jurisdictions is generally satisfactory. |
| **Poor** | Planning systems that engage stakeholders are deficient for a number of significant issues. Policy and consistency across jurisdictions is a problem for some issues. |
| **Very poor** | Planning systems that engage stakeholders are deficient for many significant issues. Policy and consistency across jurisdictions is a problem for some issues. |
| **Trend since 2009** | |
| Improved, Stable, Deteriorated, No consistent trend | |

### Financial, staffing and information inputs

**Outlook Report 2009: Assessment summary**

*Adequacy of inputs is quite variable across the management issues, being particularly strong for defence, climate change and research and weak for coastal development. Adequacy of socio-economic and access to relevant Traditional Owner knowledge is a problem for most issues and one of the worst performing criteria across the whole assessment.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment criterion** | **Summary** | **Grade 2009** | **Grade 2014 and trend since 2009** |
|
| **Financial, staffing and information inputs** | Adequacy of inputs is variable across management topics, being least effective for community benefits, coastal development, and non-Indigenous heritage management. Poor understanding of heritage values is a problem for most issues and is among the worst performing criteria across the whole assessment. Availability of socioeconomic knowledge has improved. Substantial resources have been devoted to the topics of land-based run-off and traditional use. Secure resourcing is a significant ongoing problem for many management topics. In many cases the lack of adequate resources to advance planning and management is constraining the effectiveness of other aspects of management. | Poor | Poor, Stable |

|  |  |
| --- | --- |
| **Grading statements** | |
| **Very good** | Financial and staffing resources are largely adequate to meet management needs. Biophysical, socioeconomic and Traditional Owner knowledge is available to inform management decision making. |
| **Good** | Financial and staffing resources are mostly adequate to meet management needs. Biophysical, socioeconomic and Traditional Owner knowledge is mostly available to inform management decision making although there may be deficiencies in some areas. |
| **Poor** | Financial and staffing resources are unable to meet management needs in some important thematic areas. Biophysical, socioeconomic and Traditional Owner knowledge is variably available to inform management decision making and there are significant deficiencies in some areas. |
| **Very poor** | Financial and staffing resources are unable to meet management needs in many thematic areas. Biophysical, socioeconomic and Traditional Owner knowledge to support decision making is frequently deficient in some areas. |
| **Trend since 2009** | |
| Improved, Stable, Deteriorated, No consistent trend | |

### Management systems and processes

**Outlook Report 2009: Assessment summary**

*Management processes are particularly strong for defence, tourism and research and weakest for coastal development and water quality. Performance monitoring, addressing cumulative impacts and application of socioeconomic and Traditional Owner knowledge are a problem for most issues. The extent to which cumulative impacts are being addressed is the weakest indicator across the entire assessment. Stakeholder engagement and application of biophysical information are amongst the strongest aspects of management across all issues.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment criterion** | **Summary** | **Grade 2009** | **Grade 2014 and trend since 2009** |
|
| **Management systems and processes** | Management processes are particularly strong for defence activities, shipping and management of land-based run-off. They are weakest for coastal development, community benefits and Indigenous heritage values. Addressing consequential and cumulative impacts, application of socioeconomic and Indigenous knowledge, and setting of targets to benchmark performance are problematic for most issues. Consideration of cumulative and consequential impacts has improved substantially. Stakeholder engagement and application of biophysical information are the strongest aspects of management across all issues. | Good | Good, Deteriorated |

|  |  |
| --- | --- |
| **Grading statements** | |
| **Very good** | The majority of management processes are appropriate and effective in addressing the management of the various management topics. |
| **Good** | The majority of management processes are appropriate and effective in addressing management although there are deficiencies in relation to a small number of management topics or processes. |
| **Poor** | A minority of critical management processes show significant deficiencies across most management topics. |
| **Very poor** | A majority of management processes show significant deficiencies across most management topics. |
| **Trend since 2009** | |
| Improved, Stable, Deteriorated, No consistent trend | |

### Delivery of outputs

**Outlook Report 2009: Assessment summary**

*Delivery of desired outputs is weakest for coastal development and water quality and strongest in relation to defence, tourism and research. The knowledge base of the management agencies and community has consistently improved. While the majority of management programs are progressing satisfactorily (with the exception of coastal management and water quality), timeframes frequently slip and it is not yet clear that the programs are achieving all their desired objectives.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment criterion** | **Summary** | **Grade 2009** | **Grade 2014 and trend since 2009** |
|
| **Delivery of outputs** | Delivery of desired outputs was rated as effective or very effective for all topics except coastal development. It is strongest for commercial marine tourism, defence activities, research activities and land-based run-off, where there has been a noticeable improvement. The knowledge base of managing agencies and the community has consistently improved. While the majority of management programs are progressing satisfactorily, timeframes frequently slip and it is not yet clear that the programs are achieving all their desired objectives. | Good | Good, Stable |

|  |  |
| --- | --- |
| **Grading statements** | |
| **Very good** | Management programs are mostly progressing in accordance with planned programs and are achieving their desired objectives. Managing agency and community knowledge base is improving. |
| **Good** | Management programs are mostly progressing in accordance with planned programs and are achieving their desired objectives but there are problems in some management topics. Managing agency and community knowledge base is generally improving. |
| **Poor** | Many management programs are not progressing in accordance with planned programs (significant delays or incomplete actions) or actions undertaken are not achieving objectives. The knowledge base is only growing slowly. |
| **Very poor** | Most management programs are not progressing in accordance with planned programs (significant delays or incomplete actions) or actions undertaken are not achieving objectives. The knowledge base is only growing slowly. |
| **Trend since 2009** | |
| Improved, Stable, Deteriorated, No consistent trend | |

### Achievement of outcomes

**Outlook Report 2009: Assessment summary**

*Achievement of desired outcomes (values protected, threats reduced, long-term environmental and economic sustainability) is very variable across issues. Objectives in relation to community understanding of issues and development of effective partnerships are being achieved. Overall, greatest concern in relation to achievement of desired outcomes relates to climate change.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment criterion** | **Summary** | **Grade 2009** | **Grade 2014 and trend since 2009** |
|
| **Achievement of outcomes** | Achievement of desired outcomes is highly variable across the management topics. Objectives in relation to community understanding of issues and development of effective partnerships are being achieved. Performance in outcomes is especially strong for research activities, shipping and defence activities. Overall, the weakest performance was for climate change, then coastal development, land-based run-off and fishing. For land-based run-off, the continued poor outcomes for the Region are largely due to scale of the problem and lags within the natural system. | Poor | Poor, Deteriorated |

|  |  |
| --- | --- |
| **Grading statements** | |
| **Very good** | Desired outcomes are mostly being achieved, values protected and threats abated for most thematic areas. Use of the Great Barrier Reef is largely environmentally and economically sustainable with good community engagement, understanding and enjoyment. |
| **Good** | Desired outcomes are being achieved in many management topics, values protected and threats abated for many management topics. Use of the Great Barrier Reef is largely environmentally and economically sustainable with good community engagement, understanding and enjoyment. |
| **Poor** | Desired outcomes, protection of values and abatement of threats are not being achieved at desirable levels in some critical management topics with likely eventual flow-on effects across the Great Barrier Reef. Critical aspects of the use of the Great Barrier Reef are not environmentally or economically sustainable. |
| **Very poor** | Desired outcomes, protection of values and abatement of threats are not being achieved at desirable levels in most management topics including critical areas with likely eventual flow-on effects across the Great Barrier Reef. Critical aspects of the use of the Great Barrier Reef are not environmentally or economically sustainable. |
| **Trend since 2009** | |
| Improved, Stable, Deteriorated, No consistent trend | |

### Overall summary of existing protection and management

The effectiveness of existing measures to protect and manage the Region’s ecosystem and its heritage values was independently assessed for 14 broad management topics.2 The activities of all relevant Australian and Queensland government agencies and other contributing partners were considered. The outcomes are summarised in Figure 7.5.

Managing agencies are striving to manage effectively in all areas. Since the independent assessment for the Outlook Report 2009, there have been considerable improvements in parts of the management cycle for a number of management topics, in part as a result of the outcomes of that assessment and the overall findings of the report. For example, outcomes for the traditional use of marine resources have improved following better planning, inputs and processes, and program outputs for land-based run-off have improved following improvements in planning (for example revisions to Reef Plan), inputs and processes. Undertaking the comprehensive strategic assessment of the Great Barrier Reef World Heritage Area has further consolidated understanding about the Region, its values and threats, and focused management attention.

The difficulties in achieving positive outcomes on the ground, given the complexity of many issues, the spatial and temporal scales of the threats to the Region’s values and the diminishing resource base to implement actions, are recognised. Progress in reducing the threats is slow and is reflected in the continuing poor outcomes for some management topics. Desired outcomes are difficult to achieve for some of the most significant (and complex) management issues threatening the Region.

Not surprisingly, performance across the six elements tends to be better for the less complex management topics (Figure 7.5). Two issues do not follow this general pattern. Land-based run-off is one of the more complex topics and yet is generally effectively managed (although outcomes remain only partially effective). This result demonstrates the impact that significant commitment of resources, extensive planning responses, and extensive research to inform management can have on the management of an issue. The lagging response in desired outcomes for the Region is largely a result of the scale of the problem and the time needed to effect change in the system. In contrast, community benefits of the environment is a less complex topic that shows only partially effective management in inputs and processes. This is likely a reflection of its relatively recent recognition as an area of management.

While commercial marine tourism has previously received significant management attention and is effectively managed overall, there is a trend that efforts within management agencies are being redirected to tackle higher risks, resulting in less effective tourism management (for example, the overdue need to review the plans of management).

In the case of climate change and coastal development, there are particular management challenges in consistency across jurisdictions which affect the effectiveness of planning. For fishing, there are particular challenges in the areas of monitoring and compliance, especially as they relate to addressing potential cumulative impacts. For heritage values other than natural heritage values, the management challenges are particularly in areas of understanding the values and better incorporating their consideration in decision making, although substantial progress has been made.

[Photograph of a group of people loading bags of rubbish onto the back of a boat from the beach. Caption: Volunteers collected 335 kilograms of rubbish from Neck Bay in the Whitsundays during this Eco Barge Clean Seas marine debris clean up]

Figure . Overall assessment of the effectiveness of existing measures to protect and manage the Region’s values

The assessment of management effectiveness for the topic of climate change is only in relation to management measures undertaken specifically to protect and manage the Great Barrier Reef. Trend is not presented where topics were not assessed in 2009: ports and shipping were assessed jointly in 2009 but treated separately here, community benefits were not assessed in 2009. The degree of complexity is based on the analysis provided in Table 7.2.

|  | **Management topic** | **Summary** | **Effectiveness of existing measures** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Context** | **Planning** | **Inputs** | **Processes** | **Outputs** | **Outcomes** |
| **⭢ ⭢ ⭢ Increasing complexity ⭢ ⭢ ⭢** | **Climate change** | There is sound Region-scale management for climate change; management focus has declined on a broader scale. | ⬇ | ⬇ | **↘** | ⬇ | **⇔** | ⬇ |
| **Coastal development** | It is too early to judge the effectiveness of changes to coastal development policy. Understanding of connectivity between the Region and its adjacent coast has improved. | **↗** | **↗** | **⇔** | **⇔** | **⇔** | **⇔** |
| **Land-based run-off** | Programs addressing land-based run-off have better focus, clearer targets, coordinated monitoring and improved outputs. Continued poor outcomes are largely due to the issue’s scale and lags within the system. | **⇔** | ⬆ | **↗** | ⬆ | ⬆ | **⇔** |
| **Ports** | Individual ports are generally well managed; there has been a lack of coordinated planning and guidance. |  |  |  |  |  |  |
| **Fishing** | Understanding of fishing and its impacts has improved; however outcomes remain poor. | **⇔** | **⇔** | **⇔** | **⇔** | **⇔** | **⇔** |
| **Heritage values** | The Region’s heritage values are better defined and there is an increasing management focus. | ⬇ | ⬇ | **⇔** | **↘** | **↘** | **↘** |
| **Commercial marine tourism** | Sound governance and industry partnerships are in place to address tourism issues. Effectiveness of tourism management has declined as emphasis has shifted to emerging issues. | **⇔** | ⬇ | **↘** | ⬇ | **⇔** | **⇔** |
| **Recreation (not including fishing)** | An overarching recreation management strategy has improved understanding and coordination. | **⇔** | **⇔** | **↘** | **↘** | **⇔** | **⇔** |
| **Traditional use of marine resources** | There is strong cooperative management of traditional use of marine resource; outcomes have improved with increased planning and inputs. | **↗** | ⬆ | ⬆ | **↗** | **⇔** | ⬆ |
| **Biodiversity values** | There is an improved focus on biodiversity outcomes, including an overarching strategy. | **⇔** | **⇔** | **⇔** | **⇔** | **⇔** | **↘** |
| **Community benefits of the environment** | Understanding of community benefits is improving; their consideration lacks a policy framework. |  |  |  |  |  |  |
| **Shipping** | Shipping is generally well regulated and well managed; future risks are being addressed. |  |  |  |  |  |  |
| **Research activities** | There is strong collaboration in management of research; improvements are slow. | **↗** | ⬇ | ⬇ | ⬇ | **⇔** | **⇔** |
| **Defence activities** | Defence activities continue to be managed very effectively with close cooperation between agencies. | **⇔** | **↘** | ⬇ | **⇔** | **⇔** | **⇔** |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Very good | The grading statements for each of the Assessment Criteria are provided in Section 7.5.1 to 7.5.6. | | Good | The grading statements for each of the Assessment Criteria are provided in Section 7.5.1 to 7.5.6. | | Poor | The grading statements for each of the Assessment Criteria are provided in Section 7.5.1 to 7.5.6. | | Very poor | The grading statements for each of the Assessment Criteria are provided in Section 7.5.1 to 7.5.6. | | ⬆ Improved, grade changed  **↗** Improved within same grade  **⇔** Stable  **↙** Deteriorated within same grade  ⬇ Deteriorated, grade changed  **No symbol:** The topics of **ports**, **shipping** and **community benefits** were not separately assessed in 2009; no trend provided. |

## References

1. Great Barrier Reef Marine Park Authority 2009, *Great Barrier Reef outlook report 2009*, GBRMPA, Townsville.

2. Hockings, M., Leverington, A., Trinder, C. and Polglaze, J. 2014, *Independent assessment of management effectiveness for the Great Barrier Reef Outlook Report 2014*, Great Barrier Reef Marine Park Authority, Townsville.

3. Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. 2006, *Evaluating effectiveness: a framework for assessing management effectiveness of protected areas,* 2nd edn, IUCN, Gland, Switzerland.

4. Parks Australia and Tourism Australia 2012, *Australia's national landscapes program. 2012 Outcomes report*, Department of the Environment, Canberra.

5. Department of Defence and Great Barrier Reef Marine Park Authority 2008, *Management agreement between Department of Defence and the Great Barrier Reef Marine Park Authority on implementation of the strategic environmental assessment of defence activities in the Great Barrier Reef Marine Park*, GBRMPA, Townsville.

6. Great Barrier Reef Marine Park Authority 2011, *A vulnerability assessment for the Great Barrier Reef: Threadfin salmon*, GBRMPA, Townsville.

7. Great Barrier Reef Marine Park Authority 2011, *A vulnerability assessment for the Great Barrier Reef: Grey mackerel*, GBRMPA, Townsville.

8. Lawrence, K., van Putten, I. and Fernbach, M. 2010, *Profiles of recreational use of the Great Barrier Reef Marine Park*, Great Barrier Reef Marine Park Authority, Townsville.

9. Great Barrier Reef Marine Park Authority 2012, *Recreation management strategy for the Great Barrier Reef Marine Park*, GBRMPA, Townsville.

10. Great Barrier Reef Marine Park Authority 2009, *Scientific information needs for the management of the Great Barrier Reef Marine Park 2009-2014,* GBRMPA, Townsville.

11. North-East Shipping Management Group 2013, *North-East Shipping Management Plan (Draft for consultation)*, Australian Maritime Safety Authority, Canberra.

12. Great Barrier Reef Marine Park Authority 2013, *Great Barrier Reef Region strategic assessment: Strategic Assessment Report. Draft for public comment*, GBRMPA, Townsville.

13. Great Barrier Reef Marine Park Authority 2013, *Great Barrier Reef biodiversity conservation strategy 2013*, GBRMPA, Townsville.

14. Great Barrier Reef Marine Park Authority 2014, A vulnerability assessment for the Great Barrier Reef: Marine turtles. Unpublished draft.

15. Great Barrier Reef Marine Park Authority 2007, *Great Barrier Reef climate change action plan (2007-2012)*, Great Barrier Reef Marine Park Authority, Townsville.

16. Great Barrier Reef Marine Park Authority 2012, *Climate change adaptation: Outcomes from the Great Barrier Reef climate change action plan 2007-2012*, GBRMPA, Townsville.

17. Great Barrier Reef Marine Park Authority 2012, *Great Barrier Reef climate change adaptation strategy and action plan 2012 to 2017*, GBRMPA, Townsville.

18. Department of State Development, Infrastructure and Planning 2013, *State planning policy*, Queensland Government, Brisbane.

19. Great Barrier Reef Marine Park Authority 2012, *Informing the outlook for Great Barrier Reef coastal ecosystems*, GBRMPA, Townsville.

20. Department of the Premier and Cabinet 2013, *Reef water quality protection plan 2013*, Reef Water Quality Protection Plan Secretariat, Brisbane.

21. Department of the Premier and Cabinet 2013, *2013 Scientific Consensus Statement - Land use impacts on Great Barrier Reef water quality and ecosystem condition*, DPC, Brisbane.

22. Hedge, P., Molloy, F., Sweatman, H., Hayes, K., Dambacher, J., Chandler, J., Gooch, M., Chin, A., Bax, N. and Walshe, T. 2013, *An integrated monitoring framework for the Great Barrier Reef World Heritage Area*, Great Barrier Reef Marine Park Authority, Townsville.

23. Anthony, K.R.N., Beeden, R., Dambacher, J.M. and Walshe, T. 2013, *Resilience-based framework for environmental decision making in the Great Barrier Reef World Heritage Area*, Great Barrier Reef Marine Park Authority, Townsville.

24. Great Barrier Reef Marine Park Authority 2005, *Great Barrier Reef Marine Park heritage strategy*, GBRMPA, Townsville.

25. Great Barrier Reef Marine Park Authority (Unpublished), *Eye on the Reef*, [database]. Accessed 30/01/2014.