



Australian Government

Great Barrier Reef
Marine Park Authority

Independent assessment of
management effectiveness for the

GREAT BARRIER REEF

Outlook Report 2014

Report prepared by:

Marc Hockings, Andrea Leverington, Colin Trinder and John Polglaze
for the

Great Barrier Reef Marine Park Authority



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Executive summary

Framework for the report

Management effectiveness evaluation is defined as the assessment of how well protected areas are being managed – primarily the extent to which they are protecting values and achieving goals and objectives. The report has used a management effectiveness evaluation framework that has been widely applied around the world. This framework focuses on six management elements (context, planning, inputs, processes, outputs and outcomes) and the links between them, to provide a comprehensive picture of management effectiveness for the Great Barrier Reef Region (the Region).

This assessment examined 14 priority management topics. The management topics range in scale from localised issues that affect only a small proportion of the total area (for example defence activities) to others which have implications across all or most of the Region (for example climate change, recreation, coastal development). No attempt has been made to weight these components, and performance assessments need to be interpreted in the context of these scale differences.

Overall outcomes

The managers of the Region are striving to manage effectively in all areas, and there has been considerable improvement in a number of areas since the *Great Barrier Reef Outlook Report 2009*.¹ The recent development of the *Great Barrier Reef Biodiversity Conservation Strategy 2013*,² a range of species vulnerability assessments, the revised joint Australian and Queensland *Reef Water Quality Protection Plan 2013*³ (Reef Plan), *Coastal Ecosystem Assessment Framework 2012*,⁴ the *Climate Adaptation Strategy and Action Plan 2012-2017*⁵ and *Informing the Outlook for the Great Barrier Reef Coastal Ecosystems*,⁶ in addition to the review of the zoning plan through the Representative Areas Program, and the joint Field Management Program are examples of the world class management of the Region. The preparation of the *Great Barrier Reef Strategic Assessment draft Report 2013*⁷ and the *Great Barrier Reef Coastal Zone Strategic Assessment draft Report 2013*⁸ prepared under the *Environmental Conservation and Biodiversity Act (2009)* also provide a significant improvement in knowledge across a range of topics to assist management. The overall assessment results are summarised in Table 1.

The difficulties in achieving positive outcomes on the ground, given the spatial and temporal scales of the threats facing matters the Region and the diminishing resource base to implement actions, are recognised. However, greater traction in threat reduction is needed for an improvement in outcomes. Improved threat reduction is, in turn, dependent on the adoption of significant changes to current policies regarding coastal development, resource use, control of other activities and sufficient resourcing to implement threat reduction programs in the field.

Management effectiveness is strongest on issues limited in scale or intensity and presenting only minor or moderate complexity, such as defence and research activities. Tourism operates across much of the Region and is moderately complex. It has received significant management attention and is effectively managed although there is some evidence that effectiveness in management in these three areas (tourism, defence and research) is declining slightly as effort and attention has shifted to other priority areas.

Management effectiveness challenges are evident for those broad scale issues, which are complex socially, biophysically and jurisdictionally. These include ports, shipping, climate change, coastal development, fishing, and heritage.

Trends

In general, most indicators were either improving or stable. The exceptions were indicators around financial inputs and cross-jurisdictional cooperation that were regularly scored as declining.

Table 1 Summary of assessment results

	Topic	Context	Planning	Inputs	Processes	Outputs	Outcomes
Managing direct use of the Region	Commercial marine tourism	↕	↓	↘	↓	↕	↕
	Defence activities	↕	↘	↓	↕	↕	↕
	Fishing	↔	↔	↔	↕	↕	↕
	Ports	—	—	—	—	—	—
	Recreation	↔	↔	↘	↘	↕	↕
	Research activities	↗	↓	↓	↓	↕	↕
	Shipping	—	—	—	—	—	—
	Traditional use of marine resources	↗	↑	↑	↗	↕	↑
Managing external factors influencing the Region	Climate change	↓	↓	↘	↓	↕	↓
	Coastal development	↗	↗	↔	↔	↔	↔
	Land-based run-off	↔	↑	↗	↑	↑	↔
Managing to protect the Region's values	Biodiversity values	↔	↔	↔	↔	↔	↘
	Heritage values	↓	↓	↔	↘	↘	↘
	Community benefits of the environment	—	—	—	—	—	—

Management effective assessment is colour coded:
 Effective ■ Mostly effective ■ Partially effective ■ Ineffective ■

Trends are indicated by arrows:

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been a downwards change in grade
- No trend provided because the topic was not assessed in 2009

Managing direct use

Commercial marine tourism

A comprehensive suite of management tools complemented by strong industry partnerships are in place and contribute to managing **commercial marine tourism** activities in a sustainable manner. While policy and planning are extensive for tourism, these tools are outdated and require review and harmonisation under an overarching *Tourism Management Strategy* which remains under development. Policy changes by the Queensland Government mean that efforts to expand and enhance the tourism industry are increasing and may lead to significant new tourism developments within and adjacent to the Region. Management agencies work in close cooperation with the tourism industry and use an industry-based ecotourism certification program as a vehicle for ensuring a high quality experience for visitors to the Region. Support for the tourism industry could be improved through the delivery of education and training opportunities to the tourist industry to facilitate understanding and presentation of the Great Barrier Reef and the Region's values.

Defence activities

Defence movements by Navy, Air Force and Army occur throughout the Region with a focus on training activities at Shoalwater Bay, Cowley Beach and Halifax Bay. Management of defence activities in the Region continues to be effective with close cooperation clearly evident between the Great Barrier Reef Marine Park Authority (GBRMPA), Department of Defence and other agencies. This conclusion supports the findings described in the Outlook Report 2009¹ and Strategic Assessment draft Report 2013.⁷ The GBRMPA and Queensland Government continue to rely on the Department of Defence's own robust internal environmental management procedures to deliver effective environmental monitoring and management. A likely intensification of use of military training areas in and adjacent to the Region as a result of the introduction of significant new military equipment such as Landing Helicopter Dock ships means that the Department of Defence, GBRMPA and relevant Queensland agencies will need to continue to consider and manage any identified environmental risks particularly associated with this intensification of use. The review identified shortcomings in the management framework for ordnance contamination issues in the Region. While it is accepted that explosive risks arising in the Region from legacy unexploded ordnance are likely to be low, and the incident response mechanism for dealing with unexploded ordnance is generally excellent, the overall management framework and policy is not considered to align with to the contemporary best practice approach the Department of Defence applies to other forms of its contamination legacy.

Fishing (commercial and recreational)

Managers have a critical role in ensuring that **commercial and recreational fishing** are ecologically sustainable in the Region. There is a reasonable understanding of commercial catch but risks are generally not well known for the level of interactions with species of conservation concern, as highlighted through completion of vulnerability assessments. Recreational fishing is one of the most significant recreational activities undertaken in the Region. Ecosystem effects and cumulative impacts of this activity are poorly understood, but are likely to be most concentrated in inshore areas close to major population centres. Specific programs to collect fisheries information are in place including biological monitoring, stock status process, recreational surveys, log books for Species of Conservation Interest (including turtles and dugong), quotas, vessel monitoring systems, licencing, and Performance Management Systems. However there is a lack of publicly available information on some of these programs, and they are often limited in their scope. Illegal fishing is considered to be a continuing risk to the environmental sustainability of commercial fishing. There is also high non-compliance with the zoning plan for recreational fishing. Staff resources dedicated to fisheries issues in all management agencies have been reducing over the last 5 years although it is too early to determine any effect these staffing cuts have on outputs and outcomes.

Ports

There are 12 Great Barrier Reef trading **ports** in the Great Barrier Reef World Heritage Area, 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 (which excludes ports at Cairns, Mourilyan, Gladstone and Port Alma) and only the minor ports of Cooktown and Quintell Beach are actually located within the Great Barrier Reef Marine Park. Nevertheless, ports can and do have an effect upon the management and conservation of the processes and values of the Region, even if located external to their boundaries.

In general terms, ports within the Region appear to be well managed in an individual sense, albeit with some lapses such as has occurred in relation to planning around some ports. It is recognised that planning for future port developments could be improved. There could be improved intra- and inter-port coordination of environmental monitoring, reporting and research and evaluation to better develop and present a cogent assessment of the effects and influences of 'ports' (as a collective) in the Region upon its values. Improved and more comprehensive monitoring would also act to provide indications of new or emerging threats to the Region, such as any significant deterioration in water quality or the incidence of invasive marine species, or provide information on the absence of such threats. Over the period since the Outlook Report 2009 was released, a significantly elevated number of port development proposals and development activities in the Region has accentuated concerns, both in Australia and internationally. Although some of the proposed port developments may indeed have led to new threats to the ecological processes and integrity of the Region if implemented, it is pertinent to recognise that actual port development has not resulted in widespread deterioration of the Region's values to date. Nevertheless, some localised adverse effects are recognised.

Research activities

The Great Barrier Reef is a hub for national and international research activities, with management agencies subsequently benefitting from the science, which underpins its management. **Research activities** are well managed and through a combination of regulatory tools and co-operative arrangements. The Outlook Report 2009 concluded that management of research in the Region was moving towards desired outcomes, reducing risks and threats to its values. While research activities were generally considered to be environmentally sustainable, it was recognised there was a need to more effectively manage research through the implementation of a relational database designed to capture and manage permitted use. To date, this system (now renamed the Reef Management System) is still under development and unable to inform intended and actual research take through queries and reports. Research activities in the Region are well regarded internationally and there are robust management processes and governance arrangements in place to manage research in the Region. In general, research is not seen to have a large and detrimental impact on the Reef's ecosystem. However, confidence that research is environmentally sustainable is reduced by the limited knowledge of cumulative impacts of collection undertaken for research.

Recreational use (excluding fishing)

Recreation is managed predominately through zoning and in partnerships. The *Recreation Management Strategy for the Great Barrier Reef Marine Park 2012*⁹ identifies the major risks and threats associated with recreation and avenues to reduce those risks, but targets and performance measures are needed. Substantial increases in the numbers of visits made by recreational users have been identified. This has been accompanied by an increase in motorised boating while the popularity of activities such as sailing, reef walking and shell collecting has declined. A decrease in funding in real terms for the Field Management Program (a joint program between the Australian and Queensland Governments) has led to fewer staff and resources available for the program, including a reduction in interpretation facilities and products and maintenance of infrastructure on islands and moorings in some cases. For increasing recreational use to be effectively managed, an improved understanding of cumulative impacts and investment in site planning, supporting infrastructure, compliance, engagement and policy development is needed.

Shipping

The GBRMPA has a limited direct regulatory role and a strong partnership role with other agencies such as the Australian Maritime Safety Authority and Maritime Safety Queensland to manage **shipping** within the Region. In general terms, shipping appears to be well regulated and well managed within the Great

Barrier Reef Region. An extensive suite of control, risk reduction and risk response measures are used to manage shipping activity that occurs at levels which are relatively modest by comparison with many other areas globally, albeit over a much larger area of interest and within an environment of unique significance. Although shipping incidents will inevitably occur, both the rate of incidence and the potential consequences of casualty are attenuated to a significant extent by improvements in technology, constantly advancing ship design and marine environment protection and safety requirements, controls such as REEFVTS (Great Barrier Reef and Torres Strait Vessel Traffic Service) and enforcement/compliance mechanisms. Although the likelihood of single, catastrophic events is effectively risk-managed, chronic, low-level effects are also of potential concern, particularly with regard to the cumulative effects of leaching/loss of biocidal anti-fouling paints, wake/turbulence effects, and possibly also altered light and underwater noise regimes. With the recovering humpback whale population there is also the possibility of more regular, albeit, infrequent, ship strike.

Traditional use of marine resources

Traditional use of marine resources is primarily managed through Traditional Use of Marine Resource Agreements (TUMRAs). Under the former Reef Rescue program, the TUMRA program has been successful in meeting its scheduled milestones. There are currently seven Traditional Use of Marine Resource Agreements and one Indigenous Land Use Agreement covering 13 per cent of the Region, engaging 14 Traditional Owner clan groups. One TUMRA has lapsed since the Outlook Report 2009. The pace of negotiation and implementation of TUMRAs is driven largely by Traditional Owners and their local capacity rather than by government or agency agendas and timelines. Aspiration statements, clear objectives and implementation plans are part of the TUMRA package, although the implementation plans and the reporting on outcomes are often not made publically available. Although funding has been provided through the Reef Rescue program, there remains limited capacity within management agencies to deal with development of multiple TUMRAs simultaneously.

Managing external factors influencing the Region

Climate change

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 Region. Any broader state, national and global initiatives to address climate change, including mitigation and adaptation activities are not considered. Assessing the effectiveness of management agencies in this role is challenging, as so much depends on broader initiatives and on the actions of others, especially in regard to the effectiveness of mitigation measures taken at national and international level and the mitigation and adaptation measures undertaken in adjacent coastal areas. Climate policy and resultant mitigation and adaptation programs are currently in a state of flux at national and state levels and decisions taken at broader government and international levels will be the primary determinants of outcomes for the Great Barrier Reef in relation to climate change impacts.

A systematic approach is in place to plan for and respond to climate change impacts on the Region, with an emphasis on adaptation and improving resilience. The 2012 review of the GBRMPA *Climate Change Action Plan 2007–2012* concluded that the work undertaken by managers over this five years plan had placed GBRMPA at the leading edge of efforts to understand, test and implement adaption options for the Great Barrier Reef. However, the direct management role of GBRMPA is statutorily limited. Reliance on other areas of government and on landholders requires a focus on ecosystem-based adaptation to increase the resilience of the Reef, especially by reducing impacts from other sources such as land-based sediments and nutrients.

The management agencies planning initiatives are focused on enhancing the capacity of ecological, socio-economic and management systems to adapt to change in ecological and social variables. The planned and systematic approach that has been applied gives confidence that GBRMPA has been doing all that might be reasonably expected to reduce the threats posed from climate change in the Region. Changes to staffing and funding arrangements for climate change management within GBRMPA that have aimed to mainstream climate change issues across other areas of the Region's management will

need to be carefully assessed to ensure that attention to climate change issues is not diluted through this process. In spite of good systems and processes, the long-term trend for the Region is still poor⁷ and the extent to which specific initiatives can effectively address particular problems will only become clear over time.

Coastal development

Management of **coastal development** is mainly through the application of Queensland Government legislation and policy. Since Outlook Report 2009, several significant changes have been made to Queensland's primary planning and development framework under the *Sustainable Planning Act 2009* (SPA). The SPA has been amended to change the hierarchy between planning instruments resulting in the State Planning Policy (SPP) now being superior to regional plans and local plans. Previously regional plans were the superior instrument. The single SPP supersedes the Coastal Protection State Planning Policy¹¹ which was incorporated into the *Queensland Coastal Plan*¹² developed by the Queensland Government following the Outlook Report 2009.

The 2013 *State Planning Policy*¹⁰ 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. For the biodiversity state interest, the policy specifies that when making or amending a planning scheme and designating land for community infrastructure, matters of national, state and local environmental interest must be considered, including a requirement to avoid, minimise and offset impacts on matters of state environmental significance (MSES). MSES trigger mapping supports policy implementation. Property-scale mapping is available online and the digital data can be obtained free of charge. Additionally, guidelines support the policy by including model assessment codes and further explanation on how the policy outcomes can be achieved at regional and local level.

For the coastal environment state interest, the policy sets out the policies that must be applied in relation to aspects such as coastal processes and coastal resources, scenic amenity, coastal-dependent development, and public access to the shoreline. Under the revised framework, regional plans only deal with State interests where there is considered to be conflicting interests at the regional level. Regional plans continue to apply until they are reviewed. Most local councils are in the process of preparing new or substantially revised planning schemes that meet the requirements of the SPP. Until then, they must apply the SPP in the assessment of development proposals. New and amended planning schemes are subject to state interest reviews by relevant Queensland departments and approved by the Minister responsible for the SPA. The new policy framework has not been in effect long enough for the impacts on coastal development to be assessed. While some of the coastal areas are protected through tenure such as protected areas, this does not provide confidence that the values of the Region are being protected. It is not clear how risks such as loss of coastal wetlands and modification of floodplains are addressed or mitigated under the new SPP.

As a result of the Outlook Report 2009, the GBRMPA has developed the *Informing the Outlook for the Great Barrier Reef Coastal Ecosystems 2012*,⁶ which comprehensively assesses the pressures affecting coastal ecosystems that have the potential to influence the Reef's health and resilience. This document provides an effective context for management as it describes the functioning, as well as the threats, pressures, risks and trends of the Reef's coastal ecosystems.

The work done in the GBRMPA's *Biodiversity Conservation Strategy*² and *Informing the Outlook for Great Barrier Reef coastal ecosystems*⁶ suggests the long-term future condition and trend for of coastal ecosystems is very poor if joint management action is not taken soon to halt and reverse the decline in inshore and coastal ecosystems, particularly south of Port Douglas. There is evidence of understanding global and national development pressures but there is a lack of a consistent set of goals and objectives to guide coastal development across all the agencies and sectors involved.

Land-based run-off

The impacts of **land-based run-off** are considered one of the greatest threats to the Region. The work being undertaken by the Australian and Queensland governments, in addition to natural resource

management groups, industry and stakeholders in the implementation of the Reef Plan and other programs including the water quality improvement plans, is to be commended. The monitoring programs and improved knowledge about the impacts of land-based run-off are also world class. The processes and outputs of the program have improved considerably since the Outlook Report 2009, and it is expected that improvements in the outcomes will be evident in the coming years with the ongoing implementation of the Reef Plan.

Managing to protect the Region's values

Biodiversity values

Protection of **biodiversity values** is the primary objective for much of the management action taken in the Region through an array of programs and mechanisms rather than a single clearly focused program. Protection of the Region's biodiversity is the primary objective of zoning and most of the other management actions undertaken in the Great Barrier Reef and its catchment. Evidence from long-term monitoring indicates a 50 per cent decline in coral cover on the Great Barrier Reef between 1985 and 2012¹³ and is cause for considerable concern. There is no explicit strategy and action plan to address this degradation. The extensive degradation in the southern inshore part of the Region highlights the importance of considering cumulative and consequential impacts on biodiversity, which are currently not well understood by managers. Planning for biodiversity management has been significantly improved since the Outlook Report 2009 through preparation of the Biodiversity Conservation Strategy.² Desired outcomes for species groups and habitats and some preliminary draft targets together with a commitment to a collaborative process for setting and refining targets has been outlined in the *Great Barrier Reef Region Strategic Assessment draft Program Report 2013*.¹⁴ Once developed, these targets will provide a much more explicit basis for planning biodiversity management programs. However, the capacity of the field management program to address biodiversity management and natural resource management issues in marine and island environment is very limited and decreasing with closure of bases.

Heritage values

The Traditional Owners of the Great Barrier Reef Region have inherent rights and interests over their sea country, including a lead role in the protection of **Indigenous heritage**. While significant progress has been made effectively engaging with Traditional Owners in the sustainable management of their sea country, further work is needed to maintain these relationships, support co-management and develop a mutually agreed and culturally appropriate process for the integration of Indigenous knowledge into management. For a number of **historic heritage** matters there is insufficient understanding of their location, condition and trend. Improvements in processes, planning and inputs are needed to revise and implement a comprehensive heritage strategy. A database with spatial capacity will assist proper consideration of the potential impacts from proposed activities on heritage values in the Region. **World heritage** issues within the Region are well known and articulated. Planning for the management of world heritage issues is effective; however the outcomes are strongly influenced by management of issues such as ports and coastal development. A declining trend in the management effectiveness for heritage since Outlook Report 2009 is because of the lack of a review to include contemporary heritage issues and lack of implementation of the *Great Barrier Reef Marine Park Heritage Strategy 2005*.¹⁵

Community benefits of the environment

Community benefits vary according to the understanding and perspective of the beneficiaries. There is likely to be increasing conflict between economic benefits associated with port and coastal development and the aesthetic and recreational benefits. Many of the pressures associated with community benefits, such as population change, economic growth and climate change, are global drivers and are difficult for a single planning system to encompass. However, the Recreation Management Strategy⁹ and the Coastal Zone and Great Barrier Reef Strategic Assessment draft Reports^{7,16} made some progress towards recognising the enjoyment and personal attachment to the Region. Social, cultural and heritage values are considered when assessing permit applications, but this application is limited by knowledge of these aspects in specific locations. Currently there are no guidelines or benchmarks for assessing or

managing community benefits derived from the Region. A range of programs and strategies (including community engagement, volunteer and interpretative services, and capacity for people to access the Reef) contribute to mostly effective management outcomes for community benefits.

Management of elements within the management framework

Context is the strongest management effectiveness element — all topics were assessed as either effective or mostly effective. Trends in this element are either stable or improving. Significant efforts have been made in **planning** for a number of issues such as protecting of biodiversity values, coastal development and recreation. Some plans are still in draft form or are considerably out-dated. Planning effectiveness has declined in some areas as a result of changing policy. Lack of consistency across jurisdictions is the weakest aspect of planning. Adequacy of **inputs** is variable across management issues with secure resourcing (both funding and staff resources) recognised as a significant ongoing problem for many management issues and a better understanding and documentation of management resource requirements is needed. In many cases, the lack of adequate resources to advance planning and management is constraining the effectiveness of other aspects of management. Dedicated funding streams, such as funding for the Reef Plan and the Indigenous component of Reef Rescue, have resulted in improved planning and outputs. Delivery of desired **outputs** was rated as effective or very effective for all issues except coastal development. 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. Achievement of desired **outcomes** (values protected, threats reduced, long-term environmental and economic sustainability) is highly variable across issues. Objectives in relation to community understanding of issues and development of effective partnerships are being achieved. For some management topics, such as land-based run-off there is a significant time lag between action and outcomes.

Management approaches

Environmental regulation

Statutory instruments used to assist the management of the Region are generally contemporary and appropriate. However, the relevant Queensland legislation is not always consistent with the Commonwealth legislation, often due to differences in objectives. The Great Barrier Reef zoning plan has been very effective for issues such as fishing, resulting in positive outcomes for biodiversity values. However zoning (spatial planning) is not designed to address management of other topics (for example tourism). Non-statutory mechanisms include policies, strategies, position statements and guidelines. A number of policies and strategies have been considerably improved or developed and since Outlook Report 2009 – (for example climate change, recreation, biodiversity, TUMRAs, Reef Plan). A number of policies and strategies would benefit from more outcome-oriented targets, with clear objectives, actions and milestones.

Engagement

Partnership and collaborative arrangements with Queensland and other Australian government agencies include field management and on-ground works. Further positive collaboration with government departments within and across levels of government is through programs such as the Reef Plan. Research collaboration between GBRMPA, Australian Institute of Marine Science (AIMS), CSIRO, Queensland Government, universities and other research bodies has been positive and proactive. The development of partnerships and stewardship arrangements is one of the strongest aspects of management of the Region.

Knowledge, innovation and integration

The Outlook Report 2009 process and the Coastal Zone and Great Barrier Reef Strategic Assessment draft Reports^{7,16} have accumulated and consolidated knowledge relevant to the management of the Region and made this available to managers, stakeholders and the general public. In addition these processes have identified key knowledge gaps and have stimulated programs and projects to fill these knowledge gaps.

Management agencies have developed strong and extensive partnerships with research providers such as CSIRO, AIMS and universities. These partnerships have become more targeted as key knowledge gaps have been identified through processes such as the Outlook Report and in response to key environmental and socio-economic challenges.

The development of an integrated monitoring framework and program is a positive initiative that will help to address some of the deficiencies in past monitoring efforts, especially in relation to cumulative impacts and overall ecosystem health. There are issues around timely publication of results, accessibility of publicly funded data, both by researchers and government, although this is improving.

The 5-yearly Outlook Report process now provides the most comprehensive, regular basis for evaluation and reporting on management of the Region. The model and process developed for the Outlook Report has been widely acknowledged as a ground-breaking innovation and has been adapted for use in Australian State of Environment reporting as well as in other jurisdictions including internationally.

Resourcing of management arrangements

Some areas of assessment of management inputs (staffing and funding) have declined since the Outlook Report 2009. This appears to be largely a result of competing requirements for management of other high priority issues. In the face of essentially static resources for overall management outside specially funded programs such as Reef Rescue, Reef Plan and TUMRAs, redirection of effort is the main recourse for addressing these emerging priorities. However it has meant that management of issues such as tourism and research has not kept pace with plans or recognised needs. While not necessarily presenting a high risk to the Reef overall, the reputation of the Region's management is likely to decline if additional resources to strengthen management in these areas cannot be found.

1. Introduction

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. A broad assessment 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 management the Region's ecosystem was independently assessed in the *Great Barrier Reef Outlook Report 2009*. A similar independent assessment has been undertaken for this report.

1.1 Management effectiveness evaluation

Management effectiveness evaluation is defined as the assessment of how well protected areas are being managed – primarily the extent to which they are protecting values and achieving goals and objectives. The International Union for Conservation of Nature (IUCN) has developed a framework for assessing management effectiveness that has been widely applied around the world to develop specific assessment systems that are designed to meet the need to evaluate management effectiveness in different circumstances.¹⁷

Good management needs to be rooted in a thorough understanding of the individual conditions related to protected areas, be carefully planned and implemented and include regular monitoring, leading to changes in management as required. The management cycle (Figure 1) identifies six important elements in this process that ideally should all be assessed if effectiveness of management is to be fully understood and appropriate management responses developed and implemented.



Figure 1. The framework for assessing management effectiveness of protected areas (from Hockings et al., 2006)¹⁷

Effective management:

- begins with understanding the **context** of the protected area, including its values, the threats that it faces and opportunities available, its stakeholders, and the management and political environment;
- progresses through **planning**: establishing vision, goals, objectives and strategies to conserve values and reduce threats;
- allocates **inputs** (resources) of staff, money and equipment to work towards the objectives.
- implements management actions according to accepted **processes**;
- eventually produces **outputs** (goods and services, which should usually be outlined in management plans and work plans);
- that result in impacts or **outcomes**, hopefully achieving defined goals and objectives.

The criteria used to assess each element of the framework are outlined in Table 2.

Table 2 IUCN- World Commission on Protected Areas framework for assessing management effectiveness of protected areas and protected area systems

Elements of management cycle	Design		Appropriateness / Adequacy		Delivery	
	Context	Planning	Inputs	Process	Outputs	Outcomes
Focus of evaluation	Assessment of importance, threats and policy environment	Assessment of protected area design and planning	Assessment of resources needed to carry out management	Assessment of the way in which management is conducted	Assessment of the implementation of management programmes and actions; delivery of products and services	Assessment of the outcomes and the extent to which they achieved objectives
Criteria that are assessed	Significance / values Threats Vulnerability Stakeholders National context	Protected area legislation and policy Protected area system design Protected area design Management planning	Resources available to the agency Resources available to the protected area	Suitability of management processes and the extent to which established or accepted processes are being implemented	Results of management actions Services and products	Impacts: effects of management in relation to objectives

Reproduced from Hockings et al., 2006¹⁷

2. Assessment methodology

Assessment of the six elements (Figure 1) and the links between them provides a comprehensive picture of management effectiveness. All six elements (context, planning, inputs, processes, outputs and outcomes) are important in developing an understanding of how effectively protected areas are being managed. They reflect three “themes” of management: design (context and planning), appropriateness/adequacy (inputs and processes) and delivery (outputs and outcomes). It is important to assess all six elements in order to fully understand management effectiveness. For example, assessing only outcomes may indicate the objectives have been achieved but leaves it unclear whether it was due to good luck or good management; conversely if an outcome is not achieved then unless all six elements are assessed, it is hard to know if it was due to insufficient resources (inputs), poor planning or a problem with the tools and approaches used to manage the issue.

The evaluation system for the *Great Barrier Reef Outlook Report 2009* was developed using this framework and assessed all six elements. The Outlook Report is required to assess *the existing measures to protect and manage the ecosystem within the Region*. This assessment addressed the overall management of particular topics within the Region, rather than an individual agency's management of any particular issue or activity. The assessment system used for this report follows that used in the Outlook Report 2009 and focuses on all the aspects of management undertaken by the Great Barrier Reef Marine Park Authority as well as other Australian and Queensland government agencies.

Management of activities extending outside the boundary of the Region was considered where the activities affect the values of the Region. For example, land-based run-off and climate change are both key issues for the Region, but the majority of the management efforts for both issues are the responsibility of all levels of government and a variety of agencies. Given the complexities outlined above, it was necessary to consider factors affecting the Region from outside the area too.

2.1 Management topics, scale and complexity

While the majority of thematic areas used in the Outlook Report 2009 are repeated in this report, additional topics have been included following the strategic assessment for the Great Barrier Reef Region under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC) in 2013. In particular, ports and shipping were split into separate topics to reflect the concerns about port development and growth and differences in the management arrangements for these activities. Community benefits is a new topic that reflects the socio-economic aspects such as employment and income, in addition to less tangible attributes such as understanding, appreciation, enjoyment, personal connection, health benefits and access to the Reef. The 14 management topics that were assessed were grouped into three clusters:

1. Managing direct use

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

2. Managing external factors

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

3. Managing to protect the Region's values

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

The assessment and associated text in the report relating to management of defence activities, ports and shipping were prepared by Ground Zero Environmental Pty Ltd (Trinder and Polglaze). All other sections of the report were prepared by UniQuest Pty Ltd (Hockings and Leverington).

The management topics were not weighted and the performance assessments need to be interpreted in the context of differences in scale and complexity (Table 3). Criteria were developed under each framework element with a total of 49 indicators across the six elements (Table 4). Information relevant to

assessing performance against each of the indicators was assembled by relevant management staff and provided to the independent assessors who reviewed this information and also sought additional information from relevant research papers and other source documents. The independent assessors then rated performance of the elements against grading statements (described in Appendix 1), assessed the program area (Appendix 2), and provided a justification for the rating and a documentation of the main evidence they considered in reaching these judgements (Appendix 3) and supplied a matrix summarising the assessment for each topic (Appendix 4).

Table 3. Scale and complexity of issues addressed in the management effectiveness assessment

Issue	Scale	Complexity			Increasing complexity ↑
		Social	Biophysical	Jurisdictional	
Climate change	Region-wide	major	major	major	
Coastal development	Region-wide and limited to coastal areas and mainly inshore waters	major	major	major	
Land-based run-off	Great Barrier Reef catchment and mainly inshore waters	major	major	major	
Ports	Concentrated around 12 ports from Lockhart River in the north to Gladstone in the south	major	moderate	major	
Fishing	Region-wide but variable in intensity	major	major	moderate	
Heritage values	Region-wide	major	moderate	moderate	
Commercial Tourism	Region-wide but variable in intensity	major	moderate	moderate	
Recreation (non extractive)	Region-wide but variable in intensity	major	moderate	moderate	
Traditional use of marine resources	Region-wide but variable in intensity	major	moderate	moderate	
Biodiversity values	Region-wide	minor	major	moderate	
Community benefits of the environment	Region-wide	major	moderate	minor	
Shipping	Concentrated around shipping lanes	moderate	moderate	moderate	
Research activities	Region-wide but limited in intensity	minor	moderate	minor	
Defence activities	Limited in area and duration	minor	minor	minor	

Table 4 Indicators used to assess effectiveness of management topics

Indicators for Outlook Report 2014
CONTEXT
CO1 The values of the Great Barrier Reef relevant to *** are understood by managers
CO2 The current condition and trend of values relevant *** are known by managers
CO3 Impacts (direct, indirect and cumulative) associated with *** are understood by managers.
CO4 The broader (national and international) level influences relevant to *** are understood by managers.
CO5 The stakeholders relevant to *** are well known by managers.
PLANNING
PL1 There is a planning system in place that effectively addresses ***
PL2 The planning system for *** addresses the major factors influencing the Great Barrier Reef Region's values.
PL3 Actions for implementation regarding *** are clearly identified within the plan
PL4 Clear, measurable and appropriate objectives for management of *** have been documented
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to ***
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address ***
PL7 Sufficient policy currently exists to effectively address ***
PL8 There is consistency across jurisdictions when planning for ***
PL9 Plans relevant to *** provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.
INPUTS
IN1 Financial resources are adequate and prioritised to meet management objectives to address ***
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address ***
IN3 The right skill sets and expertise are currently available to the managing organisations to address ***
IN4 The necessary biophysical information is currently available to address ***
IN5 The necessary socio-economic information is currently available to address ***
IN6 The necessary Indigenous heritage information is currently available to address ***
IN7 The necessary historic heritage information is currently available to address ***
IN8 There are additional sources of non-government input (for example volunteers) contributing to address ***
PROCESSES
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of ***
PR2 The local community is effectively engaged in the ongoing management of ***
PR3 There is a sound governance system in place to address ***
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for ***
PR5 Appropriate training is available to the managing agencies to address ***
PR6 Management of *** is consistently implemented across the relevant jurisdictions
PR7 There are effective processes applied to resolve differing views/ conflicts regarding ***
PR8 Impacts (direct, indirect and cumulative) of activities associated with *** are appropriately considered.
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding ***
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding ***
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding ***
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding ***
PR13 Relevant standards are identified and being met regarding ***
PR14 Targets have been established to benchmark management performance for ***
OUTPUTS
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for ***
OP2 Implementation of management documents and/or programs relevant to *** have progressed in accordance with timeframes specified in those documents
OP3 The results (in OP1 above) have achieved their stated management objectives for ***
OP4 To date, products or services have been produced in accordance with the stated management objectives for ***
OP5 Effective knowledge management systems regarding *** are in place within agencies
OP6 Effective systems are in place to share knowledge on *** with the community
OUTCOMES
OC1 The relevant managing agencies are to date effectively addressing *** and moving towards the attainment of the desired outcomes.
OC2 The outputs relating to *** are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)
OC3 the outputs (refer OP1 and 3) for *** are reducing the major risks and the threats to the Great Barrier Reef
OC4 Use of the Great Barrier Reef relating to *** is demonstrably environmentally sustainable
OC5 Use of the Great Barrier Reef relating to *** is demonstrably economically sustainable
OC6 Use of the Great Barrier Reef relating to *** is demonstrably socially sustainable enhancing understanding and/or enjoyment
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address ***

2.2 Assessment criteria, grades and trends

The assessment system comprises a qualitative assessment of performance against all six elements of the IUCN management effectiveness framework (context, planning, inputs, processes, outputs and outcomes) for each of management topics. The assessment system was reviewed in a workshop attended by key staff from the Great Barrier Reef Marine Park Authority. Criteria varied slightly from the Outlook Report 2009, refined to take account of the assessment experience and lessons from other assessments^{7,16} since then. In addition, some criteria were deleted as they were considered no longer relevant or had proved difficult to reliably assess during the Outlook Report process in 2009.

A four point rating scale commonly used in management effectiveness evaluation systems was adopted. The rating scale was 1 = 0-20 per cent of optimal condition, 2 = 21-50 per cent of optimal condition, 3 = 51-80 per cent of optimal condition, 4 = 81-100 per cent of optimal condition. Scores for each element of the IUCN framework were scaled to provide a total score out of 40 and a rating system was developed to convert scores to a rating of management as follows:

- If the total score is between 35–40, then the overall grading statement for that element is **effective**.
- If the total score is between 27–34, then the overall grading statement for that element is **mostly effective**.
- If the total score is between 16–26, then the overall grading statement for that element is **partially effective**.
- If the total score is between 0–15, then the overall grading statement for that element is **ineffective**.

Confidence and Trend

For each indicator, the trend and confidence with which the scores were given was also provided (Appendix 3). For confidence the categories were: adequate high-quality evidence and high level of consensus, limited evidence or limited consensus, or very limited evidence—assessment based on anecdotal knowledge. The following symbols for confidence were adopted:

- adequate high-quality evidence
- ◐ limited evidence
- very limited evidence

Trend was also calculated in relation to the overall grade for each element (context, planning, inputs, process, outputs and outcomes) for each relevant the management topics (Table 1). Some topics do not have a trend indicator because they did not appear individually (or at all) in the Outlook Report 2009 assessment (including ports, shipping and community benefits of the environment). Where trend was assessed, the categories included: improving, deteriorating, or stable. When there was no change in overall grade for an element within a topic, the trend is shown as declining or improving when the percentage change in overall score for the element equals or exceeds 7.5 percent. In some cases, for example for *Commercial marine tourism* planning and processes, the element changed grade from effective to mostly effective even though the percentage change in score was less than 7.5 percent. This is because the 2009 score for the element was already very close to the boundary between grades of performance. The following symbols for trend were adopted:

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been a downwards change in grade
- No trend provided because the topic was not assessed in 2009

The Australian and Queensland governments compiled information, data sources and lists of information sources relevant to each of the 49 indicators. The independent assessors reviewed this information, advice and key documentation provided before the end of 2013. The independent assessors then reviewed evidence and assigned an initial rating to each of the indicators. The rating was agreed by consensus and the rating and the reasons for assigning the rating (key points of evidence or other considerations relating to the rating) were noted in a standard proforma. The ratings and reasons were subsequently discussed with staff from the Great Barrier Reef Marine Park Authority, and the Queensland and Australian governments. Based on this open and iterative process of discussion and review, the assessors adjusted a number of assessments where improved knowledge and understanding indicated that the original ratings was either too high or too low and the list of evidence supporting the assessment was refined as necessary.

2.3 Management effectiveness of the elements of the management cycle

Following the assessment for the indicators for the topics, a summary of the effectiveness of the six elements of the management cycle across all the topics was developed. This allows the identification of where the strengths of current management lie (Section 6). For example, since Outlook Report 2009 significant work has been undertaken to better understand the values associated with the management of the Region. This has resulted in the context element being considered as either effective or very effective for all topics.

2.4 Management effectiveness of management tools and approaches

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 Region.
- 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.

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

- Acts and Regulations
- zoning plans
- management plans
- permits and licences(including environmental impact assessment)
- 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.

Further details of the program areas and management tools are provided in Appendix 2. Detailed results of the assessment of each component management activity against the 49 indicators are provided in Appendix 3, with the summary of grades for each topic shown in Appendix 4. A summary of the assessment of each component activity is set out below.

Following the assessment process outlined above, the assessors considered how effective the main management tools were in delivering outcomes for each of the 14 topics. The results of this assessment are outlined in Section 7.

3. Assessment of managing direct use of the Region

3.1 Commercial marine tourism

Table 5 summarises the assessment results for commercial marine tourism. Management of tourism in the Region is widely recognised as a leading example of best practice.¹⁸ The Great Barrier Reef Marine Park Authority (GBRMPA) is the lead agency for management of marine tourism in the Region but works in close cooperation with both Queensland and local governments and the tourism industry. Policy changes by the Queensland Government mean that efforts to expand and enhance the tourism industry are increasing and may lead to significant new tourism developments within and adjacent to the Region.

Table 5 Assessment results for commercial marine tourism

Commercial marine tourism	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●				↔
Planning		●			↓
Inputs		●			↘
Processes		●			↓
Outputs	●				↔
Outcomes		●			↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

Management of tourism employs a mix of tools, with emphasis on plans of management for intensively used areas and partnerships with accredited tour operators, as well as permits with conditions to manage specific site and operational issues. Tourism is recognised by managers as one of the most significant uses of the Region and a key mechanism for the presentation of its values to Australian and international visitors. Tourism is acknowledged to be a major driver for economic growth and employment for coastal Queensland. The Australia-wide economic contribution (direct and indirect) generated by tourism, commercial fishing, recreation and scientific research in 2012 was \$5.7 billion per annum — of this, \$5.2 billion was attributed to tourism.¹⁹

The Outlook Report 2009 recognised high levels of visitor satisfaction and significant economic benefits to local communities and subsequent studies have confirmed that tourism continues to perform well in terms of both visitor satisfaction and economic benefit. More recently, preliminary visitor survey results from the social and economic long-term monitoring program indicate that 80 per cent of tourists rate their satisfaction as very high and visiting the Reef was an important motivation to visit the Region for 70 per cent of the tourists.²⁰ In 2009, the Outlook Report noted that longer-term environmental performance would depend on clearer understanding of the implications of latent capacity in the permit system and improved documentation of the levels of specific activities undertaken in each location over time. This has been partially improved with the

implementation of the environmental management charge online system, one module of the planned Reef Management System (a permitting system). However, latent capacity remains a problem and inadequate maintenance of some tourism structures within the Marine Park is an emerging issue. An audit and compliance plan and an update to the 'Structures in the Marine Park' policy to address the issue of aging and poorly maintained tourism infrastructure are being developed.

Key players such as the GBRMPA, Tourism Queensland, Queensland Parks and Wildlife Service, tourism industry representatives and the conservation sector have collaborated in the listing of the Great Barrier Reef as a National Landscape in March 2012.²¹ The National Landscapes program helps promote mutual understanding between tourism operators and managers on the Region's values for tourism.

Plans of management covering less than 10 per cent of the total Great Barrier Reef area that receive more than 80 per cent of tourist visits are in place. Enhanced planning capability within the GBRMPA and Queensland Parks and Wildlife Service and a schedule of regular reviews would improve consistency. The Cairns and Whitsunday Plans of Management were last reviewed in 2008 and GBRMPA has received numerous requests from the tourism industry to review these plans. The Outlook Report 2009 assessment noted some tourism activities occur over a wide area and that the planning system did not include an overarching strategy to guide tourism activities. An overarching strategy, although under development, is still to be finalised and an expansion of site planning has not occurred into areas where growth is increasing, such as the southern Great Barrier Reef. If site planning is not pre-emptive, protection of the Region's values in these expanding areas will not be as effective. Current tourism management systems and programs were largely set up to manage commercial marine tourism during the rapid expansion phase of the 1990s. Planning has not proactively addressed emerging trends and opportunities as effectively as it might. To some extent, management of tourism has been a victim of its own success as efforts within GBRMPA, and the Queensland Parks and Wildlife Service as day-to-day managers, have shifted to emerging issues in the Region's management. This is reflected in a reduction of the management effectiveness grades relating to planning and management processes and a declining trend but no change of overall grade for management inputs and outputs.

Policies covering many aspects of tourism are now outdated and work is still needed to address shortcomings identified in the Outlook Report 2009. Implementation of the Climate Change Action Strategy and a co-ordination framework to assist with consistency across jurisdictions should be priorities in working towards an overarching strategy for managing tourism in the Region. Marine tourism contingency planning is nearly completed.

Sound governance, industry partnerships and management processes are in place to address tourism issues; GBRMPA is widely recognised as a world leader in this area. Joint permitting and assessment processes support consistency in the approach across jurisdictions although recently proposed changes to permitting policy in Queensland national parks through the Queensland Eco and Sustainable Tourism (QuEST) program²² have introduced some incompatibilities that need to be addressed.

Most tourists are carried by a small number of tour operators independently accredited through Ecotourism Australia. Permit conditions seek to limit cumulative impacts and the potential problems arising from significant latent capacity within the permit system have been recognised and, at least, partially, addressed through plans of management, capping permits and a booking system for sensitive sites. The issue of permit latency has been exacerbated by the downturn in tourism and the impacts of cyclones that have made tourist operations more difficult. While the permitting system manages tourism well, a tourism permit can be more than 16 pages long and contain more than 50 conditions. Whether these permits are effective at informing and educating tourism operators about what they can and cannot do — while delivering required outcomes for the environment, social, cultural and heritage values — requires evaluation.

There is no annual compliance program to review the risks associated with permit non-compliance. The limited auditing that has been conducted suggests that non-compliance does occur quite widely but is not of a nature that would significantly threaten the Region's values. A key issue is the complexity of the current management arrangements for tourism. Knowing where you can go and what you can do relies on knowledge of zoning plans, plans of management, complex permissions and best practices. Simplification and alignment of current arrangements through regular ongoing reviews is required.

Since 2012, environmental management charge records can be recorded online, which has improved efficiencies for the operators and the government agencies involved. Permit bookings are displayed on the GBRMPA website, providing a new level of public transparency. Improvements in the permit management process since the Outlook Report 2009 include the development of Environmental Management Charge Guidelines to enhance transparent and equitable decision making and a greater level of electronic data management.

The tourism industry has experienced difficulty in retaining and attracting experienced staff due to industry downturns and competition from the mining sector. This, alongside a reduction in educational and training opportunities (the reef discovery training program is no longer operational) has generally led to a decline in the delivery of education on the Region's values and Australia's obligations regarding presentation of these values. However, within GBRMPA there continues to be high levels of skills related to marine tourism management and impact assessment. Expert advice also continues to be sought through the Tourism and Recreation Reef Advisory Committee and other Reef Advisory Committees. Representatives from the tourism industry are also members of Local Marine Advisory Committees.

The management agencies endeavour to build on best available biophysical and monitoring research information to make relevant management decisions, including reef health monitoring information provided by tourism operators through GBRMPA's Eye on the Reef program. This program collects information through various methods including the Sightings Network, the Eyes and Ears Incident Reporting Network, Tourism Weekly Monitoring, Rapid Monitoring and Reef Health and Impact Survey sub-programs. Eye on the Reef has been enhanced and now integrates data and reporting across programs, while having a user-friendly data portal and the provision for online training. Government agencies, scientists and the tourism industry are collaborating closely in addressing the threat of crown-of-thorns starfish, especially at sites of high tourism value. The Australian Government has committed in excess of \$8.5 million to this program since 2012.

The knowledge base within the GBRMPA, other management agencies and the wider community has continued to increase, contributing to a reduction in major risks to the Region's ecosystem and its heritage values.

3.2 Defence activities

Table 6 summarises the assessment results for defence activities. The review concludes that management of activities undertaken by the Department of Defence in the Region continues to be very effective, with close cooperation clearly evident between GBRMPA, the Department of Defence and other agencies. This conclusion supports the findings described in the Outlook Report 2009¹ and Strategic Assessment draft Report 2013.⁷

The Great Barrier Reef is inscribed on the World Heritage List and is generally acknowledged as stressed from various causes including climate change. In such circumstances it is considered that striving for excellence in management of all aspects of military training and operational activities is a reasonable management objective. On that basis, the review identified three emerging issues relating to the use of the Region by the Department of Defence.

Table 6 Assessment results for defence activities

Defence activities	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●				↕
Planning	●				↘
Inputs		●			↓
Processes	●				↔
Outputs	●				↔
Outcomes	●				↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

The first issue is that GBRMPA and Queensland management agencies rely on the Department of Defence’s own robust internal environmental management procedures and expertise in areas such as impact assessment and mitigation and the on-ground compliance monitoring associated with military training. The Department of Defence has environmental staff with specialist expertise in the specific environmental risks associated with different types of defence activities. This level of expertise adds significantly to the overall effectiveness of environmental management of defence activities occurring in and adjacent to 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.

The second issue is that due to the significant cost, land acquisition challenges and environmental considerations – the Department of Defence has committed to optimising its use of the existing amphibious training area at Shoalwater Bay to support the full spectrum of amphibious training rather than develop any new training areas. Planning for the introduction of significant new platforms, in the form of amphibious ships (known as Landing Helicopter Dock ships) has commenced and will mean that amphibious lodgement training, (and its component elements) is likely to intensify at Shoalwater Bay and possibly other sites in the Region. The Department of Defence, GBRMPA and relevant Queensland agencies will need to continue to consider and manage any identified environmental risks particularly associated with this intensification of use. At the same time unilateral training by foreign forces – for example Singapore, has also contributed to a changing pattern of use over the lifetime of the current Outlook Report 2014. To date the cumulative effects of any increased frequency and intensity of use has been effectively managed. The limited training areas available for amphibious exercises will need to continue to be carefully monitored and managed into the future as use changes. Combined with the previously mentioned challenge relating to availability of expertise and access to resources suggests continued vigilance will be necessary.

The third issue relates to shortcomings in the management framework for ordnance contamination issues in the Region. This was also recognised in the Great Barrier Reef Strategic Environmental Assessment Report.²³ Unexploded ordnance (UXO), explosive ordnance waste, and a wide range of dumped war materials are a particular class of hazard known to be widespread in the Region.

These contaminated sites stem from military operations and training, particularly from World War II and the immediate aftermath. Not all sites are known or documented.

The Department of Defence has a National Unexploded Ordnance Office which implements the Commonwealth policy and gathers and disseminates information to the public to assist with the safe management of land and sea areas that may be subject to UXO contamination. The publicly available website²⁴ provides information and advice regarding safety issues related to UXO, and communication and contact details for members of the public to report UXO. The Department of Defence acts to remediate some previously affected UXO areas as part of a limited Defence-funded program. The Commonwealth Policy dates from 1999 and states that the Commonwealth is generally under no legal obligation to commit resources to reduce known hazards associated with UXO contamination. This approach would seem to treat hazards arising from UXO contamination in a unique way when compared to the management of contamination arising from all other forms of hazardous materials in the environment. It is a specific shortcoming that the Commonwealth UXO policy does not clearly consider environmental contamination risks.

The Department of Defence's policies for other types of contamination are sound, based on accepted scientific methods of investigation and robust risk assessment. While it is accepted that explosive risks arising in the Region from legacy UXO are likely to be low, and the incident response mechanism for dealing with UXO is generally excellent, the overall management framework and policy is not considered to align with to the contemporary best practice approach applied to other forms of Defence's contamination legacy.

With regards to heritage, items and locations of significance are understood to exist throughout the Region, contributing to its overall historical heritage. Defence is in the process of assessing heritage values across the Defence estate to determine which places need to be acknowledged, managed and conserved. Defence aims to understand the heritage values of its estate, including training areas with natural and Indigenous heritage values as well as any built properties. Defence has a dedicated Heritage and Biodiversity Conservation Directorate and several management tools that provide information and guidance on the heritage conservation objectives of Defence and associated processes.²⁵

3.3 Fishing

Table 7 summarises the assessment results for fishing. Fishing is the principal extractive use of the Region. Viable commercial fishing industries and recreational fishing depend on a healthy ecosystem. Commercial fishing targets a range of species including fish, sharks, crabs, and prawns. Commercial harvest fisheries target a range of species including coral and live rock, marine aquarium fish, sea cucumber and tropical rock lobster. The main target species for recreational fishing are coral trout and other cod, emperor, tropical snapper, barramundi, bream, mackerel, whiting, crabs, lobster and bait fish. Recreational fishers report that they release nearly half of all fish caught but the survival of released fish is highly variable and dependent on a number of factors including the experience of the fisher.

Management of fishing and its dependent aquatic environment is shared between the Australian and Queensland governments. The primary management tools with respect to fishing include the Queensland *Fisheries Act 1994* that licences commercial fishing, establishes gear and spatial temporal closures and total allowable catch limits, the Marine Park and the Great Barrier Reef Coast Marine Park zoning plans, associated Regulations, stewardship (Reef Guardian fishers) and joint marine parks permits for a small number of harvest fisheries and developmental fisheries. Special management areas are in place to regulate fishing practices in areas important to dugong, and to close certain areas for public appreciation. Recreational fishing is also managed through size, take and possession limits; although, there is no total allowable catch for this fishery. Fishing gear constraints and limitations on the take of certain species contained in the zoning plan and the Regulations also contribute to the management of recreational fishing and collecting. Compliance,

undertaken by the joint Australian and Queensland governments' Field Management Program, also plays a significant role in managing the impacts of fishing.

Table 7 Assessment results for fishing

Fishing	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context		●			↔
Planning		●			↔
Inputs			●		↔
Processes		●			↔
Outputs		●			↔
Outcomes			●		↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

The total revenue from commercial fishing in the Region in 2011–12 was estimated at \$192 million.¹⁹ Economic data estimated that more than \$57 million per annum was spent on recreational fishing, with more than 3.4 million fishing trips undertaken in 2012.¹⁹

As identified in the Outlook Report 2009, there is a good understanding of commercial catch information. Cumulative impacts associated with commercial trawl fishing are reasonably well known. The recent *Ecological risk assessment of the East Coast Otter Trawl Fishery in the Great Barrier Reef Marine Park 2012* found the overall ecological risks from trawling are relatively low, but there are some high ecological risks for some deep water skates, several rays, and two species of sea-snakes.²⁶ A reduction in trawl fishing effort of more than 40 per cent between 2005 and 2009, driven by prevailing economic conditions rather than management intervention, has significantly reduced the ecological risk from trawling. However, higher effort levels are still allowable under existing management arrangements. Further reductions in trawl bycatch and other efforts to reduce risks for species of conservation concern are important for the sustainability of the fishery.

Key indicator fish species are monitored and assessed on an annual basis using available independent and dependent monitoring information and research findings. How the fisheries interact with non-target animals is understood, though largely unquantified by species, and regulations are in place to minimise or prevent interaction. Precautionary management is used to address remaining risks and unknown interactions by limiting participation, and limiting the type of gear that can be used, how the gear can be used, and where the gear can be used.

The Recreation Management Strategy⁹ summarised the key threats to the Region from recreational fishing but did not consider this activity in detail. Ecosystem effects and cumulative impacts of recreational fishing are less well understood because of the lack of data, but are likely to be concentrated in inshore areas close to major population centres. Local depletion, particularly of some inshore species, is of concern in some areas.

An annual process is undertaken by the Queensland Department of Agriculture, Fisheries and Forestry to identify 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 65 (44.6 per cent) fisheries resources harvested on the east coast of Queensland is defined. The remainder are either uncertain or undefined because there is insufficient information available to make an assessment.

Specific programs to collect fisheries information are in place including biological monitoring, stock status process, recreational surveys, log books for 'species of conservation interest' (including turtles and dugong), quotas, vessel monitoring systems, licencing, and Performance Management Systems. However, there is a lack of publicly available information on some of these programs, and they are often limited in their scope. For example, biological monitoring is prioritised for a select number of key recreational and commercial species. Vessel monitoring systems are only in place for selected fisheries such as the East Coast Otter Trawl Fishery, although the Queensland Government supports implementation of such monitoring across all vessels. Anecdotal evidence suggests that 'species of conservation interest' are often not reported due to concerns about management repercussions.

Vulnerability assessments for two species (threadfin salmon and grey mackerel) have been completed by GBRMPA. Both species are primarily found in inshore habitats, with major pressures on their populations identified. Minimum size limits, commercial catch limits and recreational bag limits are in place under the East Coast Inshore Fin Fish Fishery (Queensland Fisheries Act). Protection of dugong from netting in the Townsville region has improved through rule changes for commercial fishing within part of the Bowling Green Bay Species Conservation (Dugong Protection) Special Management Area in 2011. Illegal fishing is considered one of the greatest risks to the environmental sustainability of commercial fishing.

While concerns about impacts to corals (including those from flooding, bleaching and anchor damage) in the Whitsundays led to the establishment of no anchoring areas, the Recreation Management Strategy⁹ concludes that recreational fishing practices are unlikely to result in significant direct or indirect impacts on the habitats of the Region. However, an increase in the coastal population and the fly-in-fly-out community could lead to a decline in the Region's values if not spatially monitored and managed. Non-compliance by recreational line fishers continues to be high, particularly in the Townsville/Whitsunday and Mackay/Capricornia management areas.

Commercial fisheries arrangements in the Region are accredited against national sustainability guidelines under the Environment Protection and Biodiversity Conservation Act, including recommendations and conditions designed to improve sustainability. However, there are inconsistencies in the management arrangements for fishing in the Region under the State and Commonwealth regulations. For example some areas closed to fishing under one regulation may be open in under another; and the apparatus able to be used in under one regulation may be different from that allowed to be used under another.

Fishing is a highly dispersed activity with stakeholders having a view based on personal/local experiences and business needs. This can cause partnership difficulties where information being provided by agencies is inconsistent with particular community or individual views. This is addressed as best as possible through regional officers from the managing agencies who liaise with regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to recreational fisheries. Regular meetings with industry representatives keep communication lines open, help identify and address issues and allow negotiations to occur when needed.

Stewardship among commercial fishers is promoted through the GBRMPA's Reef Guardian Fishers pilot program that currently involves nine fishing operations and up to 50 fishing vessels. These commercial fishers demonstrate leadership in their sector by going well beyond regulations to maximise the ecological sustainability of their operations. A significant example of stewardship by

commercial fishers is the self-imposed moratorium on commercial coral collection in a large part of the Keppel Islands following flooding impacts.

Significant resources have been invested in a \$9 million buyout of the net fishery. The buyout of whole licence packages within the net fishery has been successful in removing 69 large mesh net symbols as of December 2013. Staff resources dedicated to fisheries issues in all management agencies have been reducing over the last 5 years. For example full time equivalent staff numbers related to fisheries has reduced from over 300 in 2009 to less than 190 in 2012/13 in the Queensland Department of Agriculture, Fisheries and Forestry. While programs have been prioritised to achieve required outcomes, current activity and service provision is considered to be at minimum levels necessary to achieve objectives of fisheries management. It is too early to determine any effect these staffing cuts have on outputs and outcomes. It should also be noted that a review of fisheries management has commenced, with the results expected to impact on the next Outlook Report due in 2019.

The Field Management Program resources are focused on compliance, partnerships and engagement. However, funding for the Field Management Program has been static since 2008 and declining in real terms. With better resourcing, the Field Management Program's compliance and enforcement program could be more effectively implemented and progressed.

In general, the activities and programs relating to fishing have progressed in accordance with planned work programs, although management recommendations from the independent review of the East Coast Inshore Fin Fish Fishery in 2008 such as an updated harvest strategy for sharks focused on species based management of high risk species and /or species groups have had minimal progress. Several major management and research studies, extension work on bycatch reduction and the Trawl Plan review process over the last two years inform management decisions, but actual management changes to protect values and improved practices is 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. However, there are some fishing operations whose activities are believed to be largely illegal and which undermine the attainment of desired outcomes. There are particular concerns about non-compliance in the commercial netting special management areas which are critical to species of conservation concern and matters of national environmental significance such as dugongs and the Australian snubfin dolphin.

3.4 Ports

Table 8 summarises the assessment results for ports. There is a need to ensure a clear delineation between 'ports' and 'shipping' management topics. In Outlook Report 2009, ports and shipping were considered together as one topic. They have now been separated in recognition of how they may individually affect the Marine Park and the different management needs and arrangements that govern these activities in the Region. For this assessment, the topic of 'ports' is considered to encompass all aspects of the development, operations and maintenance of ports, with the exception of ship movements within ports. The topic of shipping is defined in Section 3.1.7. 'Ports' includes the construction and maintenance of port facilities (for example wharves, piers, navigation markers), dredging, dredge material disposal, the movement of harbour support vessels (but not visiting ships), and the declaration and siting of anchorages (but not the actual anchoring of ships within those anchorages or the activities of ships while at anchor). Ship loading and unloading is a 'port' activity whenever the cargo is not over the side of the ship.

In terms of environmental risks and effects relevant to the Region, 'port developments' include: dredging, to create channels and basins; land reclamation; the creation of artificial structures (for example rock walls, sheet pile walls, piles); the placement of navigation and other markers (for example buoys, spars, pylons); the siting and designation of anchorages; and the development of land-side infrastructure. Within this context, 'port operations' encompass: small harbour vessel

movements and support activities (for example tugs, lighters, line handling boats, pilot boats, and their servicing and maintenance); services to ships, such as waste reception and bunkering; managing run-off and windage losses and other spillages or releases which may introduce contaminants into the Region; and ship loading/unloading operations (port side). Port activities also encompass maintenance activities, such as: the upkeep of markers, buoys and lights; maintenance dredging; wharf/pier maintenance; and similar.

Table 8 Assessment results for ports

Ports	Effective	Mostly effective	Partially effective	Ineffective
Context		●		
Planning		○		
Inputs		○		
Processes		○		
Outputs			○	
Outcomes		●		

No trend provided because the topic was not assessed in 2009

There are 12 Great Barrier Reef trading 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 (which excludes ports at Cairns, Mourilyan, Gladstone and Port Alma). Ports represent the only industry that has been largely spatially excluded from the Marine Park — only the minor ports of Cooktown and Quintell Beach are actually located within the Marine Park.

Nevertheless, ports can and do have an effect upon the management and conservation of the processes and values of the Region, the Marine Park and the World Heritage Area, even if located external to their boundaries. GBRMPA's statutory authority and role in relation to the development and operation of ports is limited and defined by these jurisdictional boundaries. Regulation of the planning and development of Great Barrier Reef trading ports is the primary responsibility of Commonwealth and Queensland agencies, while oversight of their environmental management performance during operations is largely vested in Queensland agencies. GBRMPA's role is to guide the development and operations of ports to ensure consistency with management of the Marine Park and World Heritage Area. The aim and intention of the assessment in relation to ports is to more broadly evaluate how ports may be planned, developed and operated such that due recognition is made of these actual and potential effects upon the Region, and the interactions in this context between port regulatory agencies (Australian and Queensland governments), port operating authorities, port users and GBRMPA. This assessment does not evaluate operations or management of the ports in any 'global' sense, only to the extent of those matters pertinent to their interactions and linkages with management of the Region.

In general terms, the Great Barrier Reef trading ports appear to be well managed in an individual sense, albeit with some deficiencies in planning and development programs such as has occurred in some ports. The conclusion that ports are generally well managed is particularly apt with regard to operations, although it is recognised that planning for future port developments could be improved. The new Queensland and Great Barrier Reef Ports Strategies, and the statutory ports

master planning processes being implemented by the Queensland Government should improve this situation.

Notwithstanding these general conclusions, there could be improved intra- and inter-port coordination of environmental monitoring, reporting and research and evaluation to better develop and present a cogent assessment of the effects and influences of 'ports' (as a collective) in the Region upon its values. Improved and more comprehensive monitoring would also act to provide indications of new or emerging threats to the Region (such as any significant deterioration in water quality or the incidence of invasive marine species), or provide information on the absence of such threats. This coordination between ports should ideally be guided and influenced by the GBRMPA as the 'steward' of the Great Barrier Reef Marine Park and World Heritage Area.

Although the GBRMPA's direct regulatory role is limited, it arguably does have a role in communicating its requirements/targets to port operators and developers about how the GBRMPA may prefer certain port activities be managed to protect Great Barrier Reef Marine Park and World Heritage Area values. Accordingly and notwithstanding any direct regulatory powers available to the GBRMPA, it is evident that the most effective role for the GBRMPA to adopt in relation to ports is to establish clear guidelines and management targets for port operations, with associated guidance for the siting and development of ports, in relation to protecting the biodiversity, heritage and community benefits of the Region. This could be implemented via a cogent and comprehensive set of pragmatic guidelines and aspirational targets for the guidance of port developers and operators and the associated regulatory authorities, but to do so will require the appropriate allocation by the GBRMPA of the required resources.

Noting that 'ports' was not a separate management topic in the Outlook Report 2009, no comment on trends in management effectiveness is provided. However since the Outlook Report 2009 was released, a significantly elevated number of port development proposals and development activities in the Region has accentuated concerns, both in Australia and internationally, and caused some degree of alarm. Although some of the proposed port developments may indeed have led to new threats to the ecological processes and integrity of the Region if implemented, it is pertinent to recognise that to date port developments have not resulted in any significant, widespread deterioration of the Great Barrier Reef Marine Park or World Heritage Area. Nevertheless, some localised adverse effects are recognised. In essence, it may be summarised that port planning over the recent past may have appeared to be somewhat *ad hoc*, but that some of the feared adverse outcomes have not been realised.

3.5 Recreation (not including fishing)

The GBRMPA defines recreation as an independent visit for enjoyment that is not part of a commercial tourism operation. It includes locals recreating and a portion of traditional tourists under international definitions (for example, free and independent tourists). Fishing for recreational purposes is considered under the fishing management topic (Section 3.3 Fishing).

Table 9 summarises the assessment results for recreation. The responsibility for management of non-extractive recreation is spread across a variety of Australian and Queensland government agencies. Principal among these are the GBRMPA, the Queensland Department of National Parks, Recreation, Sport and Racing (NPRSR) and Maritime Safety Queensland.

In response to concerns of a lack of an overarching document explicitly focused on recreation to guide planning for recreational use outlined in the Outlook Report 2009, the GBRMPA prepared a Recreation Management Strategy⁹ in 2012. 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 strategy also identifies which management tools are in place for each recreation activity.

Table 9 Assessment results for recreation (not including fishing)

Recreation	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●				↔
Planning		●			↔
Inputs		●			↘
Processes		●			↘
Outputs		●			↔
Outcomes		●			↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

The values that attract large numbers of visitors are well documented, and threats and risks to those values are clearly articulated in the strategy. This work has been further refined and summarised in the Strategic Assessment draft Report 2013.⁷ The risk analysis assessment determined there were no threats from recreational use that posed a very high or high risk to the values. Cumulative impacts are recognized as an issue in the strategy, but are not specifically addressed. The condition and trend of recreation is referenced, but the strategy does not address the impacts of recreation on condition and trend of values as a whole.

A substantial increase in the numbers of visits made by recreational users has been identified.²⁷ This has been accompanied by an increase in motorised boating while the popularity of activities such as sailing, reef walking and shell collecting has declined.²⁸

Recreation in the Region is managed through a variety of tools including legislation, zoning plans, plans of management, site management, partnerships, education and community awareness. Permits are not required for low impact activities that include recreational activities. However, permits may be required for group activities in specific instances where the impact is likely to be significant. Specific policies for interaction with whales and dolphins and seabird breeding islands are also in place. However, the diffuse nature of recreation and lack of permit control means that plans of management and site planning arrangements do not provide certainty regarding where uses may occur and where impacts are likely to be acceptable.

The development and implementation of the Recreation Management Strategy⁹ is identified in the GBRMPA’s Strategic Plan, and resources are allocated in line with the objectives. Funding is concentrated mainly on determining what activities are undertaken where and on stewardship and education programs, and less on site planning, site infrastructure and recreation-specific policy development. A decrease in funding in real terms for the Field Management Program (a joint program between the Australian and Queensland governments) has led to fewer staff and resources available for the program, including a reduction in interpretation facilities and products and maintenance of infrastructure on islands and moorings in some cases.

Stakeholder engagement remains strong with the Tourism and Recreation Reef Advisory Committee consulted regularly as part of recreation planning. Recreation representatives are also included in the 12 Local Marine Advisory Committees that have produced regional brochures

specifically for recreational users. GBRMPA staff in Cairns, Mackay and Rockhampton Regional Offices interact with recreational users, particularly through Community Access Points and engagement for the Reef Guardian program which includes schools, councils, farmers and fishers. However, the diversity and informality inherent in the sector presents an ongoing challenge to engage with the majority of recreational users and to document their values and activities spatially.

Coordination between relevant agencies (the GBRMPA, NPRSR, Queensland Boating and Fisheries Patrol, Maritime Safety Queensland and Australian Water Police) to enforce Marine Park Acts, Regulations, zoning plans and plans of management is high. Some products and services such as maps and brochures are jointly prepared and presented.

The Recreation Management Strategy⁹ provides excellent data concerning the risk-based approach adopted by the GBRMPA, while identifying the major risks and threats associated with recreation and avenues to reduce those risks. However, timeframes and targets to meet the objectives will assist in assessing the performance on the strategy in achieving the desired outcomes.

3.6 Research activities

Table 10 summaries the assessment results for research activities. The Outlook reporting process and the Strategic Assessment draft Reports for both the Great Barrier Reef Region⁷ and the adjacent Coastal Zone¹⁶ have compiled the most relevant research information to inform management of the Region. These processes have resulted in a clear documentation and improved general understanding of the Reef's values and the threats to those values in and adjacent to the Region.

Table 10 Assessment results for research activities

Research	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●	●	●	●	↗
Planning	●	●	●	●	↓
Inputs	●	●	●	●	↓
Processes	●	●	●	●	↓
Outputs	●	●	●	●	↔
Outcomes	●	●	●	●	↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

The GBRMPA and the main Queensland Government management agencies are not research institutions *per se*, but they work closely with research institutions such as CSIRO, AIMS, universities and other research bodies to help focus research on key management issues for the Region, to apply existing research knowledge to management and to manage the research process and minimise any adverse impacts of research activity.

Management of research collaborations is becoming a more important component of research management within GBRMPA. Greater efforts have gone into managing research partnerships and research collaborations that are delivering benefits to Great Barrier Reef management. The GBRMPA's *Scientific information needs for the management of the Great Barrier Reef Marine Park 2009 – 2014*²⁹ identifies key information needed to better inform management of the area. This document, along with partnership agreements with key research institutions, provides the basis for research alignments that should deliver valuable outcomes for improved management. This will be supported by the Integrated Monitoring Framework³⁰ and case-by-case agreements with research institutions such as the agreement with CSIRO in relation to climate change research.

The Great Barrier Reef is known internationally as a premier site in which to conduct scientific studies. The majority of research occurs at the four major research stations at Lizard Island, Orpheus Island, One Tree Island and Heron Island. A wide range of types of low intensity research is conducted at other locations. Ironically, the Reef's reputation as one of the best-managed reef systems in the world is likely to make it a preferred site for more research which could significantly add to the pressure on existing research sites.

Research activities were generally considered to be environmentally sustainable. The Outlook Report 2009 concluded that management of research in the Region was moving towards desired outcomes, reducing risks and threats to Reef's values. The GBRMPA has a lead role in relation to the management of research activities (that is, access to the Marine Park to undertake research) within the Region. GBRMPA and Queensland agencies jointly manage the impacts of research activities on the Region's values, including extractive and observational research use, through a mix of management tools. Permits for specific research projects and accreditation of partner research institutions are the principal means of managing the potential impacts from this activity. These mechanisms cross-reference to the zoning plans and plans of management for specific geographic areas, as well as to specific policy documents on managing research and provisions for compliance and enforcement of permit conditions. However, there is limited compliance auditing of research permits. In general, research is not seen to have a large or detrimental impact on the Reef ecosystem.

However, confidence that research is environmentally sustainable is reduced by the limited knowledge of cumulative impacts of collection undertaken for research. Cumulative impacts are not routinely considered when assessing research applications. Researchers are required to submit reports detailing what they collect throughout the permit's duration. Data provided — on what species are collected and from where — are not analysed or used by managing agencies in future decision-making. Opportunity to improve the management of cumulative impacts has been identified through the development and implementation of environmental management plans for high use scientific research zones. In 2009, the development of these plans was judged to be slow, with only one plan completed and another two in draft. While little progress has been made since then, other management arrangements are in place to assist with the effective management of these zones. For example, permit conditions require consultation and negotiation between researchers and research station staff regarding the location and timing of permitted research activities. The Great Barrier Reef Marine Park Authority places most reliance on research stations themselves monitoring and managing the activities of researchers that use those facilities.

A need to more effectively manage research through the implementation of a relational database designed to capture and manage permitted use is recognised. To date, this system (now renamed the Reef Management System) is still under development and unable to inform intended and actual research take through queries and reports. This limits the ability to understand and to manage cumulative use. This is an area requiring improvement and it will be a particularly valuable tool managing scientific research zones that surround research stations where research field activities are heavily concentrated. Constraints on staff availability for management of research within GBRMPA and the reduction in field management capacity to manage research activity has meant that planned initiatives to improve research management foreshadowed in the 2009 assessment

have not been completed and management effectiveness grades for planning, inputs and processes have declined from 'effective' to 'mostly effective'.

Historically, research has been focused on biophysical systems but there has been more recent interest in socio-economic drivers. While more biophysical information is available upon which to address management of scientific research, there is limited traditional knowledge and more extensive socio-economic information is only now becoming available through the social and economic long-term monitoring program. Research proposals with the potential to impact Indigenous values are referred to the relevant Indigenous liaison staff for guidance. However, Traditional Owner participation in research within their sea country, and dissemination of research results to them, is limited (in contrast to their high level of interest in this area).

The GBRMPA has very successful and effective relationships with the research community in relation to how scientific research is managed in the Great Barrier Reef. This is shown through the accreditation process and strong partnerships with research institutions. Co-accreditation arrangements are in place to ensure consistency between jurisdictions, while permits require stakeholder and local community engagement as necessary.

The 2004 Policy on Managing Scientific Research has not been reviewed and updated and does not comprehensively take into account cumulative impacts of research. In addition, the limited impact and collection limits in the Regulations need to be revised to ensure the take limits are ecologically sustainable. These limits have not been reviewed since they came into effect on 1 July 2004. It will be important for an updated policy, coupled with information needs documentation, to set clear targets to guide the management of research of the next 25 years.

3.7 Shipping

Table 11 summarises the assessment results for shipping. It is important to clearly delineate between 'shipping' and 'ports'. In Outlook Report 2009, ports and shipping were considered together. These topics have now been separated and the topic of 'ports' is defined in Section 3.1.4. Ship loading/unloading is a 'shipping' activity while the cargo is in or over the ship, and a 'port' activity once/before the cargo has moved over the side of the ship. Under these terms, 'ports' is taken to include the declaration and siting of anchorages but not the actual anchoring of ships within those anchorages or the activities of ships while at anchor (for example ballast water discharge, treated effluent discharge), as these effects from ships in anchorages are essentially controlled by ship-based marine environment protection measures derived from international agreements.

As defined in Great Barrier Reef Marine Park Regulations, a 'ship' is considered to be a vessel greater than 50 metres in length or one carrying specialised product regardless of length,. Commercial ships sailing within the Region include, inter alia, bulk carriers, container carriers, vehicle carriers, general cargo ships, tankers, cruise ships and superyachts. Fishing vessels, small tourist charter vessels and recreational vessels are not considered as 'shipping' for the purposes of this review. Passenger ships are considered 'ships' with regard to management of the ship itself, whereas the management of passengers within those ships is addressed in this review under 'commercial marine tourism'. Management of warships and naval auxiliaries is considered under 'defence activities'.

In general terms, shipping appears to be well regulated and well managed within the Region. By comparison with other areas of significance to world shipping, the Region is effectively managed and is furnished with an extensive suite of controls, risk reduction and risk response measures, for shipping activity levels which are relatively modest by comparison with many other areas globally, albeit over a much larger area of interest and within an environment of unique significance. Although shipping incidents will inevitably occur (for example loss of propulsion, navigation error), both the rate of incidence and the potential consequences of casualty are attenuated to a significant extent by improvements in technology, constantly advancing ship design and marine environment protection and safety requirements (for example protected fuel tanks and electronic aids to

navigation), and other controls (for example REEFVTS) and enforcement/compliance mechanisms (for example Port State Control inspections and ship vetting). These measures collectively act such that increases in shipping numbers should not result in a commensurate linear increase in ship environmental incidents. This conclusion is supported by the declining rate of ship groundings in the Region since the Outlook Report 2009. Within this context it is critical that control and emergency response arrangements effectively anticipate, and pre-empt, changes in shipping activity levels and risk profiles. Aspects of shipping-related management considered to be under-resourced include restoration/rehabilitation of damaged areas following groundings, and control, surveillance and monitoring for introduced marine species. As 'shipping' was not a separate management topic in the Outlook Report 2009, no comment on trends in management effectiveness is provided.

Table 11 Assessment results for shipping

Shipping	Effective	Mostly effective	Partially effective	Ineffective
Context		●		
Planning		●		
Inputs		●		
Processes		●		
Outputs		●		
Outcomes	●			

No trend provided because the topic was not assessed in 2009

Although the likelihood of single, catastrophic events is effectively risk-managed, chronic, low-level effects are also of potential concern, particularly with regard to the cumulative effects of aspects such as leaching/loss of biocidal anti-fouling paints, wake/turbulence effects, and possibly also altered light and underwater noise regimes. There is also the possibility of some adverse aesthetic effects related to shipping activities in remote areas that may warrant further assessment, but the need for such evaluations in designated port/anchorage areas is less obvious. With the recovering humpback whale population there is also the possibility of more regular, albeit, likely infrequent, ship strike, but possibly of less individual population significance owing to the greater population size and by extension its ability to absorb such incidents without lasting detriment.

Those agencies with responsibility for managing shipping in the Region are considered to be generally well equipped to undertake the required tasks, noting the critical importance of effective planning and pro-active implementation to anticipate forecast increases/changes in shipping activity. GBRMPA works collaboratively with the agencies with key management responsibilities for shipping, particularly the Australian Maritime Safety Authority (AMSA) and Maritime Safety Queensland (MSQ), and has contributed to the development of the North-East Shipping Management Plan. GBRMPA also contributes to response actions following major environmental incidents, and shipping within the Great Barrier Reef is controlled via Great Barrier Reef Marine Park Regulations and Zoning Plans, among other regulations. It is recognised, however, that GBRMPA is not the primary shipping management agency, but its input and influence are nevertheless critical to ensure that shipping is managed in a sustainable manner and consistent with management objectives for the Marine Park and World Heritage Area. To this end, it is considered important that GBRMPA develops a cogent, informed set of management objectives and implementation plans with regard to shipping, so that finite resources can be optimally directed

to where risks actually exist and/or outcomes can be effectively influenced by the GBRMPA. This approach should be implemented in collaboration with the relevant regulatory agencies, primarily AMSA and MSQ, and including other agencies such as the Commonwealth Department of Agriculture.

3.8 Traditional use of marine resources

Table 12 summarises the assessment results for traditional use of marine resources. Aboriginal and Torres Strait Islander peoples are the Traditional Owners of the Region. There are more than 70 Aboriginal and Torres Strait Islander Traditional Owner clan groups that maintain heritage values for their land and sea country. Traditional use of marine resources is the undertaking of activities as part of Aboriginal and Torres Strait Islander people's cultures, customs or traditions for the purpose of satisfying personal, domestic or communal needs. Recognised entitlements are enshrined in the *Native Title Act 1993*.

Traditional use of marine resources is primarily managed through Traditional Use of Marine Resources Agreements (TUMRAs). The framework for TUMRAs complements existing community-based measures developed by some Traditional Owner groups to manage their use of some of these resources. These agreements promote the sustainable use of threatened species such as dugongs and green turtles and incorporate management of other species and ecosystems such as seagrass, oyster beds and shellfish within the Marine Park. The GBRMPA and Queensland Government jointly accredit TUMRAs. There are currently seven (April 2014) TUMRAs and one Indigenous Land Use Agreement covering around 13 per cent of the Great Barrier Reef, engaging 14 Traditional Owner clan groups. One TUMRA has lapsed since the Outlook Report 2009.

Table 12 Assessment results for traditional use of marine resources

Traditional use of marine resources	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●				↗
Planning	●				↑
Inputs		●			↑
Processes		●			↗
Outputs		●			↔
Outcomes	●				↑

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

Knowledge about the values relevant to traditional use of marine resources includes biodiversity information about dugong, turtles, and other marine species. Understanding these values has been articulated in the *Great Barrier Reef Strategic Assessment draft Report*⁷ and the *Biodiversity Conservation Strategy*.² Understanding the condition and trend of species such as dugongs and turtles has improved with vulnerability assessments undertaken for those species³¹. Information on the direct and indirect impacts and cumulative impacts associated with traditional use of marine resources are not widely available and therefore not well understood nor considered across

management. However, any impacts attributable to traditional use of marine resources undertaken according to customs and traditions are considered to have only very minor effects.

Ascertaining Traditional Owners who can speak for their country can be difficult. One of the benefits of the TUMRA program is the relationship between sea country and a Traditional Owner group that is identified and documented as part of the TUMRA development process. The 2008-2013 Reef Rescue Land and Sea Country Indigenous Partnership Program (the Reef Rescue program) included a program for the development and support of TUMRAs. The initial tranche of the program engaged with over 80 per cent of the Region's Traditional Owner groups and has been very successful, achieving its aims and objectives over the past five years, and has been extended for an additional five years (2013-2018).

Aspiration statements, clear objectives and implementation plans are part of the Traditional use of marine resources agreement package, although the implementation plans and the reporting on outcomes are often not made publically available. While consultation within Aboriginal communities is required for the TUMRAs to be finalised, the effectiveness of engagement of broader stakeholders and local communities is highly variable.

Under the Reef Rescue program, the TUMRA program has been successful in meeting its scheduled milestones. Financial and staffing resources for effective management of Traditional Use have been extended until 2018 under the Australian Government Reef Rescue program. The success of TUMRAs is related to this funding. Many of the staff working in this area are Indigenous, however developing the skill sets and expertise of all agency staff is recognised as critical. There is still limited capacity to gather relevant data, especially related to socio-economic drivers and traditional knowledge where this has been lost from the community.

The pace of negotiation and implementation of TUMRAs is driven largely by Traditional Owners and their local capacity rather than by government or agency agendas and timelines. Although funding has been provided through the Reef Rescue Program, there remains limited capacity within management agencies to deal with development of multiple TUMRAs simultaneously. The knowledge base in agencies relevant to traditional use has increased in recent years with the on-going development of the Traditional Owner Information System, including Traditional Owner Profiles, Story Place and the Cultural Heritage Databases.

High levels of sensitivity about the collection, storage and accessibility of traditional knowledge continue. Traditional Use of Marine Resources Agreements and Sea Country Partnerships are important mechanisms for building trust and developing protocols for appropriate use of traditional knowledge across the spectrum of Great Barrier Reef management decisions.

4. Assessment of managing external factors influencing the Region

4.1 Climate change

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 Region. 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.

Table 13 summarises the assessment results for climate change. Climate policy and resultant mitigation and adaptation programs are currently in a state of flux at the national level. Within Queensland, specific government focus and action on climate change has diminished with the disbanding of the Office of Climate Change and significant reductions in staffing and expertise relevant to climate change within the government.

Table 13 Assessment results for climate change

Climate change	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context		●			↓
Planning			○		↓
Inputs		○			↘
Processes			○		↓
Outputs		●			↔
Outcomes				●	↓

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

The Great Barrier Reef Marine Park Authority (GBRMPA) has a lead role in measuring and facilitating awareness of the impacts from climate change and extreme weather; leading and promoting adaptation; and building resilience in the Marine Park. GBRMPA has an advisory role to other agencies in relation to adaptation to climate change and extreme weather in the Region but has no jurisdictional responsibility for addressing climate change in the broad sense. Primary responsibility for national responses to climate change rests with the Commonwealth Department of the Environment. However, GBRMPA contributes significantly to the development of international best practice for managing adaptation responses to climate change and extreme weather issues as they relate to the Great Barrier Reef ecosystem. This is chiefly done through research and monitoring, and partnerships with research institutions, government agencies and stakeholder groups as well as education, community awareness and stakeholder engagement programs.

The review of the *Climate Change Action Plan 2007-2012* concluded that the work undertaken by managers over this five years plan had placed GBRMPA at the leading edge of efforts to understand, test and implement adaptation options for the Great Barrier Reef.³² The review was used to inform the development of the next iteration of the climate strategy and action plan. However, since this next iteration was released in 2012⁵ the funding for the climate change adaptation program has been cut. The GBRMPA is still reviewing the situation and considering how to progress with climate change adaptation strategy.

The *Climate Change Adaptation Strategy and Action Plan 2012–2017*⁵ (the Climate Change Adaptation Strategy) acknowledges the important role GBRMPA plays in informing national and international climate policy and providing knowledge to support effective management of inshore areas. However, the direct management role of GBRMPA is statutorily limited, requiring a focus on ecosystem-based adaptation to increase the resilience of the Reef, especially by reducing impacts from other sources such as land-based sediments and nutrients. Assessing the effectiveness of management agencies in this role is challenging, as so much depends on the actions of others, especially in regard to the effectiveness of mitigation measures taken at national and international level and the mitigation and adaptation measures undertaken in adjacent coastal areas.

The management agencies' planning initiatives are focused on enhancing the capacity of ecological, socio-economic and management systems to adapt to change in ecological and social variables. Specialist expertise exists within GBRMPA to coordinate efforts in this area, as well to facilitate national, regional and international collaboration which is necessary to address the complex issues involved. Climate change considerations have now been incorporated into many business areas across GBRMPA, rather than being confined to one work unit. Nevertheless, the absence of a section with a direct climate change focus and a significant refocus of effort on climate change by the Queensland Government with loss of staff and associated research and management contributed to a decline in the assessment of the effectiveness of inputs to this area of work compared to Outlook Report 2009 although not currently to such an extent that it resulted in a decline of overall grade for this element.

Work completed under the *Great Barrier Reef Climate Change Action Plan 2007-2012*³³ has included raising awareness of the implications of climate change for the Great Barrier Reef and the ecosystem services it provides. Effort has also been focused on building interest in adaptation planning as a way to reduce future risks from climate change and minimise its impact on the environment. This has included work with reef-dependent industries such as tourism and fishing, as well as communities, and considers planning and adaptation actions at all levels from individuals and businesses through to managers and government.

Vulnerability assessments for specific functions and activities that have the potential to impact on the Region's values continue to provide good contextual information for management of climate change implications. The 2009 assessment for the Outlook Report noted that managers and key community stakeholders recognised that while climate change drivers and influences are largely global in nature, regional and local activities give rise to specific vulnerabilities that require action.

Climate change plans and strategies were in place in 2009 and the focus has now moved to implementing the Climate Change Adaptation Strategy. This aims to translate objectives into specific policies and measurable actions for on-ground management by GBRMPA to increase the resilience of the Reef ecosystem. Specific threats such as increasing sea temperatures, ocean acidification, increased severity of storm events and associated changes to freshwater inputs, currents and connectivity have been identified as matters to be addressed by adaptation initiatives that seek to minimise these impacts on Great Barrier Reef species, ecosystems and ecological processes. A number of GBRMPA's management initiatives contribute to offsetting the impacts of climate change by reducing risks from other stressors. The GBRMPA's climate change work 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. From a review of the supporting evidence, implementation and evaluation of the Climate Change Adaptation Strategy and Action Plan appears to be on schedule.

While direct and indirect impacts of activities related to climate change and extreme weather are understood by managers through studies such as the *Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change 2012*,²⁶ many knowledge gaps remain. Risk-based approaches have been applied in adaptation work with a target of developing adaptation plans for at least five of the most vulnerable species and habitats by 2016. The amendment of policy documents and procedures, along with development of practical guidelines for relevant permit-holders and applicants, have been identified as priorities for attention but few have been amended at this stage.

Work continues on identifying the gaps in available biophysical information. The particular need to clarify socio-economic implications is also recognised and is being addressed in collaboration with CSIRO through the National Environmental Research Program-funded social and economic long-term monitoring program.²⁰

Climate change work was instrumental in consideration of consequential and cumulative impacts on the Region's values. These types of impacts are now becoming much better understood. Critical elements of current condition and trend cannot be confidently determined and monitored by managers. Efforts continue, including work with Traditional Owners, to apply available traditional knowledge to consider climate change implications, particularly through Traditional Use of Marine Resource Agreements.

Community engagement relating to climate change continues through initiatives such as Eye on the Reef and the Reef Guardian program which includes schools, councils, fishers and farmers. Work under the Climate Change Action Plan 2007–2012³³ contributed to substantially strengthened partnerships with key sectors of the commercial fishing industry and the marine tourism industry. An incident response framework was developed in 2011, in consultation with stakeholders, and includes:

- coral bleaching response plan
- cyclone response plan
- coral disease response plan
- crown-of-thorns starfish response plan.

The Reef Rescue program has funded local actions to address degradation of water quality. Case studies of actions that can enhance the Reef's resilience to climate change and extreme weather are being documented.

Despite significant progress in building the ecological resilience of the Reef, and the social and economic resilience of the Region's industries, the Reef and its industries are not invulnerable to the impacts of extreme weather. A series of extreme weather events including cyclones, floods and heatwaves between 2002 and 2011 caused significant impacts to corals, seagrasses, dugong and green turtles, as well as the tourism and fishing industries. This decade of extreme weather provided an indication of what is to come if the planet's climate continues to change at the current rate. The future success of work in adapting to climate change and extreme weather is dependent on successful state, national and global efforts to mitigate climate change.

The planned and systematic approach being applied gives confidence that the GBRMPA is achieving all that might be reasonably expected to reduce the threats posed to matters of national environmental significance from climate change and extreme weather in the Great Barrier Reef Region. However, in spite of good systems and processes, the long-term trend for Great Barrier Reef ecosystems is still poor,⁷ and the extent to which specific initiatives can effectively address particular problems will only become clear over time. This situation highlights the importance of robust performance monitoring and adaptive management.

4.2 Coastal development

Table 14 summarises the assessment results for coastal development. Management of coastal development is mainly through the application of Queensland Government legislation and policy. Since Outlook Report 2009, several significant changes have been made to Queensland’s primary planning and development framework under the *Sustainable Planning Act 2009* (SPA). The SPA has been amended to change the hierarchy between planning instruments resulting in the State Planning Policy (SPP) now being superior to regional plans and local plans. Previously regional plans were the superior instrument. The single SPP supersedes the Coastal Protection State Planning Policy developed by the Queensland Government following the Outlook Report 2009.

Table 14 Assessment results for coastal development

Coastal development	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context		●			↗
Planning			●		↗
Inputs			●		↔
Processes			●		↔
Outputs			●		↔
Outcomes			●		↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

A State Planning Policy for biodiversity has been established within the single SPP that aims to protect matters of environmental significance across the State.¹⁰ In summary, the SPP requires that when planning is undertaken or development proposals are assessed, significant adverse impacts on matters of state environmental significance (MSES) are to be avoided, or minimised and offset. MSES trigger mapping supports policy implementation. Property-scale mapping is available on-line and the digital data can be obtained free of charge. Additionally, guidelines support the policies by including model assessment codes and further explanation on how the policy outcomes can be achieved at regional and local level.

The SPP also includes a state interest titled the Coastal Environment. It provides a policy direction regarding coastal development, including: scenic amenity in the coastal zone, coastal-dependent development, public access to the shoreline, tidal work that is private marine development, reclamation of tidal land and canals and dry land marinas. The single SPP supersedes the Coastal Protection State Planning Policy developed by the Queensland Government following the 2009 Outlook Report 2009.

Under the revised framework, regional plans only deal with State interests where there is considered to be conflicting interests at the regional level. Regional plans continue to apply until they are reviewed. Most local councils are in the process of preparing new or substantially revised

planning schemes that meet the requirements of the SPP. Until then, they must apply the SPP in the assessment of development proposals.

New and amended planning schemes are subject to State interest reviews by relevant Queensland departments and approved by the Minister responsible for SPA. Other policies of significance include the natural hazards policy, water quality policy and heritage protection policy. The new policy framework has not been in effect long enough for the impacts on coastal development to be assessed.

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

The Queensland's coastal zone strategic assessment was undertaken in 2013. "*The purpose of Queensland Government's proposed Program is to ensure that any development in the Great Barrier Reef coastal zone occurs in a sustainable manner and that unacceptable impacts on matters of national environmental significance do not occur. By considering matters of national environmental significance (MNES) early in the planning and development process it is the aspiration of both the Queensland and Australian governments that this Program will result in further removal of administrative burden by removing the need for project by project assessment and approval by the Australian Government.*"⁸

The provisions of the Commonwealth EPBC Act and, in some cases, the *Great Barrier Reef Marine Park Act 1975* (the Act) also serve to address the environmental impacts of some coastal works.

As a result of the Outlook Report 2009, the GBRMPA has developed a comprehensive document, *Informing the Outlook for the Great Barrier Reef Coastal Ecosystems*⁶ which assesses the pressures affecting coastal ecosystems that have the potential to influence the Reef's health and resilience. This document provides an effective context for management as it describes the functioning, as well as the threats, pressures, risks and trends of the Reef's coastal ecosystems.

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. The consequential and cumulative impacts require better understanding and monitoring. Vulnerability assessments for each coastal ecosystems have also been undertaken.

Targets and performance measures for coastal ecosystems are included in the Biodiversity Conservation Strategy,² but they lack outcome targets, and cannot address coastal development due to jurisdictional responsibilities. The Reef Water Quality Protection Plan³ (Reef Plan), which focuses on land-based run-off, also contains a number of performance measures relating to coastal ecosystems, such as wetlands and riparian vegetation. Stakeholder engagement in this process remains very effective.

Stakeholder engagement on coastal ecosystem management is increasing. The Reef Rescue program grants to improve land management practices and has formed strong collaborations and partnerships with many stakeholders in the reef catchments. Additionally, partnerships continue to grow through the Reef Guardian Farmers stewardship program. Coastal ecosystems management is also the focus of coastal Reef Guardian Councils and Schools, and is regularly discussed at Local Marine Advisory Committees and Reef Advisory Committees.

The work done in the *Great Barrier Reef Biodiversity Conservation Strategy*² and *Informing the Outlook for Great Barrier Reef coastal ecosystems*⁶ suggests the long-term future condition and trend for coastal ecosystems is very poor if joint management action is not taken soon to halt and reverse the decline in inshore and coastal ecosystems, particularly south of Port Douglas.

It is too early to comment on the impact of the new State Planning Policy to assist in the appropriate management of the coastal development to protect the Great Barrier Reef. There is evidence of understanding global and national development pressures but there is a lack of a consistent set of goals and objectives to guide coastal development across all the agencies and sectors involved.

4.3 Land-based run-off

Table 15 summarises the assessment results for land-based run-off. Land-based run-off associated with agricultural practices is recognised as the most significant contribution to water quality decline in the Region.³⁴

Table 15 Assessment results for land-based run-off

	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●				↔
Planning	●				↑
Inputs		●			↗
Processes	●				↑
Outputs	●				↑
Outcomes			●		↔

- ↑ Trend since 2009 has been an upwards change in grade
- ↗ Trend since 2009 is increasing but has not caused an upwards grade change
- ↔ Grade has remained stable compared to 2009, with no major trends
- ↘ Trend since 2009 is decreasing but has not caused a downwards grade change
- ↓ Trend since 2009 has been an downwards change in grade

The overall legislative mandate for the management of land-based run-off affecting water quality in the Great Barrier Reef catchment falls to the Queensland Government. Healthy Water Management Plans are a legislative tool that implements water quality actions. However, there are major programs and funding in place to reduce land-based run-off through improved land management practices, as well as research and monitoring programs to assess the effectiveness of the programs, and assist with targeting areas and actions. These on-ground activities, extension, education and community awareness, stewardship and best practice activities associated with reducing land-based run-off are managed through partnerships between the Queensland Government, the GBRMPA, the Commonwealth Department of the Environment, regional Natural Resource Management organisations, land holders and industry groups.

The assessment for management effectiveness undertaken for the Outlook Report 2009 concluded there was slow progress being made towards the attainment of the desired outcomes and to reducing the risks and threats to the Reef's values. The Outlook Report 2009 recognised the positive work that was being done through the Reef Water Quality Protection Plan but highlighted the little evidence of change through a lack of monitoring, and the lack of delivery within the planning framework. This has improved significantly with the review and updating of the Reef Plan (Reef Plan 2009 and 2013), and development of complementary initiatives through Australian Government Reef Rescue programs (Caring for Country) and the Queensland Government's

amendments to the *Environmental Protection Act 1994* (Reef Regulations) and the subsequent transition to Best Management Practice programs.

The values that underpin the matters relevant to water quality are well understood by managers. While many of the direct and indirect impacts of poor water quality as a result of land-based run-off are well known, knowledge is not as comprehensive concerning the consequential and cumulative impacts of water quality, although this is improving as demonstrated by the Scientific Consensus Statement.³⁴ Condition and trend of values such as annual average sediment load, total nitrogen load, dissolved nitrogen and pesticide loads associated with land-based run-off are measured through the Paddock to Reef Monitoring and Modelling program, which includes the Marine Monitoring Program and measuring the actions of land managers aimed at reducing land-based run-off.

These monitoring programs have shown that the estimated average pollutant loads in land-based run-off have declined since 2009. These reductions have been attributed to landholders improving their land management practises. This attribution has been made by various research organisations participating in the on-ground monitoring activities and reef related research through Paddock to Reef, Reef Rescue Research and Development program, Queensland Government Reef Plan Research and Development and NERP, including AIMS, James Cook University, CSIRO and University of Queensland. However, the marine condition has declined in recent years due to the impact of larger and more frequent floods and episodic events in the adjacent catchments. Improvements are being made to the quality of water entering the Reef; however there will be significant time lags between land management practice change and seeing improved condition of the Reef.

Since the Outlook Report 2009, regular reviews of Reef Plan have provided better focus and direction for managers, including clear targets for water quality and land management improvement. It is focused on outcomes and takes into account new policy documents and regulatory frameworks. Measureable targets, improved accountability, and coordinated monitoring, evaluation and reporting underpin it. Targets are focused on short and medium-term outcomes for land-based run-off and land management.

Water quality guidelines and the development of a Coastal Ecosystems Assessment Framework by the GBRMPA set limits for water entering the Marine Park and provide a framework for assessment of ecosystem services within the basins located in the catchment with a focus on improving the health and resilience of the Reef. 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 grants under the Reef Rescue (caring for Country) program require regular reporting and evaluation through the Monitoring, Evaluation, Reporting and Improvement framework.

Natural Resource Management Groups, key stakeholders and industry in addition to Australian and Queensland governments are critical to success of the Reef Plan, Water Quality Improvement Plans, Reef Rescue (2008-2013), Reef Program and the Best Management Practice programs all of which result in reducing land-based run-off. The GBRMPA has expanded the Reef Guardians Program (which commenced with schools and local councils), to include farmers, graziers and fishers.

The Australian Government has committed more than \$200 million to the Reef Rescue Program (2008-2013) and a further \$142 million for 2013-2018. This expanded program includes water quality grants and funding for partnerships to improve the voluntary uptake of improved land management practices to reduce discharge of sediments, nutrient and pesticides into the Great Barrier Reef lagoon; systems repair and urban grants for wetland, riparian and mangrove protection and restoration projects. Water Quality Improvement Plans are to be updated by three of the six reef catchment Natural Resource Management bodies. These look at integrating existing actions and developing a strategic plan for future investment.

The Queensland Government committed \$175 million under Reef Plan 2009, \$50 million of which was directed to industry extension and the implementation of amendments to the EPBC Act to regulate sugarcane growing and cattle grazing in the highest risk Great Barrier Reef catchments. The strict requirements regulating the calculation and application of optimum rates of nitrogen and phosphorous to sugarcane crops and the regulation of Photosystem II (PSII) herbicides, and the development of cane and grazing Environmental Risk Management Plans drove a step change in the development of Best Management Practice in managing run-off water quality. While the Queensland and Australian governments have allocated significant resources into understanding the water quality issues from a biophysical aspect, information is still limited with respect to the socio-economic impact of loss of ecosystem services from poor water quality. The socio-economic long-term monitoring program (SELTMP) will assist managers in understanding people's values and perceptions in relation to land-based run-off.

The impacts of land-based run-off are considered one of the greatest threats to the Great Barrier Reef. The work being undertaken by the Australian and Queensland governments, in addition to Natural Resource Management groups, industry and stakeholders in the implementation of the Reef Plan and other programs including the water quality improvement plans, is to be commended. The monitoring programs and improved knowledge about the impacts of land-based run-off are also world class. The processes and outputs of the program have improved considerably since the Outlook Report 2009, and it is expected that improvements in the outcomes will be evident in the coming years with the on-going implementation of the Reef Plan.

5. Assessment of managing to protect the Region’s values

5.1 Biodiversity values

Table 16 summarises the assessment for protecting biodiversity values. Protection of the biodiversity of the Great Barrier Reef is the primary objective for much of the management action undertaken in the Great Barrier Reef and its catchment. The Outlook Report process and the strategic assessments of the Region⁷ and the coastal zone¹⁰ have focused attention on the biodiversity values and threats to values in the Great Barrier Reef and associated studies undertaken in collaboration with research and academic institutions have increased documentation and understanding of this issue.

Management is undertaken using an array of measures, principally zoning plans, but also incorporating management plans, permit assessments, site management, education and best practices. A potentially complex and confusing management regime has been simplified through inter-governmental coordination, for example, the zoning plans and joint marine parks permits. Depending on the jurisdiction that applies, the lead agency is the Great Barrier Reef Marine Park Authority (GBRMPA), the Queensland Parks and Wildlife Service or the Queensland Department of Environment and Heritage Protection. The Department of the Environment, the Australian Quarantine Inspection Service and the Queensland Department of Agriculture, Fisheries and Forestry also have some management responsibilities.

Evidence from long term monitoring indicates a 50 per cent decline in coral cover on the Great Barrier Reef between 1985 and 2012¹³ and is cause for considerable concern. There is no explicit strategy and action plan to address this degradation. The extensive degradation in the southern inshore region of the Great Barrier Reef highlights the importance of considering cumulative and consequential impacts, which are currently less well understood by managers. Work on development of an integrated monitoring framework³⁰ and on assessment of cumulative impacts³⁵ is beginning to address this deficiency.

Table 16 Assessment results for biodiversity values

Biodiversity values	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context	●				↔
Planning		●			↔
Inputs		●			↔
Processes		●			↔
Outputs		●			↔
Outcomes		●			↘

↑ Trend since 2009 has been an upwards change in grade

↗ Trend since 2009 is increasing but has not caused an upwards grade change

↔ Grade has remained stable compared to 2009, with no major trends

↘ Trend since 2009 is decreasing but has not caused a downwards grade change

↓ Trend since 2009 has been an downwards change in grade

Threat abatement plans, recovery plans and specific on-the-water actions (for example Reef Protection Markers, Special Management Areas and Dugong Protection Areas) are in place to address individual biodiversity issues. With regard to threatened species (such as dugongs and some marine turtles), these plans and actions have had limited effect in stabilising populations, as recovery is at best weak or absent. Status and trend assessments indicate that more species are continuing to decline than have stabilised or are increasing, although status is uncertain for many groups because of lack of data. The assessment of outcomes undertaken in this report covers biophysical, social, economic and community outcomes and so the overall rating is an amalgam across all these areas. Considered alone the assessment of outcomes for the biophysical aspects of protecting biodiversity values would indicate that this is only partially effective.

The information base for biodiversity management continues to improve through both scientific research in universities and research organisations and the compilation and assessment of information by GBRMPA staff (for example vulnerability assessments and assessment of status of habitats and species). Considerable financial resources are allocated to improving biodiversity knowledge and increasing understanding of factors impacting on biodiversity and ecosystem processes through institutions such as AIMS, Regional Natural Resource Management bodies, the Great Barrier Reef Foundation and other Australian and Queensland Government programs. Chapter 7 of the Great Barrier Reef Strategic Assessment draft Report⁷ provides a compilation of existing knowledge on status and trends for key species and habitats. Gaps in knowledge, for example some specific plant and animal groups, habitats and ecosystems, are well recognised. Relevant Traditional Owner knowledge is often not available or accessible to managers.

Planning for biodiversity management has been significantly improved since the Outlook Report 2009 through preparation of the Biodiversity Conservation Strategy², although targets in the plan tend to be process and output focused and should be complemented by additional outcome focused targets. Desired outcomes for species groups and habitats and some preliminary draft targets together with a commitment to a collaborative process for setting and refining targets has have been outlined in the *Great Barrier Reef Region Strategic Assessment draft Program Report*.¹⁴ Once developed, these targets will provide a much more explicit basis for planning biodiversity management programs. On a Reef-wide scale, the zoning plan which came into effect in 2004, and was matched in the adjacent Great Barrier Reef Coast Marine Park, is the most significant action taken to enhance biodiversity values. It has provided a robust framework and is already demonstrating positive results. However, the zoning provisions only address protecting biodiversity values at a broad level and, while some threats are addressed by other measures, major threats to biodiversity, such as climate change, coastal development and catchment run-off are largely not addressed by either the zoning provisions or individual measures to protect biodiversity values. There is a need for a review of cross-jurisdictional mechanisms required to address biodiversity protection measures in areas such as planning, coastal development and fisheries management in order to restore ecosystem health to the southern inshore zone in the Region.

Major risks and threats to biodiversity values are well documented and risk assessment and management procedures are in place for the major threats. Vulnerability assessments are in the process of being prepared for key species and habitats and these provide comprehensive documentation of risks to biodiversity values and mitigation measures within the Region. Reallocation of Great Barrier Reef Marine Park effort in areas relevant to ecosystem and species management has enabled increased focus on work such as the Biodiversity Conservation Strategy² and vulnerability assessments. However, resources for implementation of actions from this work are yet to be identified. There remains limited tracking of either the resource allocations specifically targeting biodiversity objectives or the outputs and outcomes resulting from management actions. The capacity of the field management program to address

biodiversity management and natural resource management issues in marine and island environment is very limited and decreasing with closure of bases.

Key stakeholders in protecting biodiversity values have been identified and are generally well known to managers especially through Reef Advisory Committees, Local Marine Advisory Committees and other consultative mechanisms.

5.2 Heritage values

An assessment of heritage values of the Region was introduced as a legislative requirement for the Outlook Report in late 2013. The requirement reflects the 2008 amendment of the Great Barrier Reef Marine Park Act to include protection and conservation of the heritage values of the Region in its main object and responds to an urging by the World Heritage Committee to include such as assessment. Table 17 summarises the assessment for heritage.

As defined in the Act, for the purposes of the Outlook Report, the heritage values of the Region include:

- Commonwealth heritage values — the values of a place that are specified in its placement on the Commonwealth Heritage List
- other heritage values — a place’s natural and cultural environment having aesthetic, historic, scientific or social significance, or other significance, for current and future generations of Australians
- Indigenous heritage values — the heritage values of a place that are of significance to Indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history
- national heritage values — the values of a place that are specified in its placement on the National Heritage List
- world heritage values — the natural heritage and cultural heritage of a property that is of outstanding universal value.

Table 17 Assessment results for heritage

Indigenous heritage	Effective	Mostly effective	Partially effective	Ineffective	Trend
Context		●			↓
Planning		◐			↓
Inputs		●			↔
Processes		◐			↘
Outputs		●			↘
Outcomes		●			↘

↑ Trend since 2009 has been an upwards change in grade

↗ Trend since 2009 is increasing but has not caused an upwards grade change

↔ Grade has remained stable compared to 2009, with no major trends

↘ Trend since 2009 is decreasing but has not caused a downwards grade change

↓ Trend since 2009 has been an downwards change in grade

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. Natural heritage values were considered under the assessment of biodiversity values. The areas of heritage were considered separately, and the scores then combined to reach a summarised assessment for heritage. This differs from Outlook Report 2009, when all aspects of heritage were considered together. Indigenous heritage has a higher profile for this assessment. Traditional use of marine resources is considered under a separate heading.

The GBRMPA 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 Commonwealth 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.

A comprehensive strategic assessment has been undertaken under the EPBC Act as part of the response to the World Heritage Committee's concerns regarding the development impacts on the World Heritage Area.^{7,16} The development of the strategic assessment report has considerably strengthened the understanding of the world heritage, the historic heritage, and the Indigenous heritage values associated with the Great Barrier Reef.⁷

There is generally a reasonable understanding by managers of the Region's values relevant to historic issues. The consequential and cumulative impacts associated with historic heritage are less well understood. Information on condition and trend has improved through the 2010–2011 audit of Commonwealth islands' historic heritage. Little is known about the condition and trend of shipwrecks, World War II sites, or heritage places such as Endeavour Reef.

Knowledge of Indigenous values is improving with the Reef Rescue Land and Sea Country Indigenous Partnerships Program and the development of Traditional Use of Marine Resource Agreements. However, direct and indirect impacts, cumulative impacts associated with the less tangible Indigenous heritage such as traditional knowledge and maintenance of cultural practice are not widely available and therefore not well understood nor considered by managers. The importance of the Reef in Indigenous economies is also not well understood and not incorporated fully into management.

The Great Barrier Reef Marine Park Act and Regulations provide the legislative power for the protection of all historic heritage values and consideration of potential impacts to heritage through the permitting process. There are also strong drivers for heritage management under the Commonwealth EPBC Act and World Heritage obligations. The *Queensland Heritage Act (1992)* also protects sites of cultural heritage, including shipwrecks and lighthouses under Queensland jurisdiction. These obligations also drive consistency of implementation of historic heritage management across agencies.

The *Great Barrier Reef Marine Park Heritage Strategy*,¹⁵ endorsed in 2005, provides guidance for protection of the Marine Park's heritage values, including Indigenous heritage, through a range of planning instruments and policies. Historic shipwrecks are protected through specific legislation and entry controls. The strategy identifies actions but does not set a timetable for implementation or indicate relative priorities. Risks and threats have been more explicitly addressed in new periodic reporting processes for World Heritage sites. The strategy has not been updated to effectively address major pressures and drivers currently impacting on historic or Indigenous heritage. This is the substantive reason why the planning grading has declined since Outlook Report 2009.

Statutory heritage management plans for two light stations 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.

A more relevant program for considering Indigenous cultural heritage is the Reef Rescue Land and Sea Country Indigenous Partnerships Program, which articulates a set of objectives and targets to ensure “the continued use, support and reinvigoration of traditional ecological knowledge to underpin biodiversity conservation.”³⁶ This program has finalised its first five-year evaluation, and the program has been extended for an additional five years to 2018. The GBRMPA’s Corporate Strategic Plan also includes specific objectives concerning working with Aboriginal and Torres Strait Islanders to take into account traditional affiliations, culture, heritage values and rights of management in the Marine Park.

While progress has been made in engaging with key Indigenous stakeholders in the Great Barrier Reef, 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 strategy should include protocols for managing culturally sensitive information within the GBRMPA and externally.

The GBRMPA is currently developing a heritage register that will capture all values relevant to historic heritage. The register will assist managers and the community in knowing the location of and an understanding of heritage values.

The protection, presentation and transmission of the outstanding universal value of the Great Barrier Reef World Heritage Area is 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 and threats and management progress is closely monitored and annually reported through State Party reports.

5.3 Community benefits of the environment

Table 18 summarises the assessment results for community benefits of the environment. ‘Community benefits of the environment’ is a new topic for consideration for Outlook Report 2014. The Strategic Assessment draft Report⁷ explicitly recognised the community benefits that are derived from the environment. Both the EPBC Act and the *Great Barrier Reef Marine Park Act 1975* and *Marine Parks Act 2004* (Qld) include people and communities as part of the definition of environment.

Table 18 Assessment results for community benefits of the environment

Community benefits of the environment	Effective	Mostly effective	Partially effective	Ineffective
Context		●		
Planning		●		
Inputs			○	
Processes			○	
Outputs		●		
Outcomes		●		

No trend provided because the topic was not assessed in 2009

The Millennium Ecosystem Assessment also provided clear evidence of the links between healthy ecosystems and human wellbeing.³⁷ Community benefits of the Region encompass socio-economic aspects such as employment and income, in addition to less tangible attributes such as understanding, appreciation, enjoyment, personal connection, health benefits and access to the Reef. Many of these attributes are values-based.

The GBRMPA, together with Commonwealth Departments and the Queensland Government, works to adopt an integrated approach to the management of the social, economic and environmental aspects of the Region. Management is undertaken using a range of measures, including stewardship and best practice, legislation, zoning plans, permits and site infrastructure. Development of the *Great Barrier Reef Region Strategic Assessment draft Report* considerably strengthened understanding of community benefits derived from the Region, including their current condition and threats to them.⁷ 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.

There is likely to be increasing conflict between economic benefits of the Reef — associated with port and coastal development — and the personal, recreational and value-based benefits. The consequential and cumulative impacts on community benefits have not been well documented or assessed thoroughly.

Many of the pressures associated with community benefits, such as population change, economic growth and climate change, are global drivers and are difficult for a single planning system to encompass. However, the *Recreation Management Strategy*⁹ and the Strategic Assessment draft Report⁷ made some progress towards recognising the enjoyment and personal attachment to the Reef. Social, cultural and heritage values are considered when assessing permits applications, but this application is limited by the GBRMPA's knowledge of these aspects in specific locations.

In particular, the Reef Guardian program, Reef HQ Aquarium, and the Recreation Management Strategy⁹ have objectives for management associated with community benefits. The Field Management Program, jointly managed with the Queensland Government, also has a strong commitment to ensuring public access to the Reef and islands.

Many of the community benefit issues are considered under programs and policies developed for other purposes such as access to resources, conservation and multiple use. Currently there are no guidelines or benchmarks for social or economic impact assessments in the Region. An overarching strategy that outlines the objectives for community benefits, while showing the linkages across the programs, would clarify roles and responsibilities. It would also provide an improved framework to assess the management effectiveness with greater accuracy.

Stakeholder engagement through the Reef Advisory Committees, Local Marine Advisory Committees and stakeholders brought together for the strategic assessment enable managers to gain a better understanding of community values and issues of concern. Volunteer programs, such as components of the marine monitoring program (for example, Seagrass-Watch) and Eye on the Reef, also provide avenues for community involvement in protecting the Great Barrier Reef.

A range of programs and strategies, including the Recreational Management Strategy, community engagement, volunteer and interpretative services, and capacity for people to access the Reef contribute to mostly effective management outcomes for community benefits.

6. Assessment of the six elements within the management effectiveness framework

The six elements of the IUCN management framework can be examined across all of the issues that have been assessed to examine patterns in the strengths and weaknesses in management of the Great Barrier Reef Region. This analysis can point to areas where generic aspects of management can be identified that are working effectively or where a change in management approach may lead to improved performance. The grade for each of the six elements of the IUCN management effectiveness framework (context, planning, inputs, processes, outputs and outcomes) for each of the issues (Table 19) provides the basis for this analysis. These results were also compared with those from Outlook Report 2009 and changes in ratings are indicated in Table 19.

When the complexity of the issue in social, biophysical and jurisdictional terms (Table 3) is taken into account, it is clear that performance across the six elements tends to be better for the less complex issues. This is not surprising as less complex issues are likely to be more tractable. Two issues do not fall in line with this general pattern, Land-based run-off is one of the more complex issues and yet is generally effectively managed (although outcomes remain only partially effective). This result demonstrates the impact that extensive research to inform management responses, extensive planning and significant commitment of resources can have on the management of an issue. 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. *Community benefits of the environment* is a less complex issue that shows only partially effective management in inputs and processes. This is a new program that is only just being introduced and resourced and this is the likely cause of the somewhat poorer performance than its complexity would suggest.

6.1 Context

Context is the strongest management effectiveness element across the issues, with all assessed as either 'effective' (9 issues) or 'mostly effective' (6 issues). Trends in this element 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 process and the strategic assessment reports.^{7,16} 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 Reef in a national and international context, along with the direct and indirect threats to those values. Understanding of stakeholders is consistently strong across all issues. Note that none of the issues were graded as less than 'mostly effective'.

6.2 Planning

Significant efforts have been made in planning for a number of issues such as biodiversity values, coastal development and recreation. Some plans are still in draft form or are considerably outdated. Planning effectiveness has declined in relation to climate change, principally as a result of changing policy and a lack of clarity about future directions in climate change policy. Planning effectiveness has also declined for management of commercial marine tourism and research. This can be largely attributed to the need to update plans and policies in these areas and a lack of available staff and resources within the management agencies to progress this work at a desirable rate. In the case of coastal development, the GBRMPA's development of the Coastal Ecosystems Assessment Framework is very positive, however the fractured nature of the planning regime is problematic and recent changes to coastal planning in Queensland have raised concerns. Planning effectiveness has improved for the management of land-based run-off and TUMRAs where the investment of resources and staff in management agencies and partners is paying dividends. Lack of consistency across jurisdictions is the weakest aspect of planning. Note that none of the issues were graded 'ineffective'.

Table 19 Assessment results for elements of the management cycle ordered by complexity

	Context	Planning	Inputs	Processes	Outputs	Outcomes	Complexity
Climate change	↓	↓	↘	↓	↔	↓	Increasing complexity →
Coastal development	↗	↗	↔	↔	↔	↔	
Land-based run-off	↔	↑	↗	↑	↑	↔	
Ports	—	—	—	—	—	—	
Fishing	↔	↔	↔	↔	↔	↔	
Heritage values	↓	↓	↔	↘	↘	↘	
Commercial marine tourism	↔	↓	↘	↓	↔	↔	
Recreation	↔	↔	↘	↘	↔	↔	
Traditional use of marine resources	↗	↑	↑	↗	↔	↑	
Biodiversity values	↔	↔	↔	↔	↔	↘	
Community benefits of the environment	—	—	—	—	—	—	
Shipping	—	—	—	—	—	—	
Research activities	↗	↓	↓	↓	↔	↔	
Defence activities	↔	↘	↓	↔	↔	↔	

Management effective assessment is colour coded:

Effective ■ Mostly effective ■ Partially effective ■ Ineffective ■

Trends are indicated by arrows:

↑ Trend since 2009 has been an upwards change in grade

↗ Trend since 2009 is increasing but has not caused an upwards grade change

↔ Grade has remained stable compared to 2009, with no major trends

↘ Trend since 2009 is decreasing but has not caused a downwards grade change

↓ Trend since 2009 has been an downwards change in grade

— No trend provided because the topic was not assessed in 2009

6.3 Inputs

Adequacy of inputs is variable across management issues, being least effective for community benefits, coastal development, and non-Indigenous heritage management. The adequacy of historic heritage and Indigenous knowledge is a problem for most issues and is among the worst performing criteria across the whole assessment. Availability of relevant socio-economic knowledge has improved since the 2009 Outlook assessment, largely as a result of the creation of a dedicated position in this area in GBRMPA and the social and economic long-term monitoring program. Secure resourcing (both funding and staff resources) is a significant ongoing problem for many management issues and a better understanding and documentation of management resource requirements is needed. In many cases the lack of adequate resources to advance planning and management is constraining the effectiveness of other aspects of management. Note that none of the issues were graded 'ineffective'.

6.4 Process

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. Addressing consequential and cumulative impacts, application of socio-economic and Indigenous knowledge, and setting of targets to benchmark performance are problematic for most issues. Consideration of cumulative and consequential impacts has improved substantially since Outlook Report 2009. Stakeholder engagement and application of biophysical information are the strongest aspects of management across all issues. Note that none of the issues were graded 'ineffective'.

6.5 Outputs

Delivery of desired outputs was rated as effective or very effective for all issues except coastal development and ports. They are strongest in relation to commercial marine tourism, defence, research and land-based run-off, with a noticeable improvement in the delivery of outputs relating to land-based run-off compared to the Outlook Report 2009. The knowledge base of the management agencies and 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. Note that none of the issues were graded 'ineffective'.

6.6 Outcomes

Achievement of desired outcomes (values protected, threats reduced, long-term environmental and economic sustainability) is highly variable across issues. Objectives in relation to community understanding of issues and development of effective partnerships are being achieved. Performance in outcomes is especially strong for research, shipping and defence. Overall, the greatest concerns in relation to achievement of desired outcomes are for climate change, then coastal development, land-based run-off, and fishing.

6.7 Overall summary

The table below (Table 20) summarises performance across the six criteria of the World Commission on Protected Areas management effectiveness evaluation framework (Table 2) for management of the Great Barrier Reef, based on consideration of the individual performance in each of the management topics. The grade for each of the broad assessment criteria for the management effectiveness evaluation are based on the grading statements in Appendix 1, and the outcome of this qualitative assessment is presented below.

Table 20 Overall summary for the six criteria of the management cycle

Criteria	Grade and trend	Justification of grade
Context	↗	Understanding of values, threats, regional/global influences and stakeholders is good for most thematic areas
Planning	↔	Effective planning systems that engage stakeholders are in place for many significant issues. Policy and consistency across jurisdictions is generally ok.
Input	↔	Financial and staffing resources are unable to meet management needs in some important thematic areas, biophysical, socio-economic and traditional (Indigenous) knowledge is variably available to inform management decision making and there are significant deficiencies in some areas
Processes	↘	The majority of management processes are appropriate and effective in addressing management although there are deficiencies in relation to a small number of thematic areas or processes
Outputs	↔	Management programs are mostly progressing in accordance with planned programs and are achieving their desired objectives but there are problems in some thematic areas. The agency and community knowledge base is generally improving.
Outcomes	↘	Desired outcomes, protection of values and abatement of threats are not being achieved at desirable levels in some critical thematic 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.

Grades are colour coded:

Effective ■ Mostly effective ■ Partially effective ■ Ineffective ■

Trends are indicated by arrows:

↑ Trend since 2009 has been an upwards change in grade

↗ Trend since 2009 is increasing but has not caused an upwards grade change

↔ Grade has remained stable compared to 2009, with no major trends

↘ Trend since 2009 is decreasing but has not caused a downwards grade change

↓ Trend since 2009 has been an downwards change in grade

7. Assessment of management approaches

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.

The assessors considered how effective the main management tools were in delivering outcomes for each of the 14 topics from the data gained using the information assembled to justify the management effectiveness ratings.

7.1 Environmental regulation

Statutory instruments, includes Acts and regulations, zoning plans, plans of management, permits, fees and charges, compliance and enforcement programs.

Statutory instruments used to assist the management of the Region are generally contemporary and appropriate. Reviews of Commonwealth legislation has occurred to keep pace with merging issues, and aligned the EPBC Act and the Great Barrier Reef Marine Park Act as appropriate. The relevant Queensland legislation is not necessarily consistent with the Commonwealth, often due to differences in objectives. While joint permits between governments under the Queensland Nature Conservation Act, the Queensland Marine Parks Act and the GBRMPA have been undertaken for some time, current governments are committed to a “one stop shop” approach” with respect to approvals.

The Great Barrier Reef Zoning plan has been very effective for issues such as fishing, resulting in positive outcomes for biodiversity values. However zoning (spatial planning) is not designed to address other issues (for example tourism, which is handled through permits and Plans of Management). While Plans of Management are a useful tool, they require updating, and development in some areas, which are now experiencing greater impacts from users.

Compliance systems are very sophisticated, and are very effective for issues of highest risk to the Region such as illegal fishing. However due to funding issues, the Field Management Program (FMP) must prioritise compliance activities and are not able to enforce the legislation as comprehensively as desired. Compliance issues with tourism and research are not currently identified as priorities as these are seen having a lower risk.

Non-statutory mechanisms include policies, strategies, position statements and guidelines. A number of policies and strategies have been considerably improved or developed and since Outlook Report 2009 – (for example climate change, recreation, biodiversity, TUMRAs, Reef Plan). Some of these policies and strategies would benefit from more outcome oriented targets, with clear objectives, actions and milestones. An example of a highly effective strategy is the Reef Plan 2009 and 2013; a joint program between both the Queensland and Australian governments.

Some policies require a significant review, such as the heritage strategy. Polices need to be developed for management areas such as Indigenous heritage, community benefits and tourism. All polices need to have regular reviews and evaluation plans to ensure they remain contemporary and achieve their desired outcomes.

There is a concern about potential policy inconsistencies across jurisdictions for some topics, such as coastal development and climate change.

7.2 Engagement

Partnership and collaborative arrangements with Queensland and other Australian government agencies include field management and on-ground works.

Intergovernmental Agreement between the Australian and Queensland governments articulating the joint management arrangements for the Region between the two governments is world leading. This agreement has been in place since 1979 and was updated in 2009 to ensure that contemporary issues and challenges were suitably addressed. The Field Management Program (FMP) works well for joint management and is a model for the rest of world. The Intergovernmental Agreement and the FMP require the two governments to jointly develop priorities for activities and allocation of funding. The greatest concern with the collaborative program is resourcing to enable staff to undertake required management across all necessary activities in the World Heritage Area.

Further positive collaboration with government departments within and across levels of government is through programs such as the Reef Plan. Changes to coastal development through the implementation of the new State Planning Policy (SPP) are still to be determined. Implementing government policy on devolution of environmental impact assessment (EIA) will also need to ensure that impacts on the Region are appropriately considered. However, it is too early to determine the outcomes of this process.

Research collaboration between GBRMPA, AIMS, CSIRO, Queensland Government, universities and other research bodies has been positive and proactive.

There has been very positive progress with partnerships with Traditional Owners through the Reef Rescue program, which includes TUMRAs. The GBRMPA is engaged with over 80 per cent of Traditional Owners in the Great Barrier Reef. However, there is an on-going lack of knowledge transfer between Traditional Owners and managers, resulting in Traditional Owner knowledge not being taken into account for many management decisions or actions. This is due in part to lack of trust by the Traditional Owners about how the information will be used. The Indigenous partnership group with the GBRMPA continues to work closely with Traditional Owners across the Region to include their knowledge and input to management issues. Indigenous employment especially through FMP/ Indigenous Rangers has been strongly supported through both governments.

The development of partnerships and stewardship arrangements is one of the strongest aspects of management of the Great Barrier Reef Marine Park. All of the individual indicators that relate to partnerships and stewardship fall in the top quartile of scores averaged across all management issues and knowledge of stakeholders is the highest ranked indicator overall.

The Reef Guardians program is an acknowledged example of this approach that has now spread around the world. The Reef Guardians programs for schools and local government have been particularly successful and uptake in industry sectors such as farming, grazing and fishing is growing. More broadly Reef Plan depends on forming partnerships with Natural Resource Management bodies and though them with land managers within the Great Barrier Reef catchment. However clear outcomes and targets need to be publicly available.

Partnerships and stewardship programs are also key elements of management with the tourism and fishing industries with climate change planning and reef health monitoring via the Eye on the Reef program as prominent aspects.

The partnership and stewardship programs are underpinned by long-standing consultation arrangements with key sectors and regions via the Reef Advisory Committees and Local Marine Advisory Committee structure.

7.3 Knowledge, innovation and integration

7.3.1 Research and Monitoring

The Outlook Report process and the Great Barrier Reef Region and coastal zone strategic assessments^{7,16} have accumulated and consolidated knowledge relevant to the management of the Great Barrier Reef and made this available to managers, stakeholders and the general public. In addition these processes have identified key knowledge gaps and have stimulated programs and projects to fill these knowledge gaps.

Management agencies have developed strong and extensive partnerships with research providers such as CSIRO, the Australian Institute of Marine Science and universities. These partnerships have become more targeted as key knowledge gaps have been identified through processes such as the Outlook Report and in response to key environmental and socio-economic challenges.

Combined with the strong stewardship programs with the tourism industry, these research partnerships have led to an expansion of monitoring both in scope and scale. The AIMS long-term monitoring program has provided critical data in understanding the extent of degradation of the Great Barrier Reef, especially in the Southern Inshore region. It has demonstrated the value of maintaining consistent monitoring over an extended time period. The social and economic long-term monitoring program is addressing deficiencies in monitoring these aspects of reef management.

The Eye on the Reef program has consolidated monitoring and reporting by reef users including recreational users, communities and participants from the tourism and other reef-based industries. This monitoring program is already providing a large monitoring data set across a wide geographic scale and has the potential to expand the monitoring database in the future.

The development of an integrated monitoring framework and program is a positive initiative that will help to address some of the deficiencies in past monitoring efforts, especially in relation to cumulative impacts and overall ecosystem health.

7.3.2 Reporting and evaluation

The 5-yearly Great Barrier Reef Outlook Report process now provides the most comprehensive, regular basis for evaluation and reporting on management of the Great Barrier Reef. The model and process developed for the Outlook Report has been widely acknowledged as a ground-breaking innovation and has been adapted for use in Australian State of Environment reporting as well as in other jurisdictions including internationally. The five yearly Outlook Reports are supported by periodic, in depth assessments of issues of particular concern such as the report on the *Informing the Outlook for Coastal Ecosystems*⁶ report produced in 2012.

The Paddock to Reef Monitoring, Modelling and Reporting Program under Reef Plan has produced three report cards with the latest released in 2013.³⁸ The process and content of Reef Plan reporting in this latest report card is significantly improved with contributions from all the partners in the program and enhanced depth and quality of monitoring information.

All Commonwealth funded projects such as Reef Rescue require a Monitoring, Evaluation, Reporting and Improvement (MERI) plan that provides a structured process for monitoring and evaluation.

The Strategic Assessment undertaken under the provisions of the EPBC Act is providing a one-off, comprehensive assessment of marine and coastal management in the Great Barrier Reef Region and includes the development of Program Reports to address issues identified in the assessments.^{8,14}

7.4 Resourcing of management arrangements

Some areas of assessment of management inputs (staffing and funding) have declined since the Outlook Report 2009. This appears to be largely a result of competing requirements for management of other high priority issues. In the face of essentially static resources for overall management outside specially funded programs, such as Reef Rescue, Reef Plan and TUMRAs, redirection of effort is the main recourse for addressing these emerging priorities. However it has meant that management of issues such as tourism and research has not kept pace with plans or recognised needs. While not necessarily presenting a high risk to the Reef overall, the reputation of the Great Barrier Reef management as a global leader in these areas is likely to decline if additional resources to strengthen management in these areas cannot be found. Funding for the Field Management Program has been static since 2008 and declining in real terms. Funding has not kept pace with an increase in use of the protected area. While activities including compliance, maintenance of faculties and work on threatened species are prioritised; the lack of funding increases is resulting in an on-going decline in management capacity. This has resulted in a management presence in outlying Great Barrier Reef areas and islands being reduced to once yearly at best.

8. Summary

Managing agencies are striving to manage effectively in all areas, and there have been considerable improvements in a number of areas since the Outlook Report 2009. The strategic assessment process undertaken in 2012 to 2013 has assisted with planning and development of programs^{8,14} that should result in improved management in many areas and across many of the issues considered in this assessment. In particular, the process has consolidated relevant information and has provided resourcing for consideration of cumulative impacts and improvements in monitoring, especially of social and economic aspects of Great Barrier Reef management. The difficulties in achieving positive outcomes on the ground, given the spatial and temporal scales of the threats facing biodiversity, heritage and community benefit values and the diminishing resource base to implement actions, are recognised. However, greater traction in threat reduction is needed for an improvement in outcomes. Improved threat reduction is, in turn, dependent on the adoption of significant changes to current policies regarding coastal development, resource use, control of other human impacts together with sufficient resourcing to implement threat reduction programs in the field.

Management effectiveness is strongest on issues limited in scale or intensity and presenting only minor or moderate complexity such as defence and research activities. Tourism operates across much of the region and is moderately complex. While it has received significant management attention in the past and is effectively managed overall, there is an emerging concern that the redirection of efforts within management agencies to tackle issues posing a higher risk to the Great Barrier Reef has meant that those activities that were previously of lesser concern because of their effective management (for example, tourism planning and management) are not staying 'ahead of the game'. Until overall resourcing levels for management agencies are improved, tackling high priority issues is likely to continue to have a negative effect of management on other, more routine issues, such as those associated with research and commercial marine tourism.

Management effectiveness challenges are evident for those broad scale issues which are complex socially, biophysically and jurisdictionally. These include ports, shipping, climate change, coastal development, land-based run-off, fishing and Indigenous heritage.

In the case of climate change, coastal development and land-based run-off, the particular management challenges occur in consistency across jurisdictions which impacts on planning. For fishing, there are particular challenges in the areas of monitoring and compliance, especially as they relate to addressing potential cumulative impacts. For Indigenous heritage, the management challenges are particularly in areas of understanding the context and processes to better incorporate Indigenous heritage considerations into management, although substantial progress has been made through the development and implementation of TUMRAs, which is now one of the strongest areas of management effectiveness, showing consistent improvement across the board.

Overall strengths and weaknesses in management effectiveness

Detailed information on the grading, justification for grading and evidence used for each indicator is given in Appendix 3.

Across the entire assessment the strongest performance was evident for indicators relating to aspects of context (CO5 knowledge and understanding of stakeholders, CO4 understanding of national and international influences and CO1 knowledge and understanding of values), and stakeholder engagement (IN8 inputs from volunteers, PL6 engagement of stakeholders in planning and PR1 stakeholders engaged in management). Other indicators where performance was generally strong across the management topics were the social sustainability of management (OC6), the use of biophysical information in management (PR9) and knowledge of condition and trend of values (CO2).

The weakest aspects of performance across the assessment related to adequacy of inputs (IN7 availability of heritage information, IN6 availability of Indigenous information and IN2 adequacy of human resources to meet management objectives). Adequacy of financial resources was variable

being strong for issues such as commercial marine tourism, land-based run-off and TUMRAs but weak in areas such as coastal development, community benefits, fishing, ports and recreation. Other generally weak indicators across all topics related to heritage and Indigenous aspects of management (PR11 and PR12 use of Indigenous and heritage information in management), issues relating to performance management (PR14 establishment of targets against which to benchmark management and PL5 planning and systems for monitoring); training of management agency staff (PR5) and two of the indicators relating the results of management (OC4 management of issue is environmentally sustainable and OP3 results of management are achieving stated objectives). Results for environmental sustainability were on average lower than those for either economic or social sustainability.

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10 Appendices

Appendix 1 Grading statements for elements in the management cycle

Assessment criteria	Grade	Grading statements
Context – understanding of values, threats, regional/global influences and stakeholders	Effective	Understanding of values, threats, regional/global influences and stakeholders is good for most thematic areas
	Mostly effective	Understanding is generally good but there is some variability across themes or components of the assessment criteria
	Partially effective	Understanding of values, threats, regional and global influences and relevant stakeholders is only fair for most thematic areas
	Ineffective	Understanding of values, threats, regional and global influences and relevant stakeholders is poor for most thematic areas
Planning – adequacy of planning systems and practices	Effective	Effective planning systems that engage stakeholders are in place for all/most significant issues. There is adequate policy to manage issues that is consistent across jurisdictions.
	Mostly effective	Effective planning systems that engage stakeholders are in place for many significant issues. Policy and consistency across jurisdictions is generally ok.
	Partially effective	Planning systems that engage stakeholders are deficient for a number of significant issues. Policy and consistency across jurisdictions is a problem for some issues
	Ineffective	Planning systems that engage stakeholders are deficient for many significant issues. Policy and consistency across jurisdictions is a problem for some issues.
Inputs – adequacy of financial, staffing and information resources	Effective	Financial and staffing resources are largely adequate to meet management needs, biophysical, socio-economic and traditional (Indigenous) knowledge is available to inform management decision making
	Mostly effective	Financial and staffing resources are mostly adequate to meet management needs, biophysical, socio-economic and traditional (Indigenous) knowledge is mostly available to inform management decision making although there may be deficiencies in some areas
	Partially effective	Financial and staffing resources are unable to meet management needs in some important thematic areas, biophysical, socio-economic and traditional (Indigenous) knowledge is variably available to inform management decision making and there are significant deficiencies in some areas
	Ineffective	Financial and staffing resources are unable to meet management needs in many thematic areas, biophysical, socio-economic and traditional (Indigenous) knowledge to support decision making is frequently deficiencies in some areas
Processes – adequacy of management systems and processes	Effective	The majority of management processes are appropriate and effective in addressing the management of the various thematic areas
	Mostly effective	The majority of management processes are appropriate and effective in addressing management although there are deficiencies in relation to a small number of thematic areas or processes
	Partially effective	A minority of critical management processes show significant deficiencies across most thematic areas
	Ineffective	A majority of management processes show significant deficiencies across most thematic areas
Outputs – delivery of products and services and implementation of plans	Effective	Management programs are mostly progressing in accordance with planned programs and are achieving their desired objectives. The agency and community knowledge base is improving.
	Mostly effective	Management programs are mostly progressing in accordance with planned programs and are achieving their desired objectives but there are problems in some thematic areas. The agency and community knowledge base is generally improving.
	Partially effective	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.
	Ineffective	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.
Outcomes – results of management actions in achieving goals, maintaining values	Effective	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.
	Mostly effective	Desired outcomes are being achieved in many thematic areas, values protected and threats abated for many thematic areas, use of the Great Barrier Reef is largely environmentally and economically sustainable with good community engagement, understanding and enjoyment.
	Partially effective	Desired outcomes, protection of values and abatement of threats are not being achieved at desirable levels in some critical thematic 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.
	Ineffective	Desired outcomes, protection of values and abatement of threats are not being achieved at desirable levels in most thematic areas 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.

Note: The grade allocated to an assessment criterion is the “grade of best fit” calculated across the individual components of the assessment criteria. Some individual components of the criteria may be ranked higher or lower. These grading statements provide a guide to interpreting the assessment results.

Appendix 2 Program approaches and management tools

Management tool	Purpose	Current components and activities
Acts and Regulations	The <i>Great Barrier Reef Marine Park Act 1975</i> and Regulations govern the protection and management of the Great Barrier Reef Marine Park. They provide for the Zoning Plan and plans of management, and govern permitting decisions. The provisions are matched in areas of Queensland jurisdiction by the <i>Marine Parks Act 2004</i> and Regulations. Other Commonwealth and Queensland legislation also applies in the Region, for example the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i> and the <i>Environmental Protection Act 1994 (Qld)</i> .	<ul style="list-style-type: none"> • <i>Great Barrier Reef Marine Park Act 1975</i> • Great Barrier Reef Marine Park Regulations 1993 • Providing advice, for example on projects assessed under <i>the Environment Protection and Biodiversity Conservation Act 1999</i> • Coordinating application of the Queensland <i>Marine Parks Act 2004</i> and Regulations, for example in relation to joint marine parks permits
Zoning Plan	Provides spatial control of use and, to a lesser extent, access within the Great Barrier Reef Marine Park. Establishes the framework for extractive use and the need for permits for some uses, such as tourism, infrastructure and research. Zoning plans are developed under Part 5 Division 2 of the <i>Great Barrier Reef Marine Park Act 1975</i> . Complementary arrangements are in place in adjacent areas under Queensland jurisdiction.	<ul style="list-style-type: none"> • Great Barrier Reef Marine Park Zoning Plan 2003
Plans of management	Set out specific arrangements for activities, areas, species or ecological communities. They complement zoning and permitting arrangements. Some components are legally binding. Plans of management are developed under Part VB of the <i>Great Barrier Reef Marine Park Act 1975</i> . There is the capacity for the GBRMPA to enter into agreements or arrangements for management of an area, species or ecological community with a community group having a special interest in an area, including some form of native title.	<ul style="list-style-type: none"> • Cairns Area Plan of Management 1998 • Hinchinbrook Area Plan of Management 2004 • Whitsundays Plan of Management 1998 • Shoalwater Bay (Dugong) Plan of Management 1997
Permits (including environmental impact assessment)	Facilitate opportunities for sustainable use of the Marine Park. Permits are issued mainly for tourism, research, harvest fisheries, dredging and infrastructure (for example jetties and marinas) and include detailed risk-based environmental impact assessment. Matched in adjacent areas of Queensland jurisdiction, generally providing a joint permit. Fisheries licences are issued and managed by the Queensland Government.	<ul style="list-style-type: none"> • Permits granted under Part 2A of the Great Barrier Reef Marine Park Regulations 1983 and under Queensland Marine Parks Regulations 2006
Traditional Owner agreements	Traditional Use of Marine Resources Agreements are formal agreements describing how Traditional Owner groups work with Australian and Queensland governments to manage traditional activities in sea country. They are made in accordance with Part 2B of the Regulations. They do not affect the operation of section 211 of the <i>Native Title Act 1993</i> and are not intended to extinguish native title rights and interests. Indigenous Land Use Agreements are between one or more native title groups and other people or parties about the use and management of land and waters.	<ul style="list-style-type: none"> • Kuuku Ya'u People's Indigenous Land Use Agreement • Traditional Use of Marine Resources Agreements for Giringun region; Dharumbal–Woppaburra section; Wuthathi region; Port Curtis Coral Coast; Lama Lama region; Yuku-Baja-Muliku region

Management tool	Purpose	Current components and activities
Compliance	Activities that encourage adherence with legal requirements, both through education and enforcement.	<ul style="list-style-type: none"> • Eyes and Ears Incident Reporting program • Field Management Program jointly undertaken with the Queensland Government
Site infrastructure	On-ground infrastructure is installed to manage use and protect the values of individual sites. Implemented and maintained by the GBRMPA and the Queensland Government through the Field Management Program.	<ul style="list-style-type: none"> • No-anchoring areas • Public moorings • Reef protection markers • Signs • Transit lanes
Fees and charges	<p>Three main fees and charges apply in the Marine Park:</p> <p>The cost of assessing an application for a permit for commercial activities is partly recovered through payment of a permit application assessment fee.</p> <p>The environmental management charge applies to some commercial activities operating under a permit issued by the GBRMPA. The revenue is applied to Marine Park management.</p> <p>Bonds (usually as a bank guarantee) may be held by the GBRMPA to cover the risks associated with a proposed activity.</p>	<ul style="list-style-type: none"> • Permit application assessment fees are currently charged for activities of a commercial nature including tourist programs; vessel chartering; construction or maintenance of a facility; operation of a land-based sewage outfall; and the construction and operation of a mooring. • Most tourism visitors to the Marine Park pay the environmental management charge. For operations involving the hire of equipment, installation and operation of tourist facilities, and sewage outfalls, quarterly charges are paid by the operator. • Bonds are generally secured as part of a deed of agreement between the permittee and the GBRMPA.
Policy	<p>Developed by the GBRMPA, under section 7(4) of the <i>Great Barrier Reef Marine Park Act 1975</i>, detailing the way in which the GBRMPA intends to manage the Marine Park or perform its other functions. Policy documents are not legislative instruments. They are specific arrangements that guide decision makers and the public. Types of policy documents include: strategies, policies, site management arrangements, position statements and guidelines.</p>	<p>Strategies</p> <ul style="list-style-type: none"> • Great Barrier Reef Biodiversity Conservation Strategy 2013 • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012–17 • Great Barrier Reef Heritage Strategy 2005 • Recreation Management Strategy for the Great Barrier Reef Marine Park <p>Policies</p> <ul style="list-style-type: none"> • Cruise shipping policy for the Great Barrier Reef Marine Park • Dredging and spoil disposal • Environmental impact management • Managing activities that include the direct take of a protected species from the Great Barrier Reef Marine Park • Managing bareboat operations in the Great Barrier Reef Marine Park • Managing scientific research in the Great Barrier Reef Marine Park • Managing tourism permissions to operate in the Great Barrier Reef Marine Park (including allocation, latency and tenure) • Marine tourism contingency plan for the Great Barrier Reef Marine Park • Moorings in the Great Barrier Reef Marine

Management tool	Purpose	Current components and activities
		<p>Park</p> <ul style="list-style-type: none"> • Operational policy on whale and dolphin conservation in the Great Barrier Reef Marine Park • Sewage discharges from marine outfalls to the Great Barrier Reef Marine Park • Structures <p>Site management arrangements</p> <ul style="list-style-type: none"> • Site plans for Raine Island, Moulter Cay and Maclennan Cay; Clump Point, Mission Beach; Low Isles, offshore from Port Douglas; Michaelmas Cay locality; Upolu Cay Reef; Bauer Bay; South Molle Island; Blue Pearl Bay, Hayman Island; Whitsundays Plan of Management setting 5 site plans; Tongue Bay; Hill Inlet and Whitehaven Beach; Fitzroy Reef; Keppel Bay and islands; Lady Elliot Island Reef; Lady Musgrave Island Reef <p>Position statements</p> <ul style="list-style-type: none"> • Aquaculture within the Great Barrier Reef Marine Park • Conservation of dugongs in the Great Barrier Reef Marine Park • Indigenous participation in tourism and its management • Management of commercial jet ski operations around Magnetic Island • Management of tourist flights in the vicinity of Magnetic Island • Management of memorials within the Great Barrier Reef Marine Park • Managing access to the Restricted Access Special Management Areas surrounding Raine Island, Moulter Cay and Maclennan Cay • No structures sub-zones • Translocation of species in the Great Barrier Reef Marine Park <p>Guidelines</p> <ul style="list-style-type: none"> • Coral transplantation • Emergency disposal of foreign fishing vessels • Management of artificial reefs in the Great Barrier Reef Marine Park • Managing visitation to seabird breeding islands • Permits Information Bulletin — no structure sub-zones • Use of hydrodynamic numerical modelling for dredging projects in the Great Barrier Reef Marine Park

Management tool	Purpose	Current components and activities
Partnerships	Formal arrangements, often executed through a memorandum of understanding or an agreement, to enable a partnership approach to management of the Marine Park.	<ul style="list-style-type: none"> • Great Barrier Reef Intergovernmental Agreement 2009 between the Australian and Queensland governments • Reef Water Quality Protection Plan 2009 and 2013 (Reef Plan) • High Standard Tourism program with Ecotourism Australia • Management agreement with the Department of Defence on the implementation of the strategic environmental assessment of defence activities in the Marine Park. • Marine Strandings Hotline • Memorandum of understanding with the Department of the Environment, Water, Heritage and the Arts relating to the integration and application of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> and the <i>Great Barrier Reef Marine Park Act 1975</i> • Memorandum of understanding with Queensland ports on port activities in or adjacent to the Great Barrier Reef Marine Park (2009) • Local Marine Advisory Committees • Reef Advisory Committees • Targeted control of crown-of-thorns starfish through contract with the Association of Marine Park Tourism Operators (AMPTO)
Stewardship and best practice	Voluntary arrangements with stakeholders that provide the opportunity for contributions to protection and management. Provision of expertise and advice to stakeholders and natural resource management bodies.	<ul style="list-style-type: none"> • High Standard Tourism program with marine park operators • Eyes and Ears Incident Reporting program • Eye on the Reef monitoring program • Low Isles Preservation Society • Marine Contingency Coordination Framework for Environmental Incidents • Marine monitoring program water quality monitoring volunteers • Pro-vision Reef Stewardship Action Plan • Reef Guardian program, including schools, councils, fishers, farmers and graziers, and tourism (in development) • Responsible Reef Practices (for tourism and recreational users)
Education and community awareness	Programs to inform and motivate members of the community about the Great Barrier Reef and its protection and management, including ways they can contribute.	<ul style="list-style-type: none"> • Community Access Points which distribute zoning maps and educational material • On-board website for tourism operators • Reef Guardian Schools • Reef HQ Aquarium • The GBRMPA's publications including Reef in Brief and fact sheets • The GBRMPA's websites and social media channels
Research and monitoring	Undertaken, commissioned or partnered by the GBRMPA to better inform decisions on	<ul style="list-style-type: none"> • Commissioned research projects to address specific management issues

Management tool	Purpose	Current components and activities
	protection and management of the Great Barrier Reef, guided by the GBRMPA's <i>Scientific information needs for the management of the Great Barrier Reef Marine Park 2009–2014</i> .	<ul style="list-style-type: none"> • Eye on the Reef monitoring program • Independent and partnered research by research institutions and the Great Barrier Reef Foundation • Marine monitoring program • National Environmental Research Program, Tropical Ecosystems Hub, 2011–2015
Reporting	Undertaken by the GBRMPA to meet statutory, national and international obligations, and to provide direction for strategic planning within the agency.	<ul style="list-style-type: none"> • Field Management business strategy (annual) • Great Barrier Reef Marine Park Authority annual report • Great Barrier Reef Outlook Report (five-yearly) • World Heritage periodic reporting (six-yearly)

Appendix 3 Calculation of Grades for each management topic

Table 21 Calculation of grades for commercial marine tourism

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to commercial marine tourism are understood by managers	4	<ul style="list-style-type: none"> • Tourism within the Great Barrier Reef is recognised by managers as one of the most significant uses of the Reef, and the values that underpin MNES in the Great Barrier Reef are acknowledged to be major drivers for economic growth and employment for coastal Queensland. In 2012, tourism in the Reef catchment and World Heritage Area generated approximately \$6.4 billion in direct expenditure, \$5.2 billion value-added and an equivalent of more than 64,000 full time jobs. • Values relevant to tourism are similar to values that underpin MNES including outstanding universal value and are therefore very well understood by managers. • Management is focused on stewardship opportunities through the high standard tourism program and the possible impacts of tourism through the permits and compliance within the Great Barrier Reef Marine Park. • Great Barrier Reef managers recognise the need to collaborate with other regulatory and research agencies to manage tourism activities in partnership with the marine tourism industry. • Great Barrier Reef is recognised as a National Landscape; one of our 16 most inspirational environments that underpin the tourism industry • Draft Tourism Management Strategy reflects good understanding of Great Barrier Reef values relative to tourism • The strongest values of the Great Barrier Reef among tourists (based on ratings of agreement with a range of statements) were: (1) biodiversity values (i.e. "the GBR supports a variety of life, such as fish and corals"; mean rating = 8.97/10), (2) the GBR's aesthetic beauty ("the aesthetic beauty of the GBR is outstanding"; 8.95), (3) the GBR's World Heritage status ("I feel proud that the GBR is a World Heritage Area"; 8.76), (4) the GBR's scientific and educational values ("I value the GBR because we can 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report Chapters 4.3.4, 5.4.2 • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ • National Landscapes - http://www.environment.gov.au/topics/national-parks/national-landscapes-0 • Draft Great Barrier Reef Tourism Management Strategy • High standard tourism program: http://www.gbrmpa.gov.au/visit-the-reef/choose-a-high-standard-operator • SELTMP, NERP Project 10 http://www.nerptropical.edu.au/project/seltmp 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		learn about the environment through scientific discoveries"; 8.28), and (5) lifestyle values ("I value the GBR because it supports a desirable and active way of life"; 8.04).(SELTEMP Tourist survey)			
CO2 The current condition and trend of values relevant to commercial marine tourism are known by managers	4	<ul style="list-style-type: none"> Regular reports on tourism (international and national) by Tourism Australia provide a overall understanding of status and trends in tourism relevant to the Reef Periodic specific studies commissioned by GBRMPA (for example 2006/7, 2012) provide detailed specific information on economic contributions of industries associated with the Great Barrier Reef – tourism is by far the most important of these in economic terms and good data on trends is available. Permits database provides high quality, detailed data on status and trends in commercial marine tourism More detailed information on regional patterns in status and trend in condition of biophysical values underpinning the tourist industry is now available The condition of values relevant to commercial marine tourism has been recently surveyed as part of the SELTMP. The aim is to continue this monitoring in the long term to determine trends in values. 	<ul style="list-style-type: none"> Tourism Australia statistics - http://www.tra.gov.au/statistics.html Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Great Barrier Reef Region Strategic Assessment Report Chapters 4 and 7 Draft Great Barrier Reef Tourism Management Strategy SELTMP, NERP Project 10 http://www.nerptropical.edu.au/project/seltmp 	adequate	stable
CO3 Impacts (direct, indirect and cumulative) associated with commercial marine tourism are understood by managers.	4	<ul style="list-style-type: none"> The potential impacts of commercial marine tourism have been clearly enunciated in the Great Barrier Reef Outlook Report 2009 (p.66) and the draft Great Barrier Reef Tourism Management Strategy. Studies and a summary document published by CRC Reef on the marine tourism including its impacts, while dated, is still relevant. Managers apply a range of management tools in an effort to minimise impacts. Whilst the tourism planning system adequately addresses the localised impacts of tourism the above management arrangements do not effectively address the larger threats posed by climate change and water quality. Strategic assessment reports document actual and potential impacts from inadequately maintained tourism infrastructure, conflicts with other users, sewage discharge at sea because of inadequate shore-based pump-out facilities, site crowding and tourist industry compliance issues An audit and compliance plan and an update to the <i>Structures in the Marine Park</i> policy to address the issue of aging and poorly maintained tourism infrastructure are being developed. Tourism related direct impacts are generally rated as having a low effect on Great Barrier Reef habitats and biodiversity in the Great Barrier Reef 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapters 5.4.2 Draft Great Barrier Reef Tourism Management Strategy Great Barrier Reef Marine Park Authority 2012, Environmental Management Charge data, Great Barrier Reef Marine Park Authority, http://www.gbrmpa.gov.au/visit-the-reef/environmental-management-charge/gbr_visitation/numbers Harriott, V.J. 2002, Marine tourism impacts and their management on the Great Barrier Reef, CRC Reef, Townsville. Ormsby, J., Moscardo, G., Pearce, P. and Foxlee, J. 2004, A review of research into tourist and recreational uses of protected natural areas. GBRMPA research online publication No. 79, Great Barrier Reef Marine Park Authority, Townsville. 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Region Strategic Assessment report.</p> <ul style="list-style-type: none"> The potential cumulative impacts of tourism activities are generally better understood than those of most other activities. They are identified and tracked through Plans of Management, Site Planning Arrangements, no-anchoring areas and permit assessment processes for the major tourism areas of Cairns, the Whitsundays and Hinchinbrook. 	<ul style="list-style-type: none"> CRC Reef Tourism Research: http://www.gbrmpa.gov.au/visit-the-reef/visitor-contributions/gbr_visitation/crc-reef-tourism-research CRC Reef Marine Tourism on the Great Barrier Reef Current State of Knowledge 2003. 		
CO4 The broader (national and international) level influences relevant to commercial marine tourism are understood by managers.	4	<ul style="list-style-type: none"> The tourism industry and managers are very aware of dependency of the industry on a healthy reef environment and the potential impacts of climate-change related changes on the industry Broad national and international influences outlined in the draft Great Barrier Reef Tourism Management Strategy The effects of global changes in the financial climate, A\$ exchange rate and other external economic factors of tourist behaviour have been evident over the last 5-6 years making managers more aware of the dependence of the industry on these external drivers The improving economic climate, declining A\$ and active promotion of a tourism expansion policy by Queensland Government may lead to expansion of Great Barrier Reef tourism over the next few years Tourism will be recognised as a state interest in the State Planning Policy when it is released later this year, and the Queensland Government is committed to creating an environment for new investment, revitalisation and redevelopment of the tourism industry. The Queensland Department of National Parks, Recreation, Sport and Racing is reforming the <i>Nature Conservation Act 1992</i>, is developing a Queensland tourism 20 year plan and has developed the Queensland Ecotourism Plan 2013 - 2020 Reputational implications of the current discussion around the Great Barrier Reef and possible World Heritage in Danger listing may have an impact on Great Barrier Reef tourism but the significance and extent of this is unknown 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapter 5.4.2 Draft Great Barrier Reef Tourism Management Strategy Queensland Ecotourism Plan 2013 – 2020 http://www.nprsr.qld.gov.au/tourism/pdf/ecotourism-plan-2013.pdf <i>DestinationQ</i> Blueprint 2012-2015 http://www.dtesb.qld.gov.au/__data/assets/pdf_file/0019/31618/destQ-blueprint-12-15.pdf 	adequate	stable
CO5 The stakeholders relevant to commercial marine tourism are well known by managers.	4	<ul style="list-style-type: none"> Management agencies in the Great Barrier Reef have a long history of ensuring tourism stakeholders are well known and engaged in the management of the Reef including consultation mechanisms such as the Tourism and Recreation Reef Advisory Committee (TRRAC) and Local Marine Advisory Committees (LMACs) that provide a direct link key with stakeholders. Partnerships have been established with marine tourism associations such 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapter 3.8 Tourism partners webpage: http://www.gbrmpa.gov.au/our-partners/tourism-industry http://www.gbrmpa.gov.au/our-partners/reef-advisory-committee 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>as Association of Marine Park Tourism Operators Association (AMPTO), Whitsunday Charter Boat Industry Association (WCBIA) and Whitsunday Bareboat Owners Association (WBOA), Tourism and Transport (TTF) and Queensland Tourism Industry Council (QTIC)</p> <ul style="list-style-type: none"> • Liaison with tourism permit holders through newsletters, workshops and one-on-one meetings • Coordination between managing agencies (i.e. GBRMPA, Queensland Parks and Wildlife Service, Australian Maritime Safety Authority, Maritime Safety Queensland, Queensland Boating and Fisheries Patrol,, Queensland Water Police) • GBRMPA chairs the regional Steering Committee for the Great Barrier Reef National Landscape which has members from Tourism Queensland, Queensland Parks and Wildlife Service, key tourism industry representatives, and the conservation sector. 			
PLANNING					
PL1 There is a planning system in place that effectively addresses commercial marine tourism	3	<ul style="list-style-type: none"> • The Management Effectiveness (ME) Assessment for the Outlook Report 2009 noted that there was no strategic planning system in place for the Great Barrier Reef that brings together all the respective agencies that manage tourism use, in all or part of the Great Barrier Reef. • GBRMPA Tourism Management Strategy is under preparation but is not yet finalised or released for public comment • Current tourism management systems and programs largely set up to manage commercial marine tourism during the rapid expansion phase of the 1990's. Planning has not proactively addressed emerging trends and opportunities as effectively as it might. • The 2009 assessment also noted that whilst the tourism planning system adequately addresses the localised impacts of tourism the above management arrangements do not effectively address the larger threats posed by climate change and water quality. • The 2009 assessment also concluded that a strategic review of GBRMPA tourism management arrangements might be warranted as the bulk of these arrangements had been implemented over a ten-year period. • There is no annual compliance program to review the risks associated with permit noncompliance. There is a program for identifying Environmental Management Charge (EMC) noncompliance. • The GRBMPA released a Great Barrier Reef Tourism Climate Change 	<ul style="list-style-type: none"> • Marine Tourism Coordination Framework http://www.gbrmpa.gov.au/our-partners/tourism-industry/tourism-responses-to-environmental-incidents • Draft Great Barrier Reef Tourism Management Strategy • Draft Great Barrier Reef Strategic Assessment Report Chapter 9.7 • Great Barrier Reef Tourism Climate Change Action Strategy 2009-2012 http://www.gbrmpa.gov.au/_data/assets/pdf_file/0009/3987/gbrmpa_CCActionStrategyFull_2011.pdf • Queensland Management Plans; http://www.npsr.qld.gov.au/managing/plans-strategies/plans.html 	adequate	declining

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Action Strategy 2009-2012 to guide action to be taken by industry to improve reef health and the viability of the marine tourism industry.</p> <ul style="list-style-type: none"> • The Marine tourism coordination framework for environmental incidents sets out a mechanism for the coordination and facilitation of responses to an environmental incident relevant to the marine tourism industry • The Marine Tourism Contingency Plan is being revised; it has not progressed since the period for public comment closed 12 months ago – revision is now ready to be presented to the Great Barrier Reef Marine Park Board • Plans of Management for sections of the Great Barrier Reef where tourism is a key issue have not been updated since 2008. The draft Great Barrier Reef Strategic Assessment Demonstration Case Study on the Cairns Planning Area identified a number of aspects such as monitoring and consideration of cumulative impacts, cessation of tourism training and reductions in the field management program where improvements are desirable. • There is no program of regular revision of plans but rather only in response to external requests or pressure • The Queensland Government has various management plans for key island national parks and state marine parks with a strong tourism focus in the World Heritage Area although these plans are also more than a decade old. 			
<p>PL2 The planning system for commercial marine tourism addresses the major factors influencing the Great Barrier Reef Region's values.</p>	<p>4</p>	<ul style="list-style-type: none"> • Major risks of tourism to Reef values such as overcrowding, displacement of users, loss of amenity, impacts on species and environmental impacts were largely addressed through permitting arrangements, plans of management, public comment arrangements for applications likely to restrict the reasonable use by the public (Regulation 88D), site management arrangements and supporting infrastructure. • Complementary zoning and management arrangements are in place in adjacent areas under Queensland jurisdiction. • The Tourism Climate Change Action Strategy clearly addresses one of the major pressure: climate change • Pressures associated with outbreaks of crown-of-thorns starfish (COTS) are being addressed through a targeted COTS control program where the Association of Marine Park Tourism Operators (AMPTO) subcontracts a dive team to work with the GBRMPA to protect coral at sites of high tourism value. • The Statement of Management Arrangements in the Great Barrier Reef Marine Park for Superyacht Operations summarises the current 	<ul style="list-style-type: none"> • Great Barrier Reef Tourism Climate Change Action Strategy 2009-2012 http://www.gbrmpa.gov.au/__data/assets/pdf_file/0009/3987/gbrmpa_CCActionStrategyFull_2011.pdf • Marine Tourism Coordination Framework for Environmental Incidents http://www.gbrmpa.gov.au/our-partners/tourism-industry/tourism-responses-to-environmental-incidents • Marine Tourism Contingency Plan – draft awaiting finalisation http://www.gbrmpa.gov.au/our-partners/tourism-industry/tourism-responses-to-environmental-incidents • Targeted COTS control program http://www.gbrmpa.gov.au/about-the-reef/animals/crown-of-thorns-starfish/management-strategies 	<p>adequate</p>	<p>stable</p>

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>management arrangements for superyachts.</p> <ul style="list-style-type: none"> Permit latency remains an issue (permits not being used or not used to full capacity), that has been exacerbated by the downturn in Great Barrier Reef tourism and the impacts of cyclones that have made tourist operations more difficult. 	<ul style="list-style-type: none"> A Statement of Management Arrangements in the Great Barrier Reef Marine Park for Superyacht Operations: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0/017/3392/GBRMPA-ManagementArrangements-SuperyachtsMay-2011.pdf 		
<p>PL3 Actions for implementation regarding commercial marine tourism are clearly identified within the plan</p>	4	<ul style="list-style-type: none"> Plans of Management (Cairns, Whitsunday, Hinchinbrook) set out specific arrangements for activities, areas, species or ecological communities. They complement zoning and permitting arrangements. However, these plans have not been updated since 2008 (2004 for Hinchinbrook area) The Tourism Climate Change Action Strategy, the Marine Tourism Contingency Plan and the Marine Tourism Coordination Framework all outline clear actions for implementation The Queensland Ecotourism Plan 2013 - 2020 includes a three-year action plan which includes 43 initiatives and details the government agencies and industry partners that are responsible for delivering them. Queensland Eco and Sustainable Tourism (QuEST) initiative provides basis for management of commercial tourism in Queensland national parks and adjacent State marine parks. However, in implementing this initiative there are concerns about the joint MP permit processes that have been in place over decades as Queensland permits may now require eco-certification and not permit subcontracting. The Queensland Government's management plans identify actions for managing tourism island national parks and state marine parks in the World Heritage Area 	<ul style="list-style-type: none"> Queensland Ecotourism Plan http://www.npsr.qld.gov.au/tourism/pdf/ecotourism-plan-2013.pdf QuEST http://npsr.qld.gov.au/tourism/quest/index.html#what_is_quest Great Barrier Reef Tourism Climate Change Action Strategy 2009-2012 http://www.gbrmpa.gov.au/__data/assets/pdf_file/0/009/3987/gbrmpa_CCActionStrategyFull_2011.pdf Marine Tourism Coordination Framework for Environmental Incidents http://www.gbrmpa.gov.au/our-partners/tourism-industry/tourism-responses-to-environmental-incidents Marine Tourism Contingency Plan – draft awaiting finalisation http://www.gbrmpa.gov.au/our-partners/tourism-industry/tourism-responses-to-environmental-incidents Queensland Management Plans Queensland Management Plans; http://www.npsr.qld.gov.au/managing/plans-strategies/plans.html 	adequate	stable
<p>PL4 Clear, measurable and appropriate objectives for management of commercial marine tourism have been documented</p>	3	<ul style="list-style-type: none"> When completed, the Great Barrier Reef Tourism Management Strategy will provide an overarching tourism strategy for the region Plans of Management, which are generally prepared for intensively used, or particularly vulnerable groups of islands and reefs, and for the protection of vulnerable species or ecological communities, provide clear, measurable and appropriate objectives for the management of tourism in these areas. There are currently three tourism related Plans of Management within the 	<ul style="list-style-type: none"> GBRMPA Strategic Plan 2012-2016 Draft Great Barrier Reef Tourism Management Strategy GBRMP Plans of Management - http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management Draft Great Barrier Reef Strategic Assessment 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Great Barrier Reef Marine Park.</p> <ul style="list-style-type: none"> • The Strategic Plan 2012-2016 identifies the development of a Tourism Management Strategy as one of its deliverable (2.6) • One of the Key Performance Indicators under strategic priority 3 is 'Visitors to the Great Barrier Reef using tourism operators accredited as "High Standard Operators – currently sixty-six per cent of visitors to the Great Barrier Reef Marine Park travel with High Standard Tourism Operators. While this is set as a KPI there is no specific target set for achievement of percentage coverage of tourist visitors to the Reef • There are 62 Eco-certified operators in the Marine Park who participate in the High Standard Tourism Program – 27 Ecotourism level, 34 Advanced Ecotourism level and 129 ECO certified products • The draft Great Barrier Reef Strategic Assessment Demonstration Case Study on the Cairns Planning Area identified a number of aspects such as monitoring and consideration of cumulative impacts, cessation of tourism training and reductions in the field management program where improvements are desirable. 	<p>Report Chapter 9.7</p> <ul style="list-style-type: none"> • GBRMPA quarterly report to Ecotourism Australia July-Sept 2013. 		
<p>PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to commercial marine tourism</p>	<p>3</p>	<ul style="list-style-type: none"> • Eye on the Reef weekly monitoring program reports on the environmental condition of reef sites regularly visited by 23 participating tourism operators. • There is no provision in the Plans of Management or site management plans to ensure appropriate, adequate and systematic monitoring information (of the values) is gathered to assess the efficacy of the planning arrangements to protect the underlying values of the area, or to provide triggers that would lead to a review of the plan or to adaptive management responses to address cumulative impacts. However, there are various marine monitoring programs that are underway (for example AIMS long-term monitoring program, GBRMPA disease and post cyclone monitoring) that contribute to an understanding of reef health in commercial marine tourism areas. • There is no annual compliance program to review the risks associated with permit noncompliance. There is a program for identifying EMC noncompliance. • Draft Great Barrier Reef Tourism Strategy indicates that "one large-scale survey of tourism use has been conducted in the last decade, along with research focused on individual aspects of tourism use. The Tropical Ecosystems Hub of the National Environmental Research Program has a program to establish a long-term socio-economic monitoring program for the Great Barrier Reef, including tourism". While the draft strategy includes 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Report Chapters 3.6, 9.7 • Draft Great Barrier Reef Tourism Management Strategy • Eye on the Reef program - http://www.gbrmpa.gov.au/visit-the-reef/eye-on-the-reef • AIMS Long-term monitoring program 	<p>adequate</p>	<p>improving</p>

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>a number of actions relating to monitoring relevant to tourism, it does not contain any integrated consideration of monitoring needs and processes or establish an overall strategy for tourism monitoring.</p> <ul style="list-style-type: none"> The draft Great Barrier Reef Strategic Assessment Demonstration Case Study on the Cairns Planning Area identified a number of aspects such as monitoring and consideration of cumulative impacts, cessation of tourism interpretation training and reductions in the field management program where improvements are desirable. 			
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address commercial marine tourism	4	<ul style="list-style-type: none"> Stakeholders are engaged in planning processes through Tourism and Recreation Reef Advisory Committee (TRRAC), Local Marine Advisory Committees (LMACs) and other consultative mechanisms including public consultation processes. There is a high level regulatory requirement for stakeholder engagement for Zoning Plans and Plans of Management. There is a high level of stakeholder engagement through public submission requirements for policy development, major tourism project proposals and public meetings for site planning. 	<ul style="list-style-type: none"> TRRAC http://www.gbrmpa.gov.au/our-partners/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee LMACs http://www.gbrmpa.gov.au/our-partners/local-marine-advisory-committees Public consultation webpage http://www.gbrmpa.gov.au/about-us/consultation 	adequate	stable
PL7 Sufficient policy currently exists to effectively address commercial marine tourism	3	<ul style="list-style-type: none"> Zoning plans and Plans of management represent major policy documents but zoning plans are not intended to manage tourism related activities at a fine scale and are of limited use as a tourism management tool. Great Barrier Reef Tourism Management Strategy under development Policies on permits, cruise ships moorings, bareboat operations available The Marine tourism coordination framework for environmental incidents sets out a mechanism for the coordination and facilitation of responses to an environmental incident relevant to the marine tourism industry. Marine Tourism Contingency Plan under review Queensland Government ecotourism and tourism planning policies released as part of DestinationQ. 	<ul style="list-style-type: none"> GBRMPA policies on tourism - http://www.gbrmpa.gov.au/zoning-permits-and-plans/legislation-regulations-and-policies/policies-and-position-statements http://www.nprsr.qld.gov.au/tourism/pdf/ecofacilities-framework.pdf Queensland Ecotourism Plan 2013 – 2020 http://www.nprsr.qld.gov.au/tourism/pdf/ecotourism-plan-2013.pdf DestinationQ Blueprint 2012-2015 http://www.dtesb.qld.gov.au/__data/assets/pdf_file/0019/31618/destQ-blueprint-12-15.pdf 	adequate	stable
PL8 There is consistency across jurisdictions when planning for commercial marine tourism	3	<ul style="list-style-type: none"> The Outlook Report 2009 identified that there was no overarching strategy for the strategic management of tourism and that coordinated management of tourism with other managing agencies should be facilitated. The Great Barrier Reef Intergovernmental Agreement, which was signed in June 2009, provides an overarching structure to ensure consistency across jurisdictions between the Australian and Queensland governments. The draft Tourism Management Strategy has an objective of working in partnership for protection and proposes actions such as working closely 	<ul style="list-style-type: none"> Queensland Ecotourism Plan 2013 – 2020 http://www.nprsr.qld.gov.au/tourism/pdf/ecotourism-plan-2013.pdf QuEST http://nprsr.qld.gov.au/tourism/quest/index.html#wh_at_is_quest 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>with other agencies to streamline, integrate and coordinate planning and permitting requirements to facilitate tourism activities.</p> <ul style="list-style-type: none"> • Queensland Government is introducing Queensland Eco and Sustainable Tourism (QuEST) initiative that will be progressively introduced across key destinations in Queensland (including parts of the Great Barrier Reef Region). This initiative will increase approvals from three to 15 years with a review after 10 years. The impact of these extended periods on the maintenance of tourism standards and transferability of permits is yet to be seen. • There may be inconsistencies developing between QuEST and GBRMPA permit requirements and provisions that may make joint permitting more difficult. 			
PL9 Plans relevant to commercial marine tourism provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	3	<ul style="list-style-type: none"> • There is a strong legislative and regulatory framework in place for existing tourism hotspots but wider planning is reactive rather than proactive. The draft Great Barrier Reef Tourism Management Strategy provides a broader policy framework but little guidance on development of tourism outside of current planning areas. There is no spatially explicit tourism strategy. 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Tourism Management Strategy 	adequate	stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address commercial marine tourism	4	<ul style="list-style-type: none"> • A total of \$7.43 million allocated to COTS control and a further \$1.1 million announced in December 2013 to increase control efforts during the spawning period – will have major benefits for the tourism industry; the program is conducted in association with tourism operators • GBRMPA tourism management funded largely from annual budget through the Tourism and Stewardship Group and Sustainable Funding, but Reef Guardians, Environmental Management Unit and Field Management also contribute significantly, with activities prioritised in the Annual Operating Plan • With few exceptions, every tourist carried by a commercial operator visiting the Marine Park contributes to management through an Environmental Management Charge (EMC) which contributes to slightly less than 20 per cent of GBRMPA's annual budget • GBRMPA, Commonwealth Government Department of the Environment, Department of National Parks, Recreation, Sport and Racing (DNPRSR), Department of Tourism, Major Events, Small Business and the • Commonwealth Games (DTESB), Australian Maritime Safety Authority 	<ul style="list-style-type: none"> • Annual Reports - GBRMPA • Environmental Management Charge - GBRMPA 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		(AMSA), Marine Safety Queensland (MSQ), Queensland Boating and Fisheries Patrol (QBFP), Environment Australia, Tourism Queensland (TQ), Queensland Tourism Industry Council (QTIC), CSIRO, James Cook Univesity (JCU) and AIMS contribute, in some cases quite significantly, financial resources to tourism management			
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address commercial marine tourism	3	<ul style="list-style-type: none"> • GBRMPA tourism policy and engagement: five dedicated FTEs. • GBRMPA planning: No dedicated positions • GBRMPA Permits: Staffing numbers allocated to tourism permits has remained largely static in the last five years. At present approximately eight FTEs, i.e. around 45 per cent of EAM staffing resources, are allocated to tourism related permits. • Permitting processes: During 2012-13 approximately 446 tourism permissions were granted (ref GBRMPA Annual Report 2012-13). Whilst nominated target times have remained the same (80 per cent in eight weeks), significant progress has been made on tourism permit processes to reduce actual processing times such that now most standard tourism permits can be processed in less than four weeks. • Joint Field Management Program review in 2011 concluded that current resourcing is not adequate to maintain existing capacity [for field management activities] over the next five years. • The review has not resulted in increased funding for field management. The forward budget projections remain static at around \$17 million per year. 	<ul style="list-style-type: none"> • Field Management Business Strategy 2014-2018 	adequate	declining
IN3 The right skill sets and expertise are currently available to the managing organisations to address commercial marine tourism	3	<ul style="list-style-type: none"> • There continue to be high levels of in-house skills related to marine tourism management and impact assessment but there is insufficient capacity related to management of mooring and other engineering issues, which has to be outsourced at high cost. • Expertise and skills relating to tourism management is also readily available in other GBRMPA Groups. • Relevant expertise and skills can be outsourced through consultation with Industry and/or other Government and research agencies. • DNPRSR: There are 9 FTEs dedicated for permit management and impact assessment. Over the past 2 years, 5 FTEs have been lost to redundancy and Voluntary Separation Pay losses. Of those, four were funded 100 per cent by the State and one was funded from the Great Barrier Reef Field Management Program. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	adequate	declining
IN4 The necessary biophysical information is currently available to address commercial marine	4	<ul style="list-style-type: none"> • Extensive, up-to-date biophysical information relevant to tourism management is available and readily accessible in a variety of reports, but 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Report 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
tourism		<p>especially in the Draft Great Barrier Reef Strategic Assessment report.</p> <ul style="list-style-type: none"> • Crown-of-thorns starfish outbreaks have been identified as an emerging priority by the National Environment Research Program, which is now funding a range of activities including scientific research and expert workshops. Information on COTS and effective control is important to the tourism industry. 			
IN5 The necessary socio-economic information is currently available to address commercial marine tourism	3	<ul style="list-style-type: none"> • Information on values and satisfaction from surveys of tourists, and an understanding of community benefits and well-being are being developed through Social and Economic Long-Term Monitoring Project (SELTMP) • Information on economic benefits was produced by Deloitte Access Economics in 2013. • Expert advice sought on tourism issues continues to be sought through the Tourism and Recreation Reef Advisory Committee (TRRAC) and the in-house Social Science Unit. 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report Chapters , 5, 6 and 7 • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i> ,Great Barrier Reef Marine Park Authority¹⁹ • SELTMP - NERP Project 10 http://www.nerptropical.edu.au/project/seltmp 	limited	improving
IN6 The necessary Indigenous heritage information is currently available to address commercial marine tourism	3	<ul style="list-style-type: none"> • Increased interaction by GBRMPA with Traditional Owners with new TUMRAs, an Indigenous Reef Advisory Committee and the connection of some LMACs with Traditional Owner groups has increased the Agency's access to traditional knowledge. • Information on significant sites, cultural activities, and cultural mapping is very difficult to obtain. • Indigenous heritage issues are dealt with by (a) consideration of responses to Future Act notifications under the <i>Native Title Act 1993</i> for each permit application, and (b) consideration under assessment criterion 88Q(a) the potential impacts of the conduct proposed to be permitted on the environment and on the social, cultural and heritage values of the Marine Park For some tourism proposals, public advertising and targeted consultation processes may also be used. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	limited	stable
IN7 The necessary historic heritage information is currently available to address commercial marine tourism	3	<ul style="list-style-type: none"> • Historic shipwrecks are protected and access is permitted by Museum of Tropical Queensland • Shipwrecks database is available but is not readily searchable (have to know name of specific vessel, not location-based) and many wrecks are not on the database. • A heritage management plan is in place for Lady Elliot Island, and draft plans for Dent Island and Low Isles – Commonwealth islands with lighthouses and tourism program and or resorts. • Limited tourism operations in areas of high historic heritage significance 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	limited	stable
IN8 There are additional sources of non-government input (for	4	<ul style="list-style-type: none"> • Tourism operators contribute significantly to Reef management largely 	<ul style="list-style-type: none"> • SELTMP - NERP Project 10 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
example volunteers) contributing to address commercial marine tourism		<p>based around the 'Healthy Reef Healthy Industry' ideal and actively engage in the development of management arrangements and monitoring programs.</p> <ul style="list-style-type: none"> • Significant contribution from tourism operators involved in partnership programs (i.e. High Standard Operators, Eye on the Reef Monitoring, Sightings Network, Eyes and Ears Program, Crown-of-thorns Starfish control program). • Community groups such as OUCH (Association of Underwater Coral Heroes) continue to provide voluntary assistance with management of the Great Barrier Reef. • Industry organisations such as Association of Marine Park Tourism Operators (AMPTO), Cod Hole and Ribbon Reef Operators Association (CHARROA), Whitsunday Charter Boat Industry Association (WCBIA), Whitsunday Bareboat Operators Association (WBOA), Low Isles Preservation Society (LIPS) and Conservation Volunteers Australia (CVA) provide input to Great Barrier Reef management. • Tour operators via the Association of Marine Park Tourism Operators (AMPTO) are participating in a COTS control program in high value tourism sites. • Some tour operators have voluntarily set out to reduce greenhouse gas emissions associated with their operations within the Great Barrier Reef. • GBRMPA is involved in the Social and Economic Long-Term Monitoring Project (a NERP project that is designed to capture social and economic information from Great Barrier Reef industries and coastal communities - NERP Tropical Ecosystems Hub Theme 3, Program 10). 	<p>http://www.nerptropical.edu.au/project/seltmphttp://www.nerptropical.edu.au/node/31</p> <ul style="list-style-type: none"> • Tourism COTS control program (see PL2) • Tourism Climate Change Case Studies: <ul style="list-style-type: none"> ○ Reef Friendly Carbon Offsetting ○ Sustainable Island Resorts ○ Reducing Outboard Emissions ○ Certification: Recognising Best Practice ○ Green Purchasing ○ Becoming Carbon Neutral • High Standard Tourism Program http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/how_to_choose_a_tour/certification • Eyes on the Reef - http://www.gbrmpa.gov.au/visit-the-reef/eye-on-the-reef • Eyes and Ears http://www.gbrmpa.gov.au/our-partners/tourism-industry/eyes-and-earsreporting • Sightings network http://www.gbrmpa.gov.au/visit-the-reef/eye-on-the-reef/sightings-network 		
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of commercial marine tourism	4	<ul style="list-style-type: none"> • Tourism operators are actively involved as stewards of the Reef. Through the High Standard Tourism program, operators are increasingly working to voluntary best practice standards in their activities. • In addition, tourism operators are leading the way in responding to climate change by reducing and mitigating their carbon emissions. • The Association of Marine Park Tourism Operators, in partnership with the Authority, has undertaken targeted efforts to control crown-of-thorns starfish. All these actions improve the sustainability of the industry and the health and resilience of the Reef. • There is a high level of coordination between partner agencies (GBRMPA & DNPRSR) through various formal and informal forums including the MPA 	<ul style="list-style-type: none"> • Tourism partners webpage: http://www.gbrmpa.gov.au/our-partners/tourism-industry • TRRAC - http://www.gbrmpa.gov.au/our-partners/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee • RACs - http://www.gbrmpa.gov.au/about-us/reef-advisory-committee • LMACs - http://www.gbrmpa.gov.au/our-partners/local-marine-advisory-committees • Managing agencies - 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Board, Tourism and Recreation Reef Advisory Committee (TRRAC), Local Marine Advisory Committees (LMACs), Joint Permit Working Group, State Wide Tourism Forum and the Whitsunday Parks Forum, Great Barrier Reef National Landscape Committee</p> <ul style="list-style-type: none"> Ongoing tourism industry and community engagement is comprehensive with minimum standards of consultation for amendments to Plans of Management, complemented by engagement through the TRRAC and LMACs, industry associations and individual operator meetings. Ongoing tourism industry engagement occurs through specific partnership programs (i.e. High Standard Tourism, Eye on the Reef Monitoring, Sightings Network, Eyes and Ears compliance program) There is regular liaison with tour operators and industry representatives on site re policy implementation and Marine Park permits. 	<p>http://www.gbrmpa.gov.au/our-partners/queensland-government-agencies</p> <ul style="list-style-type: none"> http://www.gbrmpa.gov.au/our-partners/australian-government-agencies High Standard Tourism Program http://www.gbrmpa.gov.au/visit-the-reef/choose-a-high-standard-operator Eye on the Reef Monitoring http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/our-monitoring-and-assessment-programs/eye-on-the-reef National Landscapes http://www.australia.com/campaigns/nationallandscapes/GreatBarrierReef.htm 		
PR2 The local community is effectively engaged in the ongoing management of commercial marine tourism	4	<ul style="list-style-type: none"> Local communities are engaged through representation at forums/TRRAC/Public meetings /LMACs etc. There are statutory requirements for engaging with the local community in the development of management plans, zoning plans, reviews and for some permit application assessments. Reef Guardians program promotes general engagement of the community with management of the Reef. 	<ul style="list-style-type: none"> Reef Guardians program Great Barrier Reef Marine Park Act requirements re consultation (for example S39ZE) 	adequate	stable
PR3 There is a sound governance system in place to address commercial marine tourism	4	<ul style="list-style-type: none"> Complementary management arrangements between GBRMPA and other agencies including: <ul style="list-style-type: none"> Complementary management (zoning and joint permitting with State Marine Parks) EHP, MSQ Cross-delegations re: compliance and enforcement Committees/forums – RACs, LMACs, etc. Regional staff – DNPRSR, EHP, GBRMPA Joint products (maps, booklet, signs) Tourism operators handbook Linking with Environment Protection and Biodiversity Conservation Act 	<ul style="list-style-type: none"> GBRMP Strategic Plan 2012-2016 Managing agencies - http://www.gbrmpa.gov.au/our-partners/queensland-government-agencies http://www.gbrmpa.gov.au/our-partners/australian-government-agencies High Standard Tourism Program http://www.gbrmpa.gov.au/our-partners/tourism-industry/high-standard-tourism Tourism Operators Handbook http://onboard.gbrmpa.gov.au/ 	adequate	stable
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness	3	<ul style="list-style-type: none"> There is no provision in the Plans of Management or site management plans to ensure appropriate, adequate and systematic monitoring information (of the values) is gathered to assess the efficacy of the planning arrangements to protect the underlying values of the area, or to provide 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop Draft Great Barrier Reef Strategic Assessment Report 	limited	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
of tools, to gauge progress towards the objective(s) for commercial marine tourism		<p>triggers that would lead to a review of the plan or to adaptive management responses to address cumulative impacts</p> <ul style="list-style-type: none"> • Some level of performance monitoring is achieved through Annual Reports and Field Management Program reporting mechanisms • Compliance auditing of tourism permits is very limited (3-5/year) and mostly find some level on non-compliance • Strategic Assessment and Outlook processes provide monitoring and evaluation at a high level • SELTMP is providing relevant monitoring data • The COTS control program has contract performance measures (post voyage reporting, 3, 6 and 12 month reporting and MERI reporting) and a site selection strategy to ensure cull efforts are adequate, efficient and effective and are targeting priority reefs to achieve the protection of key reef tourism sites from coral damaged caused by COTS. 			
PR5 Appropriate training is available to the managing agencies to address commercial marine tourism	3	<ul style="list-style-type: none"> • Although there is no specifically targeted program of training for GBRMPA staff, opportunities were available for staff to participate in general training as well as attending workshops, seminars and conferences related to tourism in the Great Barrier Reef. • In decision making GBRMPA will outsource expertise to peer review or provide expert opinion on particular commercial tourism activities / structures 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	limited	stable
PR6 Management of commercial marine tourism is consistently implemented across the relevant jurisdictions	3	<ul style="list-style-type: none"> • Joint compliance and permitting systems in place although the Queensland QuEST proposals have created inconsistencies that need to be addressed • Renewed Intergovernmental Agreement in 2009 replaces and updates the Emerald Agreement. This agreement establishes these new arrangements, clearly articulating objectives, respective functions and accountabilities. • Potential for incompatibility between Queensland Government Ecotourism and coastal development objectives and requirements to halt and reverse southern inshore Great Barrier Reef degradation • While issues of inshore Great Barrier Reef degradation, water quality and climate change issues are identified in the draft Great Barrier Reef Tourism Management Strategy, there is little in the way of explicit strategies or actions to address these concerns, particularly in relation to the nature and scale of tourism development. 	<ul style="list-style-type: none"> • Joint permitting system http://www.gbrmpa.gov.au/zoning-permits-and-plans/permits • Compliance and enforcement http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/field-management-of-the-great-barrier-reef-marine-park • Great Barrier Reef Intergovernmental Agreement http://www.environment.gov.au/coasts/gbr/publications/pubs/gbr-agreement.pdf • Queensland Ecotourism Plan http://www.nprsr.qld.gov.au/tourism/pdf/ecotourism-plan-2013.pdf • QuEST: http://www.nprsr.qld.gov.au/tourism/quest/index.html 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
PR7 There are effective processes applied to resolve differing views/conflicts regarding commercial marine tourism	4	<ul style="list-style-type: none"> Statutory process for appealing tourism permit decisions (reconsideration - internal review and then Administrative Appeals Tribunal (AAT) – Commonwealth, Magistrates Court - Queensland) Regular meetings of Government agencies, industry groups (AMPTO, etc) and advisory committees (TRRAC, LMAC, etc) are used as a forum to resolve differing views. Consultation for site arrangements also provide opportunities to resolve differing views or conflicts. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	adequate	stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with commercial marine tourism are appropriately considered.	3	<ul style="list-style-type: none"> Permit assessments consider direct and indirect impacts Eye on the Reef and other monitoring programs associated with tourism provide relevant data on potential tourism impacts. GBRMPA policy "Managing Tourism Permissions" limited the latency associated with unused permits, and thereby potential cumulative impacts, by implementing use it or lose it principles. Cumulative impacts from tourism generally dealt with through statutory instruments such as Plans of Management or policies such as site management plans but these are only periodically updated so may not be responsive to impacts that emerge 	<ul style="list-style-type: none"> Plans of Management: <ul style="list-style-type: none"> Cairns Hinchinbrook Whitsundays Site management arrangements - http://www.gbrmpa.gov.au/corp_site/management/site_management Permits - http://www.gbrmpa.gov.au/onboard/home/permits Policies – Managing tourism permissions– http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/management/policies/permits_policy 	limited	stable
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding commercial marine tourism	4	<ul style="list-style-type: none"> GBRMPA endeavours to build on best available biophysical and monitoring research information to make relevant management decisions, including monitoring information provided by tourism operators themselves through the Eye on the Reef Program. Compilation of relevant biophysical information has been significantly enhanced through the Outlook and Strategic Assessment processes. Nevertheless, when permit applications are received there is often a lack of site-specific data on which the assessing officer can rely. 	<ul style="list-style-type: none"> Eye on the Reef 	adequate	stable
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding commercial marine tourism	3	<ul style="list-style-type: none"> Improvements evident through SELTMP will improve over time as the program develops. Compilation of relevant socio-economic information has been significantly enhanced through the Outlook and Strategic Assessment processes 	<ul style="list-style-type: none"> SELTMP - NERP Project 10 http://www.nerptropical.edu.au/project/seltmp 	limited	improving

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding commercial marine tourism	3	<ul style="list-style-type: none"> Contemporary knowledge is sourced and used in the development of tourism related plans, policies and permit assessments. Standard tourism permit assessment required native title referral providing the opportunity for Traditional Owners and representative bodies to comment on the possible grant of a permit; and the permit assessment criteria require consideration of the need to protect the cultural and heritage values of Traditional Owners. Indigenous Reef Advisory Committee is consulted on relevant tourism management decisions to provide an opportunity for inclusion of any traditional knowledge. There is an Indigenous representative on the Tourism and Recreation RAC to provide input into tourism policy development. Development of the Reef Facts for Tour Guides: Traditional Owners and the Great Barrier Reef. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	limited	improving
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding commercial marine tourism	3	<ul style="list-style-type: none"> Historic shipwrecks are protected and access is permitted by Museum of Tropical Queensland A heritage management plan is in place for Lady Elliot Island, and draft plans for Dent Island and Low Isles Commonwealth islands with lighthouses and tourism programs and/or resorts Limited tourism operations in areas of high historic heritage significance 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	limited	stable
PR13 Relevant standards are identified and being met regarding commercial marine tourism	4	<ul style="list-style-type: none"> GBRMPA's approach to tourism management in partnership is regarded as 'best practice internationally' (for example Winner of World Travel and Tourism Council's Tourism for Tomorrow Award 2007. Responsible Reef Practices are published on the GBRMPA website and cover many activities associated with marine tourism (for example, anchoring and mooring, fishing, diving and snorkelling). These practices are reiterated through the high standard tourism program and permits and embedded though actionable compliance when incidents are observed through the Eyes and Ears program or through other means. GBRMPA is widely regarded as world leader in tourism management and consistently applies relevant national standards as the minimum basis for management. Eco-certification for recognising high performing tourism operations. Involvement in the High Standard Tourism Operators program continues to grow GBRMPA encourages operators to achieve Climate Action Certification standards 	<ul style="list-style-type: none"> List of high standard operators: http://www.gbrmpa.gov.au/visit-the-reef/choose-a-high-standard-operator/high-standard-tourism-operation International recognition Tourism for Tomorrow Award winner in 2007 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> The outstanding universal value of the Great Barrier Reef could be better presented by many tourism operators. The Reef Discovery course for tour operators developed by GBRMPA is no longer being delivered due to a lack of long-term resourcing for the course – this is likely to affect the consistency and quality of information delivered to reef visitors. Field Management Unit Compliance Quarterly Report (Apr-Jun 2013) indicates moderate levels of tourism industry infringements Compliance auditing of tourism permits is very limited (3-5/year) and mostly find some level on non-compliance 			
PR14 Targets have been established to benchmark management performance for commercial marine tourism	3	<ul style="list-style-type: none"> The Strategic Plan 2012-2016 identifies the development of a Tourism Management Strategy as one of its deliverables for 2012-3 (2.6) – Strategy is under development but not yet completed and released for public comment One of the Key Performance Indicators under strategic priority 3 is ‘Visitors to the Great Barrier Reef using tourism operators accredited as “High Standard Operators” - currently 66 per cent. This is also a key performance indicator in the Portfolio Budget Statement. 	<ul style="list-style-type: none"> GBRMPA Strategic Plan 2012-2016 - http://www.gbrmpa.gov.au/about-us/strategic-plans 	limited	stable
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for commercial marine tourism	3	<ul style="list-style-type: none"> GBRMPA’s Strategic Plan 2012-2016 identifies the development of a Tourism Management Strategy as one of its deliverables for 2012-3 (2.6) – Strategy is under development but not yet completed and released for public comment A targeted effort to control crown-of-thorns starfish was undertaken in line with a contract between GBRMPA and AMPTO in 2012-2013. This program has been extended with additional resources to June 2015. Implementation of programs is detailed in the GBRMPA Annual Report and include: <ul style="list-style-type: none"> continued growth in the High Standard Tourism Program with 60 operators carrying 66 per cent of visitors to the Marine Park, compared with 51 per cent in 2009 assessment of special tourism and mooring permissions to make some of these capped opportunities available (an expression of interest process was advertised in October 2013) Delivery of training for the Eye on the Reef Tourism Weekly Monitoring program. Progression of a draft policy on Marine Tourism Contingency Plan The management of tourism in Queensland state national parks and marine 	<ul style="list-style-type: none"> GBRMPA Annual Report http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/2801/1/GBRMPA_Annual_per_cent20Report_2012_2013.pdf QLD Ecotourism Plan http://www.npsr.qld.gov.au/tourism/pdf/final-ecotourism-plan-2013.pdf 	limited	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		parks is being progressed in accordance with the Queensland Ecotourism Plan 2013-2020.			
OP2 Implementation of management documents and/or programs relevant to commercial marine tourism have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> • GBRMPA <ul style="list-style-type: none"> ○ Targeted control of COTS was met in line with contract timelines. ○ There has been some delay in developing draft Tourism Management Strategy due to the competing priorities of the Strategic Assessment and the COTS program. ○ There has been some delay in developing the draft policy on Marine Tourism Contingency Plan due to public consultation and implementation complications. The policy is now awaiting final MPA approval. • Management of ecotourism is being progressed in line with the Queensland Ecotourism Plan 2013-2020 (refer Destination Q report card) 	<ul style="list-style-type: none"> • GBRMPA Annual Report http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/2801/1/GBRMPA_Annual_per_cent20Report_2012_2013.pdf • http://www.destq.com.au/__data/assets/pdf_file/0009/96327/DestinationQ-ReportCard.pdf 	limited	stable
OP3 The results (in OP1 above) have achieved their stated management objectives for commercial marine tourism	3	<ul style="list-style-type: none"> • Field Management Unit Compliance Quarterly Report (Apr-Jun 2013) indicates moderate levels of tourism industry infringements including a number of breaches that can have significant environmental impact. Responding to such incidents is largely dependent on QPWS on-water patrols, but Field Management Review indicates that patrol capacity declined by 20 per cent between 2005-6 and 2010-11. • There is a strong management framework and program in place for existing tourism hotspots but tourism management elsewhere is reactive rather than proactive. • GBRMP Regulations provided the ability to review and if necessary, change tourism permit conditions to address emerging signs of cumulative impacts. • GBRMPA policy "Managing Tourism Permissions" limits the latency associated with unused permits, and thereby potential cumulative impacts, by implementing "use it or lose it" principles. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop • Field Management Unit reports • GBRMPA Policy on "Managing Tourism Permissions" - http://www.gbrmpa.gov.au/about-us/legislation-regulations-and-policies/policies-and-position-statements 	adequate	stable
OP4 To date, products or services have been produced in accordance with the stated management objectives for commercial marine tourism	4	<ul style="list-style-type: none"> • The Authority's products and services related to tourism are generally implemented in accordance with objectives identified in GBRMPA Strategic Plan and Agency AOP • Partnership Programs, such as Eye on the Reef, have been improved and integrated with updated sheets, a user-friendly data portal and the provision of in-person and online training • Growth of the High Standard Tourism program achieved with 62 operators recognised as high standard and who carry over 66 per cent of visitors to 	<ul style="list-style-type: none"> • Strategic Plan 2012-2016 • Eye on the Reef program http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/our-monitoring-and-assessment-programs/eye-on-the-reef • Tourism Climate Change Action Strategy • Marine Tourism Coordination Framework for Environmental Incidents 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>the Reef.</p> <ul style="list-style-type: none"> • Some delay in developing GBRMPA Strategy for Tourism and other policies review due to resourcing. • Public comment on the draft policy for the Marine Tourism Contingency Plan was received and the Marine Park Authority Board approval was to be sought at the November MPA meeting (meeting postponed) • A suite of products relating to climate change action including an updated online tourism emissions calculator and a series of climate change case studies. • Further work on the Reef Facts for Tour Guides (Climate Change and the Great Barrier Reef (revised) and Traditional Owners and the Great Barrier Reef (developed) 	<ul style="list-style-type: none"> • DRAFT Marine Tourism Contingency Plan • Great Barrier Reef as National Landscape • Climate action products: http://www.gbrmpa.gov.au/our-partners/tourism-industry/tackling-climate-change • Reef Facts for Tour Guides • http://www.gbrmpa.gov.au/_data/assets/pdf_file/0016/11257/4-Traditional-Owners-of-the-Great-Barrier-Reef.pdf • http://www.gbrmpa.gov.au/_data/assets/pdf_file/0012/4332/3-climate-change-2010.pdf • High Standard Tourism Program http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/how_to_choose_a_tour/certification • Cruise ship http://www.gbrmpa.gov.au/_data/assets/pdf_file/0019/25570/anchorages_and_transit_corridors_Nov_06.pdf • Moorings - http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/management/moorings • Position statements <ul style="list-style-type: none"> ○ Coral Transplantation ○ Indigenous Tourism ○ Commercial Jet Ski operations at Magnetic Island ○ Artificial Reefs • Partnership programs • COTS http://www.gbrmpa.gov.au/corp_site/info_services/publications/sotr/latest_updates/cots/part_03.html • Onboard website http://www.gbrmpa.gov.au/onboard/home • Reef Facts for Tour Guides http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/publications-facts • Tourism newsletter 		

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
			http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/publications - Newsletters		
OP5 Effective knowledge management systems regarding commercial marine tourism are in place within agencies	4	<ul style="list-style-type: none"> • EMC online in place to manage Environmental Management Charge (EMC) payments and visitation data • Permit query for the public is also online. • Reef Permits database for permitting arrangements is in place, and is hoped to be moving towards an online Reef Management System (for example online applications, etc). • Tools to disseminate information about values and impacts on them are available, and undergoing development to improve service delivery – for example the integrated Eye on the Reef program to provide a centralised database for reef health information, Reef Explorer is an interactive tool for displaying spatial information • Spatial information and datasets arising from research conducted on in the Marine Park are housed and managed by the GBRMPA Spatial Data Centre 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop • Eye on the Reef program http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/our-monitoring-and-assessment-programs/eye-on-the-reef 	adequate	stable
OP6 Effective systems are in place to share knowledge on commercial marine tourism with the community	4	<ul style="list-style-type: none"> • Onboard: The Tourism Operator’s Handbook to the Great Barrier Reef is a website developed for tourism operators about Marine Park rules, permits and best practice. • Information about tourism on the Great Barrier Reef and visitation is on the GBRMPA corporate website. • Communication through plain-English products summarising outcomes of scientific research is undertaken to some extent, but not systematically. • e-Library (GBRMPA external website) provides access to publications • Tourism Australia provides online access to tourism statistics 	<ul style="list-style-type: none"> • Onboard-Tourism Operator's Handbook • GBRMPA public interface of the permits database: http://www.gbrmpa.gov.au/corp_site/permits/pems_public/dsp_index.cfm 	limited	stable
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing commercial marine tourism and moving towards the attainment of the desired outcomes.	4	<ul style="list-style-type: none"> • Management of tourism in the Great Barrier Reef Marine Park is being effectively addressed through: <ul style="list-style-type: none"> ○ current programs delivered by the Tourism and Recreation section ○ regular consultation with industry, other management agencies and the general public ○ management plans and policies developed and implemented to manage the potential impacts of tourism and to ensure tourism activities are sustainable 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Report Chapter 5.4.2 • Great Barrier Reef Field Management Quarterly Report Apr-Jun 2013 • Joint Field Management Program Review 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Intensive management of major use area (primarily offshore Cairns and Whitsundays), limits on the number of vessels and group sizes, an increase in supporting infrastructure and the adoption of best practices by operators, major impacts of tourism have been avoided or mitigated and are generally low risk Tourism related infringements remain relatively common and may be exacerbated by increasing competition in the industry and a decline in field management presence. 			
OC2 The outputs relating to commercial marine tourism are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> Launch of the Great Barrier Reef as a National Landscape on 2 March 2012 enhances the insurance that values of the Great Barrier Reef are advocated for and protected Great Barrier Reef Tourism Management Strategy in preparation Outputs are largely on track with values protected including: <ul style="list-style-type: none"> natural and cultural values through the Plans of Management, policies and Marine Parks permits some iconic and endangered species that are important to tourism are provided additional protection through legislation coral through use of public moorings and no-anchoring areas Uptake of best practice ecotourism and climate change action are working to minimise tourist industry impacts on values COTS control program in association with AMPTO 	<ul style="list-style-type: none"> GBRMP Plans of Management High Standard Tourism Program http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/how_to_choose_a_tour/certification Cruise ship http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/25570/anchorages_and_transit_corridors_Nov_06.pdf Moorings - http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/management/moorings Position statements Coral Transplantation Indigenous Tourism Commercial Jet Ski operations at Magnetic Island Artificial Reefs Partnership programs http://www.gbrmpa.gov.au/about-the-reef/animals/crown-of-thorns-starfish/management-strategies 	limited	stable
OC3 the outputs (refer OP1 and 3) for commercial marine tourism are reducing the major risks and the threats to the Great Barrier Reef	4	<ul style="list-style-type: none"> Risks to the Great Barrier Reef from tourism activity have been significantly reduced through management and education including: <ul style="list-style-type: none"> increased understanding of climate change by tourism operators and ways for operators to address climate change through certification improved management of tourism impacts through permit assessments, high standard tourism program and Eye on the Reef training 	<ul style="list-style-type: none"> Marine Tourism Coordination Framework for Environmental Incidents Marine Tourism Contingency Plan Marine Tourism COTS Control Program Tourism and climate change: a framework for action http://www.ret.gov.au/tourism/policy/tourism_climate_change_framework_for_action/Pages/Tourisman 	adequate	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> ○ improved environmental management systems through business process analysis ○ greater compliance reporting from tourism operators through Eyes and Ears Program ○ reduced conflict of use through the Zoning Plan, Plans of Management, public advertising processes and Site Plans ○ accreditation of tourism operators for high environmental standards, incentives for achieving high standards and a complete audit process to ensure standards are maintained and retain their high value. ● Eye on the Reef monitoring program provides data on reef condition and trend that can inform responses to risks and threats to the Reef ● Threats associated with extreme weather events and environmental incidents will be reduced through implementation of the Marine Tourism Coordination Framework and Marine Tourism Contingency Plan ● The COTS control program is a short-term response to the COTS threat and will be expanded over the spawning season with the addition of a second vessel. From July 2014-15 the Reef and Rainforest Research Centre will receive additional funding to increase the control efforts managed by the GBRMPA. 	<p>dClimateChangeAFrameworkforAction.aspx</p> <ul style="list-style-type: none"> ● Ecotourism Australia climate certification http://www.ecotourism.org.au/climate_action.asp?id=1017 ● http://www.gbrmpa.gov.au/about-the-reef/animals/crown-of-thorns-starfish/management-strategies 		
OC4 Use of the Great Barrier Reef relating to commercial marine tourism is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> ● The 2009 assessment noted that 45 per cent of all visitors to the Reef were carried on High Standard tourism operations. This has risen to 66 per cent in 2013 carried by 62 certified operators. ● The Authority's resources are directed at ensuring tourism was environmentally sustainable by: developing tourism management arrangements, managing tourism permits, environmental impact assessments, planning, compliance and enforcement, maintenance of supporting infrastructure, research, collection of EMC and reporting ● Draft Great Barrier Reef Strategic Assessment indicates that reduced profitability across the industry has resulted in limited maintenance, repair and replacement of tourism structures and facilities. Tourism operators are less able to comply with maintenance of their facilities, which in turn increases the risks on the environment should extreme weather eventuate. ● The Reef-based tourism industry is very concerned about the impacts of climate change on its businesses and livelihoods, including degradation of reef sites, poor recovery of bleached sites as a result of other stresses, and a loss of marketing appeal as a high-quality reef destination. ● Tourism related infringements remain relatively common and may be 	<ul style="list-style-type: none"> ● Draft Great Barrier Reef Strategic Assessment Report Chapter 5.4.2 ● Great Barrier Reef Field Management Quarterly Report Apr-Jun 2013 ● Joint Field Management Program Review 	limited	stable

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		exacerbated by increasing competition in the industry and a decline in field management presence.			
OC5 Use of the Great Barrier Reef relating to commercial marine tourism is demonstrably economically sustainable	3	<ul style="list-style-type: none"> Given the slowing pace of world growth and the current global economic uncertainty, forecasts for inbound tourism remain moderate but positive. Growth in international visitors will be aided by the falling value of the A\$. Forecasts for domestic tourism have also been revised upward. The decline in tourism has forced some operators to close business and put extra pressure on remaining operators to run more cost effectively which in turn has led to an increase in non-compliance in some areas. It has also increased the extent of permit latency. There has been some growth in the industry in 2012. To assist businesses in the short term, the Australian Government reduced the EMC from \$6.00 down to \$3.50 per passenger for a period of three years from 1 April 2012. The decline in visitation numbers and in actual EMC \$ has impacted on the Authority's budget and its management of tourism. The Reef-based tourism industry is very concerned about the impacts of climate change on its businesses and livelihoods, including degradation of reef sites, poor recovery of bleached sites as a result of other stresses, and a loss of marketing appeal as a high-quality reef destination. 	<ul style="list-style-type: none"> Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Marshall, N.A., Bohensky, E., Curnock, M., Goldberg, J., Gooch, M., Pert, P.L., Scherl, L., Stone-Jovicich, S., Tobin, R.C. (2013) A social and economic long-term monitoring program for the Great Barrier Reef. Key Findings 2013. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns 	adequate	stable
OC6 Use of the Great Barrier Reef relating to commercial marine tourism is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> The Reef-based tourism industry is very concerned about the impacts of climate change and dredging/port development on its businesses and livelihoods, including degradation of reef sites, poor recovery of bleached sites as a result of other stresses, and a loss of marketing appeal as a high-quality reef destination. The Reef HQ Aquarium provides an avenue to enhance community understanding of the Great Barrier Reef. It surpassed a 20-year visitation record in 2011-12 receiving 145,000 visitors and has consistently met visitor expectations while promoting World Heritage values of the Great Barrier Reef to a wide range of visitors. It is continuing to add innovative programs of wider community engagement. Outlook Report 2009 noted that 80 per cent of visitors to the Reef were either satisfied or very satisfied with the experience; that there was improved understanding of tourism and its management arrangements through greater transparency regarding management; that improved presentation of the Reef to visitors was leading to greater understanding of the Marine Park; and there was greater understanding of the threats to the Marine Park by tourism operators. 	<ul style="list-style-type: none"> Feedback to GBRMPA during community consultation phase for the Strategic Assessment and requests for information and responses to letters. SELTMP, NERP Project 10 http://www.nerptropical.edu.au/project/seltmp 	limited	increasing

Component of management of commercial marine tourism	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> The strongest values of the Great Barrier Reef among tourists (based on ratings of agreement with a range of statements) were: (1) biodiversity values (i.e. "the Great Barrier Reef supports a variety of life, such as fish and corals"; mean rating = 8.97/10), (2) the Reef's aesthetic beauty ("the aesthetic beauty of the Great Barrier Reef is outstanding"; 8.95), (3) the Great Barrier Reef's World Heritage status ("I feel proud that the Great Barrier Reef is a World Heritage Area"; 8.76), (4) the Great Barrier Reef's scientific and educational values ("I value the Great Barrier Reef because we can learn about the environment through scientific discoveries"; 8.28), and (5) lifestyle values ("I value the Great Barrier Reef because it supports a desirable and active way of life"; 8.04).(SELTEMP Tourist survey 2013) 			
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address commercial marine tourism	4	<ul style="list-style-type: none"> A strong and active partnership with the tourism industry has been maintained with tourism actively engaged and supportive of the management of the Reef and the GBRMPA. The administrative burden on tourism operators has been reduced through simplification and increased flexibility of tourism management arrangements. LMACs, RACs provide a consultation forum AMPTO works closely with managers, including on programs such as COTS control 	<ul style="list-style-type: none"> TRRAC - http://www.gbrmpa.gov.au/our-partners/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee LMACs - http://www.gbrmpa.gov.au/our-partners/local-marine-advisory-committees AMPTO - http://www.ampto.com.au/ 	adequate	stable

Table 22 Calculation of grades for defence activities

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to Defence activities are understood by managers	4	<ul style="list-style-type: none"> The Great Barrier Reef is a multiple use area and is used extensively for Australia's Defence training programs, directly contributing to the training and operations of Australia's Defence services. The Department of Defence (DoD) contributes to providing for security and border protection, assists with quarantine and fisheries enforcement, hydrographic survey and general surveillance, all of which contribute, to varying degrees, to the overall mix of management and protection of values for the Great Barrier Reef. Defence also contributes some data to GBRMPA about species and other attributes that underpin MNES, such as seagrass, turtles and dugong. Those in GBRMPA involved in managing Defence use understand existing Defence capability and training requirements. New maritime capabilities (Air Warfare Destroyers (AWD) and Landing Helicopter Dock (LHD) ships) are being acquired and the frequency and intensity of use of the Great Barrier Reef training areas by these new platforms is not yet known. LHDs in particular have significant new littoral warfare capabilities and the need for enhanced amphibious lodgement training has yet to be evaluated. There is some potential for changes in the scale and nature of activities undertaken by Singapore at Shoalwater Bay Training Area (SWBTA) with some recent involvement of the Singapore Navy in Exercise Wallaby and interest in conducting amphibious lodgement. Singapore Defence Forces have different equipment, doctrine and procedures to Australian Defence Forces 	<ul style="list-style-type: none"> GBRMPA website on Defence: http://www.gbrmpa.gov.au/about-the-reef/Managing-multiple-uses/Defence 2006 and 2013 (Updated) Strategic Environmental Assessment of Defence Activities in the GBRWHA http://www.gbrmpa.gov.au/data/assets/pdf_file/0013/7051/strategic_env_assessment_Defence.pdf.pdf 2010-2014 Defence Strategic Environmental Plan: http://www.Defence.gov.au/Environment/strat_plan.pdf 2013 Talisman Sabre Public Environment Report: http://www.Defence.gov.au/opEx/exercises/ts13/docs/PER.pdf DoD information on MNES (seagrasses, saltmarshes and mangroves): http://www.Defence.gov.au/environment/swbta/Defence SOE report chapter 7f.pdf DoD information on MNES (marine fauna): http://www.Defence.gov.au/environment/swbta/Defence per cent20SOE per cent20report chapter per cent209f.pdf Assessment of UXO at JBR (AECOM - Defence Report) (final due November 2013) GBRMPA/Defence Management arrangement http://www.gbrmpa.gov.au/data/assets/pdf_file/0009/29673/GBRMPA_management_agreement_defence.pdf <p>Environmental Assessment of Republic of Singapore Navy's Proposed Activities for Wallaby Series</p>	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>(ADF), although overall potential environmental risks are similar. Defence Environmental staff undertake briefings on Exercise Wallaby for GBRMPA managers.</p> <ul style="list-style-type: none"> Maintaining the expertise and number of Defence staff engaged in environmental management on training ranges and in policy areas is important to ensure Defence has capacity to undertake compliance monitoring and enforcement of conditions attached to exercise approvals within the Great Barrier Reef Region. Legacy unexploded ordnance (UXO) contamination is an emerging issue with limited information publically available about the extent or any plan to undertake programmed remediation similar to the management of other forms of contamination. 	<p>Exercises (URS 2009)</p> <ul style="list-style-type: none"> Defence has a dedicated and specialist environmental impact assessment unit (the Directorate of Environmental Protection and Assessments - DEPA) to ensure compliance with regulatory and internal Defence requirements such as Environmental Clearance Certificates, Environmental Assessment Reports and Environmental Reports DEPA has established a dedicated compliance unit and will conduct audits on EPBC approvals and permits. 		
CO2 The current condition and trend of values relevant to Defence activities are known by managers	4	<ul style="list-style-type: none"> Defence activities that occur within the Great Barrier Reef Region are managed by GBRMPA under the Management Agreement taking account of Strategic Environmental Assessments that Defence developed in collaboration with the GBRMPA. These documents identify the direct and indirect impact associated with a specific suite of Defence activities and describe how they will be mitigated. Defence undertakes some routine environmental monitoring of land condition, water quality and exercise related impacts – particularly at SWBTA where there are a number of impact areas including on Commonwealth Islands. In addition Defence undertakes specific research projects into environmental issues relevant to Defence capability for example Surveys have been undertaken in SWBTA into seagrass, dugong and turtle numbers and distribution, contamination assessments have been undertaken at Triangular Island and monitoring has been done to detect the presence of sensitive beaked whales in deep water adjacent to the Great Barrier Reef. GBRMPA also uses the provisions of Zoning Plans to implement additional management controls in accordance with Part 5 of the Zoning Plan. GBRMPA take into account 	<ul style="list-style-type: none"> Major Exercise management plans 2013 Strategic Assessment of Defence Activities (EcoLogical) Defence Instruction General 40-3 Environmental Impact Assessment Contaminated site assessments of Defence sites in Qld – details can be viewed online at: http://www.defence.gov.au/id/derp/qld.asp 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>the potential impacts of the activities and develop plans for specific controls with Defence for planned activities. This mechanism has been used a number of times since 2012 for exercise and infrastructure proposals.</p> <ul style="list-style-type: none"> • The indirect behavioural impacts associated with noise (such as from underwater detonations) on species such as inshore dolphins and dugongs have not been extensively studied and the impacts that might be associated with displacement of sensitive species from important habitat during major exercises or prolonged training serials may warrant further consideration. • Royal Australian Navy (RAN) ships are fuelled by diesel except the oiler HMAS <i>Sirius</i>. Both HMAS <i>Sirius</i> and the tanker HMAS <i>Success</i> are double-hulled ships in accordance with International Maritime Organisation regulations. RAN policy routes HMAS <i>Sirius</i> on northern transits outside the Great Barrier Reef. • US nuclear powered warships (mainly submarines) do enter the Great Barrier Reef during exercises or on transit to approved ports. The potential for nuclear-powered vessel accident releasing radiation is considered remote and is encompassed in existing risk assessment. • All exercises are subjected to environmental risk assessment as part of the planning process. Management relies on the military adhering to environmental controls set out in Range Standing Orders, Operation Orders, Exercise Instructions, Environmental Clearance Certificates as well as the strong presence from Defence Environmental managers for monitoring and compliance enforcement. 			
CO3 Impacts (direct, indirect and cumulative) associated with Defence activities are understood by managers.	3	<ul style="list-style-type: none"> • New activities are covered by internal Defence environmental assessments including analysis of risks through Environmental Clearance Certificate (ECC) process, guided by requirements of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). Depending upon scale, this process does not always involve GBRMPA and relies on professional environmental expertise within Defence to identify and recommend 	<ul style="list-style-type: none"> • Policy for environmental impact assessments described in DI(G) 40-3 • GBRMPA–Defence Management Agreement 2012-2016 • Defence Environmental Strategic Plan 2010-2014 http://www.defence.gov.au/environment/strat_plan.pdf • 2013 Talisman Saber Public Environment Report: http://www.aurecongroup.com/~media/Files/Download 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>mitigation for impacts. For larger scale activities GBRMPA is always consulted in accordance with the GBRMPA–Defence Management Agreement 2012-2016.</p> <ul style="list-style-type: none"> Competing demands for resources within Defence may compromise the effectiveness of this process. 	<ul style="list-style-type: none"> ds Library/2013/Final PER Nov 2012 complete.pdf Shoalwater Bay State of the Environment Report http://www.defence.gov.au/environment/swbta_report.htm 		
CO4 The broader (national and international) level influences relevant to Defence activities are understood by managers.	4	<ul style="list-style-type: none"> See CO2 above – in particular the Shoalwater Bay draft research project outputs. The current condition and trend of some species in Defence areas are well known (for example turtles and seagrass) however in general there is still a paucity of information on the current condition and trend of MNES in Defence areas, and of particular significant taxa, such as inshore dolphins. GBRMPA/Defence partnerships will continue to monitor the condition and trend of MNES in Defence areas (before, during and after exercises). No coherent plan exists for the monitoring and/or remediation of UXO in Great Barrier Reef Region. Defence investigated risks associated with a known UXO dump site at John Brewer Reef in 2013. This may serve as a model for future investigations. Capacity for Defence managers to verify compliance with conditions imposed on use is stretched with resource constraints and staffing pressures which may affect GBRMPA capacity to manage Defence issues. 	<ul style="list-style-type: none"> Shoalwater Bay draft research project outputs. RAN ship management protocols for example Maritime Activities EMP and RAN policy for example HMAS Sirius not transiting through the GBR Investigation of WWII munitions dump at John Brewer Reef 	Adequate	Stable
CO5 The stakeholders relevant to Defence activities are well known by managers.	4	<ul style="list-style-type: none"> Defence generally liaises with GBRMPA and the QPWS closely in relation to its specific activities in the Great Barrier Reef. Defence produces Public Environment Reports for the Talisman Sabre(er) exercises and liaison with stakeholders for this exercise, including interested members of the public, is extensive. No public environmental reporting has been produced for the major annual Singaporean Exercise Wallaby. These exercises are subjected to the same internal Defence environmental assessment and approval processes as ADF activities. 	<ul style="list-style-type: none"> Defence environmental strategic plan http://www.defence.gov.au/environment/strat_plan.pdf 2013 Talisman Saber Public Environment Report: http://www.aurecongroup.com/~media/Files/Downloads Library/2013/Final PER Nov 2012 complete.pdf Shoalwater Bay State of the Environment Report http://www.defence.gov.au/environment/swbta_report.htm 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
PLANNING					
PL1 There is a planning system in place that effectively addresses Defence activities	4	<ul style="list-style-type: none"> The ADF doctrine (for example DI(G) ADMIN 40-2 and 40-3) outlines responsibilities for the planning and implementation of environmental protection measures during the planning and conduct of exercises, in terms of protecting areas for future use, maintaining public confidence and compliance with statutory requirements including the <i>Great Barrier Reef Marine Park Act 1975</i> and the <i>Environment Protection and Biodiversity Conservation Act 1999</i> and other relevant legislation and policy (for example MARPOL) Range Standing Orders outline the processes for approval and execution of activities within training areas. 	<ul style="list-style-type: none"> Defence Instructions General DI(G) ADMIN 40-2 and 40-3 http://www.defence.gov.au/environment/impact.htm 	Adequate	Stable
PL2 The planning system for Defence activities addresses the major factors influencing the Great Barrier Reef Region's values.	3	<ul style="list-style-type: none"> Defence has a comprehensive environmental impact assessment process in place. Defence works with GBRMPA as a stakeholder in developing appropriate management plans and controls for Defence activities. Defence notifies GBRMPA when any new activity, which is not already covered by Defence's environmental management system, is intended to be undertaken within the Great Barrier Reef Marine Park. In this instance, GBRMPA may wish to issue a Part 5 Direction to include any additional mitigation measures for the activity. Legacy UXO contamination is not systematically addressed. Defence/Commonwealth UXO policy does not align with contemporary best practice with respect to pollution or environmental risk management. 	<ul style="list-style-type: none"> Defence web pages for Talisman Saber exercise http://www.defence.gov.au/exercises/ts07/environment.htm Part 5 direction for Triangular Island Maritime Warfare Facility Construction (included Part 5 direction, letter to Defence, Environmental Clearance Certificate and the Environmental Review and Management framework – like an EMP) – Attached to Email. UXO Policy and website see: http://www.defence.gov.au/uxo/ Defence webpage of Talisman Saber exercise http://www.defence.gov.au/exercises/ts07/environment.htm 	Adequate	Stable
PL3 Actions for implementation regarding Defence activities are clearly identified within the plan	4	<ul style="list-style-type: none"> Defence activities are managed through a comprehensive planning framework with elements at the strategic, regional and activity specific level. Environmental controls instituted through the Impact assessment processes complement environmental controls embedded in Defence Standard Operating Procedures and site-specific environmental controls that apply to ongoing training exercises held by the ADF. Compliance and monitoring is via regional environmental and range control staff. 	<ul style="list-style-type: none"> Defence Environmental Policy and implementing doctrine – for example DI(G) 40-2 and DI(G) 40-3 GBRMPA Zoning Plan – notification when using Training Areas Notice to Mariners/Notice to Airmen Defence Range Standing Orders Defence EMP's for routine activities Activity specific ECC's (Environmental Clearance Certificates) GBRMPA/Defence Management arrangement for 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • The Defence Maritime Activities Environmental Management Plan details environmental mitigation and reporting procedures for all activities occurring at sea. • The Defence Air Activities Environmental Management Plan details environmental mitigation measures and reporting procedures. It is unclear whether compliance with this plan by Air Force is advisory or mandatory. • In addition, a Rotary Wing Environmental Management Plan is currently being developed and is due to be completed in early-mid 2014. • Zoning Plan – notification when using Training Areas (including “Notice to Mariners” etc. NOTAM, “Notice to Airmen) • Singaporean Exercise Wallaby is changing/expanding and has not been subject to the same public process of environmental impact assessment or post exercise reporting as Talisman Sabre(er) Exercises. Wallaby is managed at the regional level within Defence with the necessary ECC’s and Standard Operating Procedures applying. The risks are monitored and if necessary are referred to Defence environmental policy experts in Canberra for further investigation/consideration. Defence undertakes briefings for GBRMPA where the exercise scope and potential risks are discussed. GBRMPA also conduct briefings for the exercise environmental management group. Defence is considering a review in partnership with GBRMPA. • Expansion of the frequency, intensity or complexity of unilateral exercises by foreign forces may require additional consideration of cumulative impacts and technologies/policies that diverge from routine ADF approaches. 	<p>Defence activities in the Great Barrier Reef World Heritage Area.</p> <ul style="list-style-type: none"> • Major exercises all have comprehensive planning (for example 18 month lead time, e.g. Talisman Sabre) • 2006 Strategic Environmental Assessment – planning framework (2013 Update due) 		
PL4 Clear, measurable and appropriate objectives for management of Defence activities have been documented	4	<ul style="list-style-type: none"> • Planning priorities clearly known from Risk Assessment – by both GBRMPA and Defence - ERT (Environmental Risk Tool) • Clear objectives in the Defence framework for environmental management, which has similar elements to ISO EMS. Annual reporting – also public post exercise reporting and internal lessons learnt reviews. 	<ul style="list-style-type: none"> • Defence Environmental Strategic Plan 2010-2014 outlines some Defence priorities for Defence management. • GBRMPA do not have specifically referenced requirements for Defence to meet except through targeted Part 5 directions. 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to Defence activities	3	<ul style="list-style-type: none"> See PL1 and PL2. Defence has monitoring plans developed for major Defence Exercises and reported in Post-exercise Environmental Reports. Defence has some baseline monitoring and reporting in place for training areas for some environmental parameters for example water quality - other management agencies undertake aspects of monitoring No coherent plan for monitoring UXO contamination and prioritising remediation 	<ul style="list-style-type: none"> Defence DIGs, ECC's, GBRMPA Management Agreement and Part 5 Directions Environmental monitoring data is usually exercise or activity specific or relates to some particular environmental parameter for example water quality in training area watercourses. An improved method for aggregating relevant environmental data to aid in detecting any trends over time is flagged for discussion at a future GBRMPA/Defence management meeting. 	Adequate	Stable
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address Defence activities	4	<ul style="list-style-type: none"> Public consultation for Talisman Sabre major exercises is comprehensive – PER is produced for public comment (aligns with EPBC requirements) – EMS-like elements at local level – EAC's Local Environmental Advisory Committees (EACs) exist for effective management of SWBTA (occur every 6 months) New platforms, equipment and major activities undergo an environmental review prior to introduction by Defence and the GBRMPA is engaged in this process where relevant. 	<ul style="list-style-type: none"> Defence webpage for Talisman Saber exercise http://www.defence.gov.au/exercises/ts07/environment.htm 2013 TS13 PER : http://www.defence.gov.au/exercises/ts07/pdf/TS07PERFinalApril07.pdf Defence Env Advisory Committees and EIA public engagement Defence engagement with GBRMPA remains strong 	Adequate	Stable
PL7 Sufficient policy currently exists to effectively address Defence activities	3	<ul style="list-style-type: none"> Defence is currently updating the <i>Strategic Environmental Assessment of Defence Activities in the GBRWHA</i> (due 2014). This document will likely form the basis of any new policy required for emerging Defence equipment and activities. Whilst no 'formal' Defence use policy in GBRMPA exist, very comprehensive management arrangements are in place. Legacy environmental contamination by UXO not currently addressed by Defence or GBRMPA. While risks are likely to be low the absence of a robust policy and risk management plan that takes into account environmental contamination is a weakness. 	<ul style="list-style-type: none"> Status of Forces Agreements (SoFA) for international activities and international military and maritime law Defence/GBRMPA Management arrangement GBRMPA Zoning Plan etc. No policy to address residual environmental risks from legacy contamination for example UXO 	Adequate	Stable
PL8 There is consistency across jurisdictions when planning for Defence activities	4	<ul style="list-style-type: none"> Generally consistent approach across jurisdictions For major activities such as exercises, particularly those involving visiting forces, all levels of Government are 	<ul style="list-style-type: none"> Status of Forces Agreements (SoFA) for international activities and international military and maritime law Defence/GBRMPA Management Agreement (2012-2016) 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		involved in planning.	<ul style="list-style-type: none"> GBRMPA Zoning Plans Engagement with Queensland Government at the regional level through Environmental Advisory Committees The Queensland Government (Marine Parks) provides an environmental briefing to all Navy Clearance Divers before every deployment to Triangular Island, SWBTA. 		
PL9 Plans relevant to Defence activities provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	4	<ul style="list-style-type: none"> The 2006 <i>Strategic Environmental Assessment of Defence Activities in the GBRWHA</i> has been reviewed (due in 2014). GBRMPA are an involved stakeholder. The review reflects changes in training, activities and equipment being undertaken and used by Defence. 	<ul style="list-style-type: none"> Major exercises all have comprehensive planning (for example 18 month lead time Talisman Saber) All training activities including major exercises must follow Range Standing Orders and activity specific Environmental Clearance Certificates. Update of the Strategic Environmental Assessment of Defence Activities in the GBRWHA (update due early 2014) 	Adequate	Stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address Defence activities	3	<ul style="list-style-type: none"> GBRMPA does not allocate specific financial resources to manage Defence Activities. The management of Defence activities is undertaken by the Environmental Assessment and Management group, which is also responsible for Ports & Shipping and Development. Defence resources for environmental management are under fiscal pressure. Defence will need to maintain resources of specifically environmentally trained personnel to ensure continued management of Defence Practice Areas. Range management functions increasingly contracted out with resource constraints challenging the capacity of Defence to check compliance with requirements. 	<ul style="list-style-type: none"> Defence has a dedicated impact assessment unit that implements the EPBC Act, GBRMPA Act etc. Defence dedicates environmental staff to support exercises such as Talisman Sabre(er). Defence adopts a risk management approach and has constant dialogue with GBRMPA as outlined in the Management Agreement between Defence and GBRMPA (2012-2016). 	Adequate	Declining
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address Defence activities	3	<ul style="list-style-type: none"> The GBRMPA does not allocate specific financial resources to manage Defence Activities. The management of Defence activities is undertaken by the 	<ul style="list-style-type: none"> GBRMPA's Planning unit has been downsized to one FTE from three FTE. GBRMPA input approx. 1FTE/annum (policy, 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Environmental Assessment and Management group, which is also responsible for Ports & Shipping and Development.</p> <ul style="list-style-type: none"> Given the increase in coastal development and ports and shipping, the resources required to manage Defence activities are lacking. GBRMPA relies on Defence expertise to assist to monitor and manage Defence environmental impacts. Defence resources for environmental management functions may be under pressure due to tight fiscal measures impacting the public sector. Existing levels of resources cannot be assured to be maintained. 	<p>consultation/planning)</p> <ul style="list-style-type: none"> Secondments/staff interchange between Defence/GBRMPA – have historically occurred. 		
<p>IN3 The right skill sets and expertise are currently available to the managing organisations to address Defence activities</p>	<p>3</p>	<ul style="list-style-type: none"> The right skill set and expertise exists within a small number of GBRMPA staff within the organisation. When staff are absent there are risks of delays in coordinating responses to issues associated with Defence use.. The GBRMPA does not allocate specific financial resources to manage Defence Activities. The management of Defence activities is undertaken by the Environmental Assessment and Management group which is also responsible for Ports & Shipping and Development Given the increase in coastal development, ports and shipping, dedicated resources required to manage Defence activities are scarce within GBRMPA. Overall Defence continues to be managed well, aided by the professional expertise within national and regional offices of Defence assisting GBRMPA by identifying impacts and undertaking in-house impact assessments and compliance monitoring. Without this level of support GBRMPA lack sufficient resources to effectively manage Defence use on its own. Defence environmental management at the national and regional level is staffed by professional and technically qualified environmental staff. There is some risk that resource pressures in Defence may impact on the level of support available to GBRMPA. GBRMPA's Planning unit has been downsized to one FTE 	<ul style="list-style-type: none"> GBRMPA and Defence both employ professionally qualified environmental management staff. Defence has staff at both national and regional level engaged in environmental management.. Defence environmental staff work closely with GBRMPA and Queensland agencies on current and emerging issues and provides analysis such as post activity reports for major exercises 	<p>Adequate</p>	<p>Stable</p>

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>from three FTE.</p> <ul style="list-style-type: none"> Defence environmental resources are also subject to annual review and Defence resources may be under pressure, at a time of potentially increasing and different uses evolving at training areas. 			
IN4 The necessary biophysical information is currently available to address Defence activities	3	<ul style="list-style-type: none"> Biophysical information is available from Defence on some aspects, for example hydrographic survey, seagrass mapping, and contaminated site assessments. Defence has also undertaken surveys to detect beaked whales in the Coral Sea adjacent to the Great Barrier Reef Region. Little information exists about inshore dolphins, including in Defence areas. There is no comprehensive Defence environmental monitoring plan for all activities, although risk evaluations indicate that many issues do not warrant any such monitoring. Defence has indicated that it will consider monitoring issues in the context of the GBRMPA/DoD Management Agreement 	<ul style="list-style-type: none"> DoD information on MNES (seagrasses, saltmarshes and mangroves): http://www.Defence.gov.au/environment/swbta/Defence SOE report chapter 7f.pdf DoD information on MNES (marine fauna): http://www.Defence.gov.au/environment/swbta/Defence per cent20SOE per cent20report chapter per cent209f.pdf 	Adequate	Stable
IN5 The necessary socio-economic information is currently available to address Defence activities	3	<ul style="list-style-type: none"> The economic value of Defence activity and training to the Great Barrier Reef Region is difficult to assess. There are no alternative training areas for Defence to Shoalwater Bay - so effectively these areas are of irreplaceable 'economic' value as a military training area. Social impacts of Talisman Saber exercises are assessed in the planning stages of the exercise. 	<ul style="list-style-type: none"> Defence has undertaken strategic training area reviews that may include information on regional economic and other impacts. It is not known if these internal reviews are publically available. Defence exercise impact assessments refer to economic benefits arising from major military exercises for example TS13. 	Adequate	Stable
IN6 The necessary Indigenous heritage information is currently available to address Defence activities	4	<ul style="list-style-type: none"> Good understanding of Traditional knowledge for SWBTA; some/less for Cowley Bay/Halifax Bay 	<ul style="list-style-type: none"> HMP for Shoalwater Bay (being reviewed and updated) 	Adequate	Stable
IN7 The necessary historic heritage information is currently available to address Defence activities	4	<ul style="list-style-type: none"> Some conservation volunteer work in areas Vicarious 'use' – community appreciation and support for Defence 'stewardship' Also outsource to consultants key environmental tasks 	<ul style="list-style-type: none"> HMP for Shoalwater Bay (being reviewed and updated) 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
IN8 There are additional sources of non-government input (for example volunteers) contributing to address Defence activities	4	<ul style="list-style-type: none"> Access to Defence training areas is restricted, however some research and baseline environmental studies and surveys are permitted. Projects using Caring for Our Country funding (for example marine debris) and land management (such as weed control) undertaken by volunteers. Environmental Advisory Committee (EAC) for SWBTA involves volunteers, neighbours, regulators and Councils 	<ul style="list-style-type: none"> SWBTA EAC Minutes 	Adequate	Stable
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of Defence activities	4	<ul style="list-style-type: none"> Large scale or higher risk activities, while essential to training a modern military force, must also comply with relevant Federal and State legislation. Preparation of initial environmental reviews, environmental management plans and Environmental Clearance Certificates are tools that Defence uses for all activities. GBRMPA consulted by Defence for new activities and exercises Stakeholder engagement with the local community is an important part of the development of an environmental assessment for major exercises like Talisman Sabre(re). Environmental Advisory Committee for SWBTA held every 6 months. 	<ul style="list-style-type: none"> Port authorities, shipping, Queensland Government and regulatory agencies are engaged in the planning and approvals processes for major exercises and relevant elements of routine operations, for example, around berthing, logistics, safety etc. 	Adequate	Stable
PR2 The local community is effectively engaged in the ongoing management of Defence activities	4	<ul style="list-style-type: none"> Stakeholders effectively engaged through EAC's and public consultation for major exercises Defence could consider using other existing consultative mechanisms more effectively, for example collaborating with GBRMPA and Queensland agencies to use LMAs/RACs for Defence business. GBRMPA consulted by Defence for new activities and exercises 	<ul style="list-style-type: none"> http://www.defence.gov.au/Capability/jctc/Community_Consultation.asp 	Adequate	Stable
PR3 There is a sound governance system in place to address Defence activities	4	<ul style="list-style-type: none"> Defence, GBRMPA and the Queensland Government work collaboratively for example under GBRMPA/Defence Management Agreement Defence activities are subject to EIA processes including EPBC Act approvals 	<ul style="list-style-type: none"> GBRMPA Annual Report 2012/13 Defence/GBRMPA Management Agreement 2012 DI(G) ADMIN 40-2, 40-3 http://www.defence.gov.au/environment/impact.htm 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Routine Defence activities are managed through the strategic environmental assessment. Activities deemed to be low risk are managed by standard Defence procedures. Capacity of Defence to undertake monitoring and compliance checking of activities with reduced resources represents a risk. 	<ul style="list-style-type: none"> Triangular Island Terms of Use Agreement 2013 		
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for Defence activities	3	<ul style="list-style-type: none"> Reporting following a Part 5 direction also ensures performance monitoring Good performance monitoring for large-scale exercises Good management agreement but need for KPIs Cumulative impacts monitoring not comprehensive but some, for example, seagrass, water quality inputs to GBR There is an effective response process in place for managing UXO incidents, however legacy environmental contamination risks from UXO is not addressed 	<ul style="list-style-type: none"> GBRMPA, Defence and Queensland agencies cooperate in managing compliance monitoring particularly for major exercises – see Talisman Saber post exercise reports 		
PR5 Appropriate training is available to the managing agencies to address Defence activities	3	<ul style="list-style-type: none"> Ongoing training and familiarisation of GBRMPA and Defence staff is needed to address staff turnover issues. An annual two-day workshop is needed to allow each organisation to present on their management and issues as part of a training and awareness programme. 	<ul style="list-style-type: none"> Major exercise induction video available on request from Defence 	Adequate	Stable
PR6 Management of Defence activities is consistently implemented across the relevant jurisdictions	4	<ul style="list-style-type: none"> Partnership (Defence/GBRMPA) at all levels, for example, annual meeting of Defence/GBRMPA officers Risk assessment process addresses differing views (if any) across jurisdictions. No policy to address legacy environmental contamination in the Great Barrier Reef Marine Park, for example UXOs, 	<ul style="list-style-type: none"> Status of Forces Agreements (SoFA) for international activities, international military and maritime law Defence/GBRMPA Management Agreement (2012-2016) GBRMPA Zoning Plan etc. 	Adequate	Stable
PR7 There are effective processes applied to resolve differing views/conflicts regarding Defence activities	4	<ul style="list-style-type: none"> Partnership (Defence/GBRMPA) at all levels, for example, annual meeting of Defence/GBRMPA officers Risk assessment process addresses differing views (if any) 	<ul style="list-style-type: none"> Defence/GBRMPA Management Agreement (2012-2016) 	Adequate	Improving
PR8 Impacts (direct, indirect and cumulative) of activities associated with Defence activities are appropriately considered.	4	<ul style="list-style-type: none"> See CO2 & CO3 	<ul style="list-style-type: none"> http://www.defence.gov.au/environment/impact.htm 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding Defence activities	4	<ul style="list-style-type: none"> See CO2 & CO3 	<ul style="list-style-type: none"> Major Exercise management plans 2013 Strategic Assessment of Defence Activities (EcoLogical) Defence Instruction General 40-3 Environmental Impact Assessment Contaminated site assessments of Defence sites in Queensland – details can be viewed online at: http://www.defence.gov.au/id/derp/qld.asp 	Adequate	Stable
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding Defence activities	4	<ul style="list-style-type: none"> See CO2 & CO3 		Adequate	Stable
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding Defence activities	4	<ul style="list-style-type: none"> See CO2 & CO3 	<ul style="list-style-type: none"> Draft Heritage Management Plan for SWBTA currently underway 	Adequate	Stable
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding Defence activities	4	<ul style="list-style-type: none"> See CO2, CO3 and CO5 	<ul style="list-style-type: none"> Draft Heritage Management Plan for SWBTA currently underway 	Adequate	Stable
PR13 Relevant standards are identified and being met regarding Defence activities	4	<ul style="list-style-type: none"> GBRMPA requires reporting following a Part 5 direction which ensures effective performance monitoring Good performance monitoring for large-scale exercises – no significant incidents have occurred, incident responses effective, high standards are being met with regards to environmental management Good management agreement but need to review/include relevant KPIs Cumulative impacts monitoring not comprehensive ,but some, for example, seagrass, water quality inputs to GBR No clear policy on UXO environmental contamination 	<ul style="list-style-type: none"> Part 5 approval conditions Defence impact and risk assessments developed for major exercises Range Standing Orders and Defence doctrine such as DI(G) ADMIN 40-3 	Adequate	Stable
PR14 Targets have been established to benchmark management performance for Defence activities	3	<ul style="list-style-type: none"> The Defence environmental management program does not have specific targets for significant environmental aspects of Defence-managed areas, however monitoring of some specific parameters does routinely occur. Where monitoring is undertaken no significant impacts have been identified. There is no evidence that impacts that do occur have significant or cumulative effects. 	<ul style="list-style-type: none"> The Environmental Clearance Certificates for Defence activities set some performance indicators around compliance. Some targets established for parameters considered in major exercise approvals for example TS13 	Adequate	Improving

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Monitoring and targets are to be the subject of discussion under the GBRMPA/Defence management agreement. 			
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for Defence activities	4	<ul style="list-style-type: none"> Environment outputs are good/excellent (overall lack of pressure on marine environment for example catchments) Perceptions – Defence generally regarded as good ‘stewards’ – despite some local concerns Defence training capability – maintained - new technology being applied is ‘smarter’ and more efficient Defence has historically responded to community concerns/data for example Halifax Bay – HE bombing no longer occurs Some measures of effectiveness in past exercise reporting. The absence of evidence that significant impacts are arising from Defence use of the Great Barrier Reef points to effective outcomes from management program. 	<ul style="list-style-type: none"> Coordination of effective monitoring of Defence use of the Great Barrier Reef is to be the subject of ongoing discussions within the GBRMPA/Defence Management Agreement. There is no evidence that the program is not effective though comprehensive monitoring data supporting such a conclusion is limited. 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to Defence activities have progressed in accordance with timeframes specified in those documents	4	<ul style="list-style-type: none"> Management documents and/or programs have been implemented in accordance with agreed timeframes. Where timeframes are not met the GBRMPA is notified. 	<ul style="list-style-type: none"> Talisman Sabre(er) exercise documentation (for example Environmental Management Plan, Exercise Instructions etc.) 	Adequate	Stable
OP3 The results (in OP1 above) have achieved their stated management objectives for Defence activities	4	<ul style="list-style-type: none"> Generally true – incident reporting and management is effective 	<ul style="list-style-type: none"> For example Post-exercise Reporting 	Adequate	Stable
OP4 To date, products or services have been produced in accordance with the stated management objectives for Defence activities	4	<ul style="list-style-type: none"> Generally true – incident reporting and management is effective 		Adequate	Stable
OP5 Effective knowledge management systems regarding Defence activities are in place within agencies	4	<ul style="list-style-type: none"> Defence has an extensive records management system (known as DRMS). GBRMPA holds data on Defence environmental management and performance 	<ul style="list-style-type: none"> Defence and GBRMPA web sites for example Talisman Sabre(er) exercise reports and information Triangular Island Terms of Use Agreement 2013 	Adequate	Stable
OP6 Effective systems are in place to share knowledge on Defence activities with the community	4	<ul style="list-style-type: none"> For example EAC and Public Environment Reports for major activities 		Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing Defence activities and moving towards the attainment of the desired outcomes.	4	<ul style="list-style-type: none"> Defence continues to be able to train effectively in the Great Barrier Reef Marine Park and Great Barrier Reef values have not been impacted. Any impacts are localised and impacts are short term with any incidents well managed. Good levels of compliance and enforcement of approval conditions for Defence activities No coherent program to address legacy UXO environmental contamination 	<ul style="list-style-type: none"> Defence and GBRMPA plans and policies Commonwealth UXO Policy Triangular Island Terms of Use Agreement 2013 	Adequate	Stable
OC2 The outputs relating to Defence activities are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	4	<ul style="list-style-type: none"> Yes. The completion of the review of the SEA will achieve these outcomes. Provided DoD continue to engage with the GBRMPA and modify their activities in response to extreme weather, the effects of climate change and incidents, the outputs will be kept on track to ensure the values of the Great Barrier Reef are protected. The existence of Defence training areas, particularly SWBTA, as well managed habitat will become more significant should inshore areas of the Great Barrier Reef experience further deterioration. A greater understanding of the Great Barrier Reef Marine Park Act and GBRMPA's national and international responsibilities and how these interact with the DoD responsibilities would also improve the success of this indicator. 	See OP1	Adequate	Stable
OC3 the outputs (refer OP1 and 3) for Defence activities are reducing the major risks and the threats to the Great Barrier Reef	4	<ul style="list-style-type: none"> Comprehensive risk assessment processes ensure risks/threats from Defence actions are addressed. Defence training areas are in a good natural condition and provide some respite/resilience for natural values that have diminished in other parts of the Marine Park through other pressures. 	<ul style="list-style-type: none"> Risk assessments attached to major exercise environmental reports (reviewed each exercise cycle (2 years)). 	Adequate	Stable
OC4 Use of the Great Barrier Reef relating to Defence activities is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> With the exception of Triangular Island in SWBTA, the maritime areas of the Great Barrier Reef are generally used by Defence for ship manoeuvring, transit and low risk activities such as overflight by rotary and fixed wing aircraft during exercises. These activities are all closely monitored and controlled. They have minor, temporary and transient impacts on the environment of the Great Barrier Reef. 	<ul style="list-style-type: none"> What monitoring has occurred has not identified any evidence that use is not sustainable including long-term monitoring of training areas. While marine environmental monitoring is limited (for example, seagrass cover and exercise-specific monitoring plans) there are no known indications suggesting there are undetected significant impacts occurring. 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Commonwealth islands within the Great Barrier Reef in SWBTA are used for some higher risk activities such as aerial bombing. Impacts are confined to very limited target areas. Management of legacy UXO environmental contamination in these areas is programmed into range management tasks but legacy UXO contamination where ordnance may have fallen outside of the target area – such as in the sea off Townshend and Raynham Islands is not currently managed by a specific program focused on managing any residual risk. 	<ul style="list-style-type: none"> Ongoing monitoring of legacy UXO contaminated sites is an issue. 		
OC5 Use of the Great Barrier Reef relating to Defence activities is demonstrably economically sustainable	4	<ul style="list-style-type: none"> Defence training areas in the Great Barrier Reef Region are irreplaceable and therefore have very significant value in economic terms to Defence and the nation as a whole. Even if alternate areas could be identified, the acquisition of a training area with similar attributes and utility for Defence training would cost several hundreds of millions of dollars (if not billions) and would likely impact on the national budget bottom line. 	<ul style="list-style-type: none"> Defence Environmental Strategic Plan 	Adequate	Stable
OC6 Use of the Great Barrier Reef relating to Defence activities is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> Defence areas in the Great Barrier Reef Region are generally off limits to the public. Due to the restrictions on public access, Defence training areas assist in biodiversity conservation and the Marine National Park Zones around SWBTA represent a significant proportion of the green zones for the nearshore 'High Nutrient Coastal Strip' bioregion. Defence also assists with maintaining border security, quarantine and surveillance which contributes to the overall environmental protection framework for the Great Barrier Reef. Defence production and management of survey and marine charts assists the amenity of the Great Barrier Reef Marine Park for all users. 	<ul style="list-style-type: none"> GBRMPA Bioregions map from 'Outlook On-line' GBRMPA web site 	Adequate	Stable
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address Defence activities	4	<ul style="list-style-type: none"> GBRMPA and Defence have an effective partnership arrangement through the MOU and meet regularly at the policy and local level to review issues. Defence undertakes community engagement for major exercises and involves GBRMPA and Queensland management agencies. Defence has environmental advisory committees for its Queensland training areas that also provide an opportunity for community engagement (Indigenous community, non- 	<ul style="list-style-type: none"> Bowett, J. Davidson, A. Danvers, T. (2012) Innovation in Management: Shoalwater Bay Training Area: capability, conservation and collaboration; The Nature Conservancy http://www.nature.org/cs/groups/webcontent/@web/@australia/documents/document/prd_062385.pdf Wu, W. Wang, X.H., Paul, D. (2013) Evaluating the Australian Defence Force stakeholder participation at Shoalwater Bay Training Area, Queensland, Australia. 	Adequate	Stable

Component of management of defence activities	Rating	Justification	Evidence/sources	Confidence	Trend
		government organisations (NGOs) and local government are all invited to participate). Provision of adequate resources to sustain and service the relationships is the main risk.	Journal of Environmental Planning and Management http://www.tandfonline.com/doi/full/10.1080/09640568.2013.839445		

Table 23 Calculation of grades for fishing (commercial)

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to commercial fishing are understood by managers	3	<ul style="list-style-type: none"> The values of the Great Barrier Reef relevant to commercial fishing are well understood. Commercial fishing is the principle extractive use of the Great Barrier Reef. There is good knowledge about the methods of fishing and their risks to Great Barrier Reef values . There is good economic data about the value of the fisheries to the region. Knowledge about the interaction between commercial fishing and the interactions with inshore and offshore biodiversity is improving. 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment Biodiversity Strategy & Vulnerability Assessments Trawl Ecological Risk Assessments from the East Coast Trawl Fishery Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments http://provisionreef.org/ and reef guardian program http://www.daff.qld.gov.au/fisheries/commercial-fisheries/queenslands-commercial-fisheries http://www.environment.gov.au/system/files/pages/c5ce4081-6461-467e-a397-275b82a45307/files/east-coast-finish-assessment-feb2012.pdf 	Adequate	Improving
CO2 The current condition and trend of values relevant to commercial fishing are known by managers	3	<ul style="list-style-type: none"> Key indicator fish species are monitored and assessed on an annual basis using available independent and dependent monitoring information and research findings. How the fisheries interacts with non-target animals are understood and regulations in place to minimise or prevent interaction. The current conditions and trends in Queensland's fisheries are reported annually through fishery reports and stock status reports, although these are generally statewide and not specific to the Great Barrier Reef. However, the stock status of only 29 of 65 (44.6 per cent) fisheries resources harvested on the east coast of Queensland is defined. The remainder (about 55 per cent) are either uncertain or undefined because there is not enough information available to make an assessment. The ecological risk assessment of the East Coast Otter 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment annual fishery reports: http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/fisheries-data-and-reports/sustainability-reporting/fishery-updates stock status reports: http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/fisheries-data-and-reports/sustainability-reporting/stock-status-assessments DAFF website - monitoring reporting http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/commercial-fisheries/species-specific-programs/monitoring-reporting The independent review of snapper stock (PDF, 265.6KB) is available Erikson & Byrne 2013 The sea cucumber fishery in 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Trawl Fishery found that under current levels of effort and fishing practices, the overall risk levels from trawling activities was low.</p>	<p>Australia's Great Barrier Reef Marine Park follows global patterns of serial exploitation. Fish and Fisheries DOI: 10.1111/faf.12059</p> <ul style="list-style-type: none"> • , M.J., Roy, D.P., Tonks, M.L., Gaddes, S.W., Chilcott, K.E., O'Neill, M.F., Brown, I.W., McLennan, M., Jebreen, E.J., et al. 2007, Bycatch weight, composition and preliminary estimates of the impact of bycatch reduction devices in Queensland's trawl fishery, Report to the Fisheries Research and Development Corporation, Project no. 2000/170, Department of Primary Industries and Fisheries, Brisbane. • Courtney, A.J., Schemel, B.L., Wallace, R., Campbell, M.J., Mayer, D.G. and Young, B. 2010, Reducing the impact of Queensland's trawl fisheries on protected sea snakes, Department of Employment, Economic Development and Innovation, Brisbane. 		
CO3 Impacts (direct, indirect and cumulative) associated with commercial fishing are understood by managers.	3	<ul style="list-style-type: none"> • There is good understanding of the direct impacts of commercial fishing on target species, habitat and many bycatch species, in particular species of conservation interest (SOCI). • Knowledge base is building in relation to the indirect impacts of fishing from an ecosystem view. • There is an understanding of impacts at an overall level, but a lack of understanding of the direct, indirect and cumulative impacts of fishing on a range of fisheries operating in the Great Barrier Reef. This information gap is being progressively filled – for example the recent Ecological Risk Assessment of the East Coast Trawl Fishery and coral fishery, and some recent independent research undertaken by James Cook University on shark harvests in the East Coast Inshore Fin Fish Fishery (ECIFFF). 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report chapters 6 and 5 http://www.reefhaveyoursay.com.au/draft-reports • Morison, A.K. and Pears, R.J. 2012, Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop, Great Barrier Reef Marine Park Authority, Townsville. • Pears, R.J., Morison, A.K., Jebreen, E.J., Dunning, M.C., Pitcher, C.R., Courtney, A.J., Houlden, B. and Jacobsen, I.P. 2012, Ecological risk assessment of the East Coast Otter Trawl Fishery in the Great Barrier Reef Marine Park: Summary report, Great Barrier Reef Marine Park Authority, Townsville. • CRFFF - Thebaud at al.,(2014) Micro-economic drivers of profitability in an ITQ-managed fishery: An analysis of the Queensland Coral Reef Fin-Fish Fishery. Volume 43, January 2014, Pages 200–207 • Coral ERA http://www.provisionreef.org.au/stewardship-action-plan/stewardship-action-plan-2013/ • Stock assessment priorities: 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
			http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/fisheries-data-and-reports/sustainability-reporting/stock-assessment-reports/priorities-for-fisheries-queensland		
<p>CO4 The broader (national and international) level influences relevant to commercial fishing are understood by managers.</p>	3	<ul style="list-style-type: none"> • It is understood reef-dependent activities including fishing are vulnerable to the negative effects that ocean acidification, sea level rise, more frequent extreme weather and warming sea temperatures. • It is recognised that it is likely fishing activities will be highly sensitive to climate change, including projected changes in fish abundance, survivorship, size and distribution, disruptions to shallow water nurseries and loss of coral reef habitats, as well as changes in cyclone and storm activity. • The value of the Great Barrier Reef to the Australian and International communities is recognised as is the need for Australia to be leading the world in terms of managing fisheries in a world heritage site. • It is recognised that changing global market trends influence commercial fishing patterns in the Reef, especially the nature and level of demand for wild-caught product and the worldwide expansion of aquaculture fisheries. As wild-caught fisheries throughout the world continue to be fully exploited or over exploited, the economic value of the Region's fisheries resources and the pressure to exploit them (legally and illegally) may increase. • International demand for wild-caught Queensland seafood may increase the targeting of additional species or increase demand for intensive aquaculture within the Region and its catchment. Expected growth in aquaculture around the world (for example, aquaculture-raised coral trout are expected to be commercially viable in the near future) may also lead to diversification in the reef line fishery and increased targeting of other species. <p>There is still work to be done on the explicit integration of the above knowledge with the planning processes and management outputs.</p>	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop • Great Barrier Reef Strategic Assessment draft Report 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
CO5 The stakeholders relevant to commercial fishing are well known by managers.	4	<ul style="list-style-type: none"> Each commercial fisher is licensed allowing contact details and current fishing operations to be monitored. The management agencies have generally good relationships with commercial fishers and the various representative bodies: eg Queensland Seafood Industry Association (QSIA), Pro-Vision Reef, Reef Line Council, Sea Cucumber, East Coast Crabbers network and the Tropical Lobster Association. Regional officers liaise with the community, especially regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to the commercial fisheries. The GBRMPA has established a Reef Guardian Fishers pilot program (for commercial harvest and line fisheries currently and further development planned for inshore net fishers) - this program recognises fishers who operate sustainably and innovatively in order to maintain the health of the Great Barrier Reef while building the future of their fishery, their business and the Reef. Collaborations and partnerships also occur with the fishing industry and peak bodies (QSIA, Pro-vision Reef) which have provided further opportunities for managers to work closely with stakeholders relevant to fishing. 	<ul style="list-style-type: none"> Reef Guardian Fishers: http://www.gbrmpa.gov.au/our-partners/reef-guardians/reef-guardian-fishers 	Adequate	Stable
PLANNING					
PL1 There is a planning system in place that effectively addresses commercial fishing	3	<ul style="list-style-type: none"> The framework for fisheries management arrangements are established in the Queensland <i>Fisheries Act 1994</i>. The Act provides for the establishment of regulations about commercial fishing and these must be reviewed every ten years. The framework provides for a wide selection of regulatory and non-regulatory approaches to management. Any proposed regulation that has a significant impact must be subject to public consultation and responses considered before the Government makes a determination. The GBRMPA zoning system addresses whole-of-reef pressures and drivers related to commercial fishing. 	<ul style="list-style-type: none"> Queensland <i>Fisheries Act 1994</i> (and associated legislation) Draft State Planning Policy, is available online: http://www.dsdp.qld.gov.au/resources/policy/state-planning/draft-spp.pdf GBRMP Zoning Plan 2003 Great Barrier Reef Coast MP Zoning Plan FHAs DPA's: http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-outlook-report/outlook-online?sq_content_src=per_cent2BdXJsPWh0dHAIM0EIMkYIMkZ3d3ctcmMuZ2JybXBhLmdvdi5hdSUyRmNvcnBfc2lOZSUyRmtleV9pc3N1 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
			ZXMIMkZjb25zZXJ2YXRpb24IMkZuYXR1cmFsX3ZhbHVlcYUyRmR1Z29uZ3MIMkZkdWdvbmdfcHJvdGVjdGlvbI9hcmVhcyZhbGw9MQ per cent3D per cent3D		
PL2 The planning system for commercial fishing addresses the major factors influencing the Great Barrier Reef Region's values.	3	<ul style="list-style-type: none"> Fisheries management tools address ecologically sustainable development (ESD) principles and have the ability to address major factors affecting the values in the Great Barrier Reef. Although planning systems are not specifically framed around the Great Barrier Reef values, in most instances key threats are identified, debated and addressed. Marine park planning tools include the ability to restrict fishing to enable the biodiversity values in the Great Barrier Reef to be protected. 	<ul style="list-style-type: none"> Queensland <i>Fisheries Act 1994</i> (and associated legislation) Trawl Ecological Risk Assessments from the East Coast Trawl Fishery Harrison et al, larval export from marine reserves and the recruitment benefit for fish and fisheries, <i>Current Biology</i> 22, 1-6 June 5, 2012 	Adequate	Stable
PL3 Actions for implementation regarding commercial fishing are clearly identified within the plan	3	<ul style="list-style-type: none"> Planning processes clearly identify actions for management of fishing, including legislative and non-legislative actions to constrain. Fisheries reviews and assessments generally include recommendations and options for future management. The Zoning Plan clearly identifies where and how actions in the Marine Park should be implemented. Other plans (for example Biodiversity Conservation Strategy, Climate Change Action Plan and Adaptation Strategy) also identify some fishery-related actions. 	<ul style="list-style-type: none"> Queensland <i>Fisheries Act 1994</i> (and associated legislation) http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/data-reports/sustainability-reporting/performance-measurement-systems 	Adequate	Stable
PL4 Clear, measurable and appropriate objectives for management of commercial fishing have been documented	3	<ul style="list-style-type: none"> Performance management systems contain measurable and more targeted fishery performance objectives; although not always specific to the Great Barrier Reef. Some gaps in objectives (for example ecosystem, bycatch, climate change issues, economic and social objectives) There is increasing calls for fisheries management in the World Heritage Area be more restrictive than that which exists outside the Great Barrier Reef. For example the reference point for sustainably fished is accepted internationally as a stock biomass being 40 per cent or more than virgin biomass. 	<ul style="list-style-type: none"> Queensland <i>Fisheries Act 1994</i> (and associated legislation) PMS: http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/fisheries-data-and-reports/sustainability-reporting/performance-measurement-systems 	Adequate	Stable
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring	3	<ul style="list-style-type: none"> An annual process is undertaken to identify strategic and operational information needs for fisheries management 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Authority 		

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
information is gathered in relation to commercial fishing		<p>informed by annual status assessments of stocks, research findings and community concerns. Specific programs to collect fisheries information are in place; biological monitoring, stock status process, recreational surveys, logbooks, SOCI, quota, vessel monitoring systems (vms), licencing, and performance measurement systems (PMSs).</p> <ul style="list-style-type: none"> Reactive monitoring also occurs, for example, fish sampling and testing in the Gladstone Harbour for the Gladstone fish health investigation. Existing systems could be improved by increased use of new technology (including tracking systems) and through higher frequency fishing activity reporting. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Queensland <i>Fisheries Act 1994</i> (and associated legislation) 		
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address commercial fishing	3	<ul style="list-style-type: none"> Engagement occurs through management planning processes such as Regulatory Impact Statements and port visits and issue-specific working groups with wide representation (for example, commercial, recreational, community, conservation, marketers, other government agencies) formed as required. Currently no permanent committees exist specifically established to identify and discuss fisheries issues. Other mechanisms are relied upon for this to occur. With the dissolution of Management Advisory Committees (MACs) there has been a considerable erosion of the ability for fisheries stakeholders to be engaged in planning processes for fisheries management in this regard. The Authority is heavily engaged in a number of forums with Stakeholders to provide input into the management of the main fisheries operating in the Marine Park – this engagement aims to deliver improved ecosystem based management outcomes for the Region. The Authority continues to liaise and rely upon input from the Reef Advisory Committees and Local Marine Advisory Committees, which are engaged and effectively contribute to planning processes associated with commercial fishing. Reef Guardian Fishers Steering Committee and Working Groups is a forum where fishers can raise concerns and discuss plans to solve them. The main stakeholders involved in the net fishery in 	<ul style="list-style-type: none"> Queensland <i>Fisheries Act 1994</i> (and associated legislation) Queensland <i>Statutory Instruments Act 1992</i> and guidelines for Regulatory Impact Statements. 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		Bowling Green Bay were heavily engaged to implement changes to netting regulations in Bowling Green Bay.			
PL7 Sufficient policy currently exists to effectively address commercial fishing	3	<ul style="list-style-type: none"> Queensland manages fisheries on a statewide basis rather than fisheries inside and outside the Great Barrier Reef. Fisheries primary legislation is supported by multiple national and state policy instruments such as limited entry, developmental fishing, harvest strategy, in addition to education and compliance strategies and other non-legislative controls. 	<ul style="list-style-type: none"> Fishery policies http://www.daff.qld.gov.au/fisheries/consultations-and-legislation/policies/management-and-licensing-policies Queensland <i>Fisheries Act 1994</i> (and associated legislation) GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans Responsible Reef Practices: http://www.gbrmpa.gov.au/visit-the-reef/responsible-reef-practices 	Adequate	Stable
PL8 There is consistency across jurisdictions when planning for commercial fishing	2	<ul style="list-style-type: none"> Multiple agencies and governments are involved in fishing management: Queensland Department of Agriculture, Fisheries and Forestry (DAAF), Department of the Environment (DOTE), and the GBRMPA. All have the responsibility to ensure sustainable use of fisheries resources but, given the nature of their Acts, for different reasons (for example, biodiversity protection and sustainable harvest). Given these different objectives there are times when approach to planning for commercial fishing can be in conflict and this is especially the case for commercial fisheries where the planning processes for the Marine Park and fisheries management are done separately and with different objectives. This has resulted in perverse outcomes where management measures that meet one objective do not necessarily meet the other. There is increased consistency between Great Barrier Reef Marine Park Act and EPBC Act. A consistent approach is being implemented for the assessment of Stock Status. The different legislative responsibilities and objectives of respective Fisheries and Marine Park Acts are outlined in the Fisheries schedule of the Great Barrier Reef Intergovernmental Agreement between the Commonwealth of Australia and the State of Queensland relating to the 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Authority Queensland Department of Agriculture, Fisheries and Forestry Queensland <i>Fisheries Act 1994</i> (and associated legislation) Fisheries Annex to the Great Barrier Reef intergovernmental agreement between the Queensland Government and the Australian Government. http://www.daff.qld.gov.au/documents/FisheriesSustainableFishing/Stock-Status-of-Queenslands-Fisheries-Resources-2011.pdf Commonwealth Government Status of Key Australian Stocks in 2012 (http://www.fish.gov.au/Pages/default.aspx). Queensland Fisheries framework for defining Stock Status of Fisheries Resources http://www.daff.qld.gov.au/28_18106.htm 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		protection and management of the Great Barrier Reef Marine Park.			
PL9 Plans relevant to commercial fishing provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	3	<ul style="list-style-type: none"> Management of fishing activities (in the <i>Fisheries Act 1994</i>, regulations and management plans, Great Barrier Reef spatial planning) clearly define what (and where) commercial fishing activities can occur and give certainty for the life of the regulation (10 years). The Zoning Plan provides certainty regarding where uses may occur, the type of activities allowed, but the fishery management plans are relied on for providing conditions under which activities may proceed and circumstances where impacts are likely to be acceptable. Marine Parks permits specify what activity can occur where, but are generally considered on a case by case basis. 	<ul style="list-style-type: none"> Queensland <i>Fisheries Act 1994</i> (and associated legislation) Zoning Plan 	Adequate	Stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address commercial fishing	2	<ul style="list-style-type: none"> Operating resources dedicated to fisheries issues in all management agencies have been reducing over the last five years. As a result some activities undertaken have been reduced, some are now undertaken by the private sector (for example, expertise advice on waterway barrier works design and sea grass monitoring) while others have ceased (for example, fisheries observer program and fishcare volunteer program). Resources in each agency are prioritised annually to ensure key activities are undertaken and reviews are progressed in as timely manner as practicable. Funding of compliance and education activities has reduced the capacity to respond to reports of illegal activities and to educate the fishing industry. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Deteriorating
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address commercial fishing	2	<ul style="list-style-type: none"> Staff resources dedicated to fisheries issues in all management agencies have been reducing over the last five years. For example, full time equivalent staff numbers have reduced from over 300 in 2009 to less than 190 in 2012/13 in the Queensland Department of Agriculture, Fisheries and Forestry. Current activity and service provision is considered to be at 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		minimum levels necessary to achieve objectives of fisheries management.			
IN3 The right skill sets and expertise are currently available to the managing organisations to address commercial fishing	3	<ul style="list-style-type: none"> Management agencies employ high quality quantitative staff including experts in fisheries science, fisheries biology, fisheries policy, analytics, media, compliance and monitoring. Staff reductions have seen the overall depth and capacity of the workforce diminished with the loss of experienced and knowledgeable staff across many fields. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Authority Queensland Department of Agriculture, Fisheries and Forestry 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address commercial fishing	3	<ul style="list-style-type: none"> The current conditions and trends in Queensland's fisheries are reported annually through fishery reports and stock status reports, although these are generally statewide, not specific to the Great Barrier Reef. The status of most fisheries resources in the Great Barrier Reef is not quantitatively known as the costs of doing so would outweigh the value of the fisheries themselves. Rather than invest resources to determine precise stock statuses, conservative management arrangements are put in place and risk assessments are undertaken to monitor activity to ensure fishing activity and catches are reasonable. Information about the stock status of each particular shark species is of concern as the commercial fishery takes a wide range of shark species. Collection of basic information about the take of different shark species in this fishery has improved over the past five years, and many of the species taken are not considered at high risk from fishing, however information on other species of higher risk is required. As a result, a stock assessment for major and at risk species has commenced in order to inform future management. Several major research programs and studies have improved our understanding of the environmental effects of fishing, including on the broader ecosystem. This information has informed reviews of management arrangements for commercial fishing activities. Qualitative ecological risk assessments (ERAs) recently done for a number of Queensland fisheries (Trawl and 	<ul style="list-style-type: none"> Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments draft Great Barrier Reef Biodiversity Conservation Strategy 2012: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation Scientific information Needs 2009-2014: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		Coral fisheries) which are largely Great Barrier Reef specific to identify risk. Other ERAs could be reviewed and undertaken.			
IN5 The necessary socio-economic information is currently available to address commercial fishing	3	<ul style="list-style-type: none"> A Socio-Economic Long-Term Monitoring Project is in place to collect the necessary socio-economic information to address commercial and recreational fishing. The project should identify the appropriate data needs and indicators to monitoring the future in relation to fishing. Other projects also provide valuable economic information to inform government and industry in regards to fisheries operating in the Great Barrier Reef but these are point in time and not ongoing. Management agencies are actively involved in recently completed current economic survey of commercial operators in commercial line fishery. Socio-economic assessments of flood and cyclone impacts on commercial fishing industry completed. Also, adaptation work with fishing industries has been considering social and ecological aspects, in addition to ecological. 	<ul style="list-style-type: none"> Link to SELTMP: http://www.nerptropical.edu.au/project/seltmp CRFFF – Thébaud O, et al. Micro-economic drivers of profitability in an ITQ-managed fishery: An analysis of the Queensland Coral Reef Fin-Fish Fishery.Mar.Policy (2013), http://dx.doi.org/C2310.1016/j.marpol.2013.06.001i CSIRO FRDC project 2011/030 titled "Evaluating Candidate Monitoring Strategies, Assessment Procedures and Harvest Control Rules in the Spatially Complex Queensland Coral Reef Fin Fish Fishery". 	Adequate	Improving
IN6 The necessary Indigenous heritage information is currently available to address commercial fishing	2	<ul style="list-style-type: none"> Information is collected on an as needs basis with few direct commercial impacts on Indigenous heritage reported. However a detailed and widespread understanding of traditional (Indigenous) knowledge and cultural heritage is limited. 	<ul style="list-style-type: none"> Woodley et al, World Heritage Research: Making a Difference, CRC Reef Research Centre 2007 http://www.reef.crc.org.au/publications/finalsynthesis/Making-a-difference_72dpi.pdf 	Adequate	Improving
IN7 The necessary historic heritage information is currently available to address commercial fishing	NA				
IN8 There are additional sources of non-government input (for example volunteers) contributing to address commercial fishing	3	<ul style="list-style-type: none"> Private individuals and non-government organisations provide significant input into fisheries management, raising social, economic and ecological issues for consideration and debate. Non-government inputs are also through Reef Guardian fishers, Reef Advisory Committees, Sunfish 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable
PROCESSES					

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of commercial fishing	3	<ul style="list-style-type: none"> On fisheries management matters stakeholders are engaged on an issue-specific basis as required (for example, working and scientific advisory groups for review of management arrangements, direct mail) and through consultation processes during review processes. GBRMPA engages fishers in a number of consultative forums including Intergovernmental Department Committees (IDCs), LMACs and Ecosystem Reef Advisory Committee (ERAC). Consultative processes could be improved to engage with, negotiate with, identify and address issues and exchange information. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable
PR2 The local community is effectively engaged in the ongoing management of commercial fishing	2	<ul style="list-style-type: none"> Focus for most of the fishery engagement work has been with stakeholder groups (including managers, industry, scientists, conservation) rather than local community per se. Some regional fisheries projects (for example Burdekin, Mackay) have improved local engagement. 12 LMACs are a forum for local community engagement, and at the regional GBRMPAs offices. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable
PR3 There is a sound governance system in place to address commercial fishing	3	<ul style="list-style-type: none"> There is a comprehensive suite of legislation at the State and Commonwealth level that controls, audits and sets out processes for reviews of commercial fishing. There are intergovernmental agreements, and a Ministerial Council Forum that provide for governance and separation of roles and responsibilities. The GBRMP Act, Regulations, Zoning Plan are in place to manage some aspects of the commercial fishing from an ecosystem perspective The <i>Fisheries Act 1994</i> and subordinate legislation is in place to govern sustainable harvest and ensure the principles of Ecologically Sustainable Development (ESD) are upheld. 	<ul style="list-style-type: none"> Fisheries Annex to the Great Barrier Reef Intergovernmental Agreement between the Queensland Government and the Australian Government. 	Adequate	Stable
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for commercial fishing	3	<ul style="list-style-type: none"> Specific programs to collect fisheries information are in place; biological monitoring, stock status process, recreational surveys, logbooks, SOCI, quota, vms, licensing and performance management systems (PMSs). PMSs are in place to ensure defined objectives are met. 	<ul style="list-style-type: none"> Link to PMSsPMS: http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/fisheries-data-and-reports/sustainability-reporting/performance-measurement-systems Link to SELTMP: 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Some (biological) objectives are better defined than others (social, economic, ecosystem) as some areas data poor.</p> <ul style="list-style-type: none"> • Management agencies work closely with research and monitoring providers to monitor the performance outcomes from the Zoning Plan 2003 and fisheries management arrangements. • In addition, compliance with the zoning plan and fisheries management are used to measure commercial fishing. 	<p>http://www.nerptropical.edu.au/project/seltmp</p>		
PR5 Appropriate training is available to the managing agencies to address commercial fishing	3	<ul style="list-style-type: none"> • Appropriate training is provided as needed. • Attendance at commercial fishing and fisheries management workshops/conferences are available to management agencies. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	Adequate	Stable
PR6 Management of commercial fishing is consistently implemented across the relevant jurisdictions	2	<ul style="list-style-type: none"> • There are inconsistencies in the management arrangements for fishing in Marine Parks and fisheries management. For example, some areas closed to fishing under one regulation may be open in another. The apparatus able to be used in one regulation may be different from another. • Intergovernmental meetings provide an opportunity to discuss these monitoring, education and compliance matters. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	Adequate	Stable
PR7 There are effective processes applied to resolve differing views/conflicts regarding commercial fishing	3	<ul style="list-style-type: none"> • Good relationships exist between officers at agency level. • Statutory consultation processes identify issues and views, which are the considered by responsible governments before a decision is made. • Regional Liaison Officers and Queensland Boating and Fisheries Patrol staff are on the ground to ensure issues and conflicts are identified early so they can be discussed and resolved. • There are significant concerns within the community related to commercial fishing often related to perceptions rather than being based on evidence of ecological risks. Many concerns relate to social and economic issues but often couched in ecological terms. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness workshop 	Adequate	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with commercial fishing are appropriately considered.	3	<ul style="list-style-type: none"> • Annual stock status process considers the activities and take of commercial fishers. • Identified impacts addressed as appropriate through review 	<ul style="list-style-type: none"> • <i>Fisheries Act 1994</i> (Qld) and subordinate legislation 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>processes.</p> <ul style="list-style-type: none"> Risk of unknown impacts are limited through zoning plans which excludes 33 per cent fishing and restrictions on the types of apparatus that can be used, when fishing can occur (i.e. spawning closures), size limits and limits on catch. However, many performance triggers in PMS are not contemporary or not measured. 			
<p>PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding commercial fishing</p>	3	<ul style="list-style-type: none"> Systems and processes ensure all available information (scientific, anecdotal, etc) are used in decision making processes. Qualitative ecological risk assessments (ERAs) done for a number of Queensland fisheries (Trawl and Coral fisheries) which are largely Great Barrier Reef-specific to identify risk. Fisheries Queensland, in cooperation with commercial trawl fishery representatives with support from the GBRMPA and CSIRO has for the past 3 years conducted and identified a robust set of initiatives which would greatly improve the ecological and economic performance of the fishery, but the output has not been progressed into a plan of management arrangements for the fishery. In relation to trawling, the available biophysical information (e.g from DAFF, CSIRO, AIMS and others) has been well considered in management decision making. Access to data held by Queensland agencies has been good in recent collaborative projects. The trawl ecological risk assessment synthesises much of this information and provided a mechanism for it to be considered in decision-making. 	<ul style="list-style-type: none"> Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments 	Adequate	Improving
<p>PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding commercial fishing</p>	3	<ul style="list-style-type: none"> Information on commercial fishing and research used to the greatest extent possible in processes but is limited. .Deloitte Access Economic study 2012 The climate adaptation work and extreme weather response programs have had strong socio-economic components and this work is informing decision-making. Similarly, recent work by CSIRO/GBRMPA/DAFF funded by Fisheries Research and Development Corporation (FRDC) 	<ul style="list-style-type: none"> Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		on social aspects has had good uptake by managers.			
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding commercial fishing	2	<ul style="list-style-type: none"> Agencies liaise with traditional users of the Great Barrier Reef Marine Park via a number of means and this results in information sharing which assists in the management of fishing. Detailed and widespread understanding of traditional (Indigenous) knowledge and cultural heritage is limited. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Improving
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding commercial fishing	NA				
PR13 Relevant standards are identified and being met regarding commercial fishing	3	<ul style="list-style-type: none"> Fisheries management agencies with relevant fisheries-related standards: Environment Protection and Biodiversity Conservation Act assessment against Guidelines for the Ecologically Sustainable Management of Fisheries Conditions and recommendations on the Environment Protection and Biodiversity Conservation Act accreditation are being conditionally/progressively met. Natural Resource Management Ministerial Council and Australian Fisheries Management Forum policies and guidelines are followed. The Zoning Plan sets a level of protection (a standard) to be achieved to ensure a representative proportion of different habitats are protected. The greatest risk to these standards being met is illegal fishing. The Field Management Program/Compliance program has specific strategies for Zoning Plan compliance and the resources needed to achieve those standards. CITES Convention on Migratory Species (CMS) – Australia sets agendas for environmental stewardship in fisheries. 	<ul style="list-style-type: none"> http://www.daff.qld.gov.au/28_15487.htm http://www.gbrmpa.gov.au/_data/assets/pdf_file/0018/6165/gbrmpa_InfoSheetERAEastCoastOtterTrawlFishWeb_2010.pdf 	Adequate	Improving
PR14 Targets have been established to benchmark management performance for commercial fishing	3	<ul style="list-style-type: none"> Commercial fisheries management is regularly benchmarked against other Australian jurisdictions to ensure consistency in management approach. Fishery specific objectives, performance indicators and measures are detailed in the PMS. 	<ul style="list-style-type: none"> DAFF PMS GBRMPA Management Effectiveness workshop 	Adequate	Stable
OUTPUTS					

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for commercial fishing	2	<ul style="list-style-type: none"> In general, the GBRMPA activities and programs relating to commercial fishing have progressed in accordance with planned work programs (for example trawl ERA, Vulnerability Assessment, Social Objectives work, inputs to Trawl Plan Review, Climate adaptation planning all progressed in 2010 – 2012 with delivery of outputs, for example, reports, workshops, frameworks etc). Management recommendations from the independent review of the ECIFFF in 2008, such as an updated harvest strategy for sharks focused on species-based management of high risk species and/or species groups have had minimal progress. 	<ul style="list-style-type: none"> Vulnerability Assessment ECIFFF 	Adequate	Stable
OP2 Implementation of management documents and/or programs relevant to commercial fishing have progressed in accordance with timeframes specified in those documents	2	<ul style="list-style-type: none"> Once in place implementation does occur within given timeframes. DAFF is required to review all management plans and regulations every 10 years. Performance Management Systems specify timeframes for actions, and a three- month timetable for a response to issues. Several major management and research studies completed and informing management, extension work on bycatch reduction and Trawl Plan review process over the last two-years, but actual management changes to protect values and improved practices is more limited. With better resourcing, the Field Management Program's compliance and enforcement program could be more effectively implemented and progressed. 	<ul style="list-style-type: none"> FMP program reports Trawl plan GBRMPA Management Effectiveness workshop 	Adequate	Stable
OP3 The results (in OP1 above) have achieved their stated management objectives for commercial fishing	2	<ul style="list-style-type: none"> Limited entry and input and output controls are in place for all fisheries and are providing the required restrictions to prevent overfishing. Finer controls are required to effectively manage remaining risks or to ensure existing controls are operating as effectively as desired to achieve optimum management. 	<ul style="list-style-type: none"> DAFF web site 	Adequate	Stable
OP4 To date, products or services have been produced in accordance with the stated management objectives for commercial fishing	3	<ul style="list-style-type: none"> Fishery reports are produced annually as per the Sustainability Guidelines; DAFF continues to deliver products and services to deliver ESD objective under the Act: annual fishery reports, stock status, educational material, enforcement/compliance, data from logbooks, new SOCI information 	<ul style="list-style-type: none"> DAFF web site ECIFFF EPBC GBRMPA Management Effectiveness workshop 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Large reporting framework for the ECIFFF to demonstrate that the fishery (post management changes) meets National Sustainability Guidelines under EPBC Act. Fisheries remain accredited under EPBC Act. Reduced operating and staff resources have resulted in declines in some activities and the cessation of others. While this has not compromised overall management effectiveness, it is a concern. 			
OP5 Effective knowledge management systems regarding commercial fishing are in place within agencies	3	<ul style="list-style-type: none"> Data on commercial fishing is maintained and stored securely. Data is shared between agencies and with the community. Annual reporting by fishery and stock which retains information in Fisheries Queensland systems 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
OP6 Effective systems are in place to share knowledge on commercial fishing with the community	3	<ul style="list-style-type: none"> A range of reports are available on the Fisheries Queensland website. Results of commercial fishing activity are available online and status reports are also publically available. Social media and other education programs are in place. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing commercial fishing and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> Commercial fishing is a highly regulated activity with many levels of redundancy built in to ensure sustainable management and take. Illegal fishing activities undermine the attainment of the desired outcomes. Fisheries remain accredited under EPBC Act (assessed against National Sustainability Guidelines) While almost all fisheries sectors demonstrate varying degrees of progress towards desired biodiversity outcomes, there are still fishing operations whose activities are believed to be largely illegal in nature and which undermine the attainment of desired outcomes. Compliance management could be improved with increased use of available technology. Development and testing of new net designs (for example with breakaway panels to reduce dugong bycatch) are supported to move towards sustainable net designs. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
OC2 The outputs relating to commercial fishing are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> Stock status assessments indicate fish stocks are in generally good shape. Only one species taken by fishers in the Great Barrier Reef is considered to be overfished – snapper. New management arrangements have been introduced for this species in an effort to rebuild stocks. Compliance in remote areas in particular is of concern. Localised depletion may be occurring in some areas due to excessive levels of illegal fishing activity. Management arrangements are generally considered to be appropriate but there remains room for improvement. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
OC3 the outputs (refer OP1 and 3) for commercial fishing are reducing the major risks and the threats to the Great Barrier Reef	2	<ul style="list-style-type: none"> Restrictions in place protect both biodiversity and stocks from overfishing. There are increasing concerns regarding the levels of non-compliance with marine no-take areas in the Great Barrier Reef Marine Park in recent years. Management measures in place are reducing the major threats and risks to the Great Barrier Reef from commercial fishing but illegal fishing, mainly by infringement of no-take marine reserves, has the potential to significantly impact on biodiversity in short periods of time in localised areas. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to commercial fishing is demonstrably environmentally sustainable	2	<ul style="list-style-type: none"> Restrictions in place protect both biodiversity and stocks from overfishing and stock status assessments ensure this result. The greatest impediment to demonstrating environmentally sustainable fishing is ongoing and in some sectors increasing illegal fishing activities. While all commercial fisheries have made significant progress towards achieving better sustainability outcomes as a result of improved management arrangements, excess capacity and illegal fishing activities continue to undermine these outcomes. There are particular concerns about non-compliance in the commercial netting special management areas which are critical to species of conservation concern and matters of national environmental significance such as dugongs and the Australian snubfin dolphin. The remoteness of some of 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Improving

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
		these locations makes enforcement particularly challenging, for example in the Princess Charlotte Bay Special Management Area which is an area with significant populations of dugong and inshore dolphins — both species of conservation concern and matters of national environmental significance.			
OC5 Use of the Great Barrier Reef relating to commercial fishing is demonstrably economically sustainable	2	<ul style="list-style-type: none"> • A significant number of commercial fishing operations work in the Great Barrier Reef. The high participation rate demonstrates that fishing is an economically viable participation. • Current management arrangements are not maximising the economic benefits available with reduced participation as result of both affordability • There has been a reduction in the number of fishing licences operating - self adjusting; removal removed 35 licences and 146 symbols from inshore net fishery to address economic and social objectives • External marketing issues have been raised as issues for fishers; seasonality based events effect economics (cyclones and floods). 	<ul style="list-style-type: none"> • Queensland Department of Agriculture, Fisheries and Forestry • Great Barrier Reef Marine Park Authority 	Adequate	Improving
OC6 Use of the Great Barrier Reef relating to commercial fishing is demonstrably socially sustainable enhancing understanding and/or enjoyment	3	<ul style="list-style-type: none"> • There are significant concerns within the community related to commercial fishing often related to perceptions rather than being based on evidence of ecological risks. Many concerns relate to social and economic issues but often couched in ecological terms. The “social licence”, i.e. community confidence, in the industry is at low levels due to many factors including misinformation, misunderstanding, global fishing practices which are illegal in Australia (for example shark finning) and the illegal actions of a few operators in the Great Barrier Reef. • Fishing from all sectors is likely to have large, but unquantified socio/community benefits. • Valuable ecosystem services and economic/social benefits enjoyed by the community from a healthy Great Barrier Reef are at risk. 	<ul style="list-style-type: none"> • Queensland Department of Agriculture, Fisheries and Forestry • Great Barrier Reef Marine Park Authority 	Adequate	Stable
OC7 The relevant managing agencies have developed effective partnerships with local	2	<ul style="list-style-type: none"> • Commercial fishing is a highly dispersed activity with stakeholders having a view based on personal/local 	<ul style="list-style-type: none"> • Queensland Department of Agriculture, Fisheries and Forestry 	Adequate	Stable

Component of management of fishing (commercial)	Rating	Justification	Evidence/sources	Confidence	Trend
communities and/or stakeholders to address commercial fishing		<p>experiences and business needs. This can cause partnership difficulties where information being provided by agencies are inconsistent with particular community or individual views.</p> <ul style="list-style-type: none"> • This is addressed as best as possible through regional officers from each agency who liaise with regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to recreational fisheries. • Regular meetings with industry representatives keep communication lines open, help identify and address issues and allow negotiations to occur when needed. 	<ul style="list-style-type: none"> • Great Barrier Reef Marine Park Authority 		

Table 24 Calculation of grades for fishing (recreational)

39,40,41

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to recreational fishing are understood by managers	3	<ul style="list-style-type: none"> The most common recreational fishing method (80 per cent) is line fishing (including the use of hooks and lures), followed by fishing with pots (13 per cent). Together, fishing with cast nets, hand collection, pumps and spades, diving using spears, and hand collection comprised only seven per cent of all fishing effort. In the Great Barrier Reef Region, coral trout, red throat emperor, tropical snapper, morwong and sweetlip are commonly targeted by recreational fishers. Hundreds of other species of bony fish, sharks and other animals are also caught. Recreational fishing provides economic and social benefits to Queensland's communities. Fishing on the Great Barrier Reef has been an important recreational activity for coastal residents and visitors. Most people indicate that relaxation, socialising, catching fish and excitement are their reasons for fishing recreationally. In 2008, more than half of all people visiting the Great Barrier Reef for recreational purposes went fishing. 	<ul style="list-style-type: none"> Recreational Fisheries. FAO. Guidelines for responsible fisheries (www.fao.org/docrep/016/i2708e/i2708e00.pdf) Fisheries Act 1994 (Qld) and subordinate legislation Great Barrier Reef Strategic Assessment EPBC Guidelines on the ecologically sustainable management of fisheries http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html DAFFQ 2007 Annual Status Report 	Adequate	Improving
CO2 The current condition and trend of values relevant to recreational fishing are known by managers	3	<ul style="list-style-type: none"> A 2010 survey indicated that people are catching fewer fish for a similar level of effort compared to a decade ago. This may reflect lower abundances of some target species after many decades of fishing pressure. A typical fishing trip is less than 20 kilometres, and often involves boating to a location and staying there to fish. A trend towards larger, more powerful, more fuel-efficient vessels, combined with improvements in safety, mean recreational fishers may be likely to fish further from the mainland. Recreational fishing in the remote far north of the Region is increasing, due to factors such as improved road access, catch availability and infrastructure improvements. In addition, improved navigation and positioning systems make it more likely that fishers will be able to relocate specific fishing sites and increase their effectiveness at 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments Recreation Management Strategy: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0005/16835/gbrmpa-RecreationManagementStrategy-2012.pdf The 2010 State-wide Recreational Fishing Survey is on the Queensland Fisheries survey webpage (http://www.daff.qld.gov.au/28_18273.htm) 	Limited	Improving

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>catching fish.</p> <ul style="list-style-type: none"> A large proportion (for example, 60 per cent for inshore species) of the recreational catch is subsequently released, either through the increasingly popular practice of catch and release or because they are undersized or unwanted. While there is some information on the survival success of many of the released species not all species are understood. 			
CO3 Impacts (direct, indirect and cumulative) associated with recreational fishing are understood by managers.	3	<ul style="list-style-type: none"> Recreational fishing is a significant extractive use of the Region, removing marine animals from various trophic groups. In 2010–11, an estimated 13.3 million fish were caught by recreational fishers who reside in Queensland, plus 8.3 million animals of other species including crustaceans (such as crabs, prawns and lobster) and cephalopods (for example, squid and octopus). A substantial, but as yet unquantified, portion of these catches occurred in the Region, and for some species most of the catch was taken there. The main target species are coral trout and cod, emperor, tropical snapper, barramundi, bream, mackerel, whiting, crab, lobster and bait fish.¹ While the impacts resulting from each recreational fishing visit are relatively minor, the large number of participants is likely to contribute to a cumulative effect on Great Barrier Reef values. Technological improvements (for example, widespread use of positioning systems and sounders) have also allowed more efficient and targeted fishing by recreational fishers. The species targeted by recreational fishers are mostly the same as those targeted by commercial fishers, increasing cumulative impacts on those species. Recreational fishery harvest levels have contributed to concerns about the population status of some species. Recreational fishing activities contribute to other impacts on values such as the death of discarded species, including some species of conservation concern. This includes drowning of marine turtles in poorly designed crab pots, bycatch of sharks and rays and incidental catch of seabirds. The recreational catch of sharks is highest in the northern part of the Region. A large proportion of the recreational catch is subsequently released (for example, 60 per cent for inshore fishing), either through the increasingly popular practice of 'catch and release' or because they are undersized or unwanted species. High release rates have been 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment Recreational fishing survey results The 2010 State-wide Recreational Fishing Survey is on the Queensland Fisheries survey webpage Annual status assessments of stock are undertaken (Queensland) Research on barotrauma and release mortality studies 	Adequate	Improving

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>reported for snapper, barramundi, stripey snapper, Australian bass, sharks, and cod and groper; the highest rates are for sharks with 94 per cent released.</p> <ul style="list-style-type: none"> • The ecosystem effects and cumulative impacts of recreational fishing are poorly understood, but are likely to be most concentrated in inshore areas close to major population centres and a relatively small number of offshore reefs. Local depletion, particularly of some inshore species, is of concern in some areas but is offset by conservative management such as minimum legal sizes and use of green zones. Increasing numbers of seasonal recreational fishers may increase the pressure on specific species and locations, but these impacts are also largely unquantified. • With regard to physical damage to the environment, the most likely impact resulting from recreational fishing is localised anchor damage at popular fishing grounds. This damage is likely to be more significant on fragile fringing reefs or nearshore islands. Fishing gear may also damage fragile species such as corals. Discarded fishing gear (from all fishery sectors) contributes to marine debris in the Region, and can entangle or kill marine animals, including species of conservation concern. Education programs and responsible fishing guides are used to educate fishers in an attempt to change behaviours. • Knowledge of recreational fishing effort in the Great Barrier Reef is still limited to broadscale knowledge, though has improved with various studies in recent times. 			

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
CO4 The broader (national and international) level influences relevant to recreational fishing are understood by managers.	4	<ul style="list-style-type: none"> Fisheries management is undertaken to a high level within the bounds of standards set by the Food and Agriculture Organization (FAO) and the Australian Fisheries Management Forum. External influences on recreational fishing such as habitat modification, climate change and resource sharing are understood by managers. Reef-dependent activities including fishing are vulnerable to the negative effects that ocean acidification, sea level rise, more frequent extreme weather and warming sea temperatures may have on Reef condition. It is likely fishing activities will be highly sensitive to climate change, including projected changes in fish abundance, survivorship,^{39,40,41} size and distribution, disruptions to shallow water nurseries and loss of coral reef habitats, as well as changes in cyclone and storm activity.^{42,43,44} There is increasing acknowledgment that fisheries management of fishing in the World Heritage Area (declared because of its outstanding universal value based on natural values) could be more precautionary than that which exists for fisheries outside marine protected areas in Australia. 	<ul style="list-style-type: none"> Recreational Fisheries. FAO. Guidelines for responsible fisheries (www.fao.org/docrep/016/i2708e/i2708e00.pdf) Australian Fisheries Management Forum and subcommittees 	Adequate	Improving
CO5 The stakeholders relevant to recreational fishing are well known by managers.	4	<ul style="list-style-type: none"> Management agencies in general have very good relationships with recreational fishing bodies. Following the RAP the Authority developed regional officers to liaise with the community, especially regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to the recreational fisheries. Recreational fishing surveys identify community trends and demographics. 	<ul style="list-style-type: none"> Reef Guardian Fishers (http://www.gbrmpa.gov.au/our-partners/reef-guardians/reef-guardian-fishers) Rec fishing surveys 	Adequate	Stable
PLANNING					
PL1 There is a planning system in place that effectively addresses recreational fishing	3	<ul style="list-style-type: none"> Zoning Plan - The GBRMP Zoning Plan 2003 Recreational fishing participation is not controlled by inputs other than fishing gear and seasonal constraints, (for example, barramundi closed season), but is subjected to output controls including size and possession limits for most species. Some limited fishing and collecting by recreational users is managed via Regulation 15 of the Great Barrier Reef Marine Park Regulations 1983 – however take is not measured and compliance is not targeted. 	<ul style="list-style-type: none"> GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans Granek et al 2008 is an international peer reviewed case study paper with one of the case studies being the zoning of the Great Barrier Reef and their recreational fishers involvement in the conservation and management of the Great Barrier Reef. <i>Fisheries Act 1994</i> (Qld) and subordinate legislation 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • Bag and size limits apply to most fish in the Great Barrier Reef and anglers are limited in the apparatus they are permitted to use. • Recreational fishing is explicitly considered in the development of new management arrangements for fishing. 			
PL2 The planning system for recreational fishing addresses the major factors influencing the Great Barrier Reef Region's values.	3	<ul style="list-style-type: none"> • Zoning Plan - increased Green zones to ~33 per cent - research (Harrison et al (2012) has shown that populations of commercially and recreationally important fish species within Green zones exported 55-83 per cent of offspring to adjacent reefs open to fishing. This indicates that the reserve areas within the Keppel Island are making significant contributions to the replenishment of populations on both reserve and fished reefs at a scale beneficial to stakeholders. • Regulations can be made for recreational fishers to limit catch, equipment and areas open to fishing to ensure sustainable limits are in place. 	<ul style="list-style-type: none"> • Harrison et al 2012. • Fisheries Act 1994 (Qld) and subordinate legislation 	Adequate	Improving
PL3 Actions for implementation regarding recreational fishing are clearly identified within the plan	3	<ul style="list-style-type: none"> • The planning process for marine park zoning and fisheries management clearly identifies actions that are relevant to recreational fishing. • Other plans (for example Biodiversity Conservation Strategy, Climate Change Action Plan and Adaptation Strategy) also identify some fishery-related actions. • Better consistency between actions of Marine Park and fisheries management required to provide a clear direction. 	<ul style="list-style-type: none"> • Climate change vulnerability assessment 2007 • Draft Biodiversity Strategy • Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments • Fisheries Act 1994 (Qld) and subordinate legislation 	Adequate	Stable
PL4 Clear, measurable and appropriate objectives for management of recreational fishing have been documented	3	<ul style="list-style-type: none"> • The Regulations and the Zoning Plan are very clear in specifying what activities and actions can occur for recreational fishing within the GBRMPA's jurisdiction. • The Recreation Management Strategy has general objectives for understanding and managing recreational use (for example best practice, voluntary compliance and infrastructure). While it identifies the impact of recreational take of marine resources as a risk area, it does not specifically address management arrangements for recreational fishing, recognising that is a matter for its partner agency Fisheries Queensland. • Fisheries Act 1994 sets out ESD objectives for the management of fishing. 	<ul style="list-style-type: none"> • GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans • Recreational Management Strategy: http://www.gbrmpa.gov.au/data/assets/pdf_file/0005/16835/gbrmpa-RecreationManagementStrategy-2012.pdf • Fisheries Act 1994 (Qld) and subordinate legislation 	Adequate	Improving
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to	3	<ul style="list-style-type: none"> • Recreational fishing surveys are conducted on a statewide basis • Long-Term Monitoring programs collect some data from recreational catches. • Compliance activities record levels of compliance with recreational fishing rules. 	<ul style="list-style-type: none"> • Queensland Department of Agriculture, Fisheries and Forestry website. 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
recreational fishing					
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address recreational fishing	3	<ul style="list-style-type: none"> All agencies have good relationships with recreational fishing bodies Following the RAP the GBRMPA developed regional officers to liaise with the community, especially regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to the recreational fisheries. The Tourism and Recreation and the E RAC includes a representative from Sunfish. Management review working groups involve input from recreational fishers. Fisheries management proposals are made available for public comment and input is sought from representative bodies in the identification and development of options for future management. . 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry website. Queensland <i>Statutory Instruments Act 1992</i> and guidelines for Regulatory Impact Statements. 	Adequate	Improving
PL7 Sufficient policy currently exists to effectively address recreational fishing	3	<ul style="list-style-type: none"> Fishing is a highly regulated activity with both Commonwealth and State Acts and subordinate legislation in place to ensure recreational fishing is limited to sustainable take. The GBRMPA has no specific policies on recreational fishing and relies on the zoning plan. The GBRMPA has produced a Recreation Management Strategy which identifies the impact of recreational take of marine resources as a risk area, but does not specifically address management arrangements for recreational fishing. Responsible Reef Practices (GBRMPA website) covers a number of activities that are associated with recreational fishing (for example, boating, fishing, anchoring and mooring, collecting) Recreational fishing in the Great Barrier Reef is consistent with the FAO approach to responsible fishing practices. 	<ul style="list-style-type: none"> Recreational Management Strategy: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0005/16835/gbrmpa-RecreationManagementStrategy-2012.pdf Queensland Department of Agriculture, Fisheries and Forestry website. <i>Fisheries Act 1994</i> (Qld) and subordinate legislation Queensland <i>Statutory Instruments Act 1992</i> and guidelines for Regulatory Impact Statements. <i>Responsible Reef Practices</i>: http://www.gbrmpa.gov.au/visit-the-reef/responsible-reef-practices Recreational Fisheries. FAO. Guidelines for responsible fisheries (www.fao.org/docrep/016/i2708e/i2708e00.pdf) 	Adequate	Stable
PL8 There is consistency across jurisdictions when planning for recreational fishing	Low 3	<ul style="list-style-type: none"> Multiple agencies and governments are involved in fishing management: Queensland DAAF, DOTE, and the GBRMPA. All have the responsibility to ensure sustainable use of fisheries resources but, given the nature of their Acts, for different reasons (for example, biodiversity protection and sustainable harvest). Given these different objectives there are times when approach to planning for recreational fishing can be in conflict. 	<ul style="list-style-type: none"> Fisheries Annex to the Great Barrier Reef intergovernmental agreement between the Queensland Government and the Australian Government. 	Adequate	Stable
PL9 Plans relevant to recreational fishing provide certainty	4	<ul style="list-style-type: none"> Zoning and management arrangements at all levels of government provide certainty regarding where uses may occur and the type of activities allowed. 	<ul style="list-style-type: none"> GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.		<ul style="list-style-type: none"> Recreational fishers do not require permits or licences to fish. Businesses conducting charter fishing operations must hold a licence from the State government and a permit from the GBRMPA. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry website. <i>Fisheries Act 1994</i> (Qld) and subordinate legislation 		
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address recreational fishing	3	<ul style="list-style-type: none"> Recreational fishing surveys are financed every 2-4 years. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry website. <i>Fisheries Act 1994</i> (Qld) and subordinate legislation 	Adequate	Deteriorating
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address recreational fishing	3	<ul style="list-style-type: none"> The Authority has two full time equivalent managers working on sustainable commercial and to a lesser extent recreational fishing. Some work is also done on sustainable fishing through the Reef Guardian Program (commercial fishing only at this stage) and the Tourism and Recreation Group (charter fishing operations and recreational use more generally). Staff resources and expertise related to recreational fishing remains within DAFF to progress prioritised issues. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Deteriorating
IN3 The right skill sets and expertise are currently available to the managing organisations to address recreational fishing	3	<ul style="list-style-type: none"> The skill set within the Authority and DAFF is of a high quality and experienced with most staff having marine or fisheries management training at tertiary level. These skill sets generally meet the needs for managing commercial and recreational fishing. Many external agencies and stakeholders rely on and trust the knowledge and expertise provided for informing management of fisheries and marine resources in the Great Barrier Reef World Heritage Area. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address recreational fishing	3	<ul style="list-style-type: none"> Substantial advances have been made in the past decade but there are still information gaps for some species and ecosystem function in general. The Great Barrier Reef Biodiversity Conservation Strategy 2012 and Vulnerability Assessments provide some biophysical information relevant to fisheries. National approaches to fisheries management have seen the broadening of the scope of management from ecologically sustainable development (ESD) to Ecologically Based Fisheries Management (EBFM) 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment Biodiversity Conservation Strategy Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments Australian Fisheries Management Forum Fisheries Research and Development website. 	Adequate	Improving

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
IN5 The necessary socio-economic information is currently available to address recreational fishing	3	<ul style="list-style-type: none"> Deloitte Access Economics report provides improved data on recreational fishing Social and economic data is not currently routinely collected but has been the focus of many recent research programs. 	<ul style="list-style-type: none"> Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Fisheries Research and Development website. 	Adequate	Improving
IN6 The necessary Indigenous heritage information is currently available to address recreational fishing	2	<ul style="list-style-type: none"> The GBRMPA liaises with traditional users of the Marine Park via a number of means and this results in information sharing which assists in the management of fishing. However a detailed and widespread understanding of traditional (Indigenous) knowledge and cultural heritage is limited. Commercial and recreational fishing has been excluded in certain areas in the past on the basis of Indigenous heritage DAFF has worked with Traditional Owners in the establishment and recognition of Indigenous protected areas. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority http://www.environment.gov.au/indigenous/ipa/sea.html 	Adequate	Stable
IN7 The necessary historic heritage information is currently available to address recreational fishing	NA	<ul style="list-style-type: none"> 			
IN8 There are additional sources of non-government input (for example volunteers) contributing to address recreational fishing	3	<ul style="list-style-type: none"> Following the RAP the GB RMPA developed regional officers to liaise with the community, especially regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to the recreational fisheries. Many recreational fishing groups, individuals and conservation groups volunteer significant amounts of time to ensure their issues are represented and where possible addressed. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of recreational fishing	3	<ul style="list-style-type: none"> Managers have good relationships with the majority of the recreational fishing groups along the Great Barrier Reef Marine Park coast. Regional officers are employed to liaise with the community, including regional fishing stakeholders. This stakeholder engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to the recreational fisheries. Recreational fishers are represented on management working groups as needed and regular meetings are held with representative bodies such as Sunfish. Public consultation for options for future management involves the publication of consultation documents and public meetings in regional centres to obtain feedback and ideas. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
PR2 The local community is effectively engaged in the ongoing management of recreational fishing	3	<ul style="list-style-type: none"> Focus for most of the fishery engagement work has been stakeholder groups (including managers, industry, scientists, conservation) at state and regional levels. Some regional fisheries projects (for example Burdekin, Mackay) have focused on local engagement. Members of the community have the opportunity to comment on proposed management changes with discussion papers and regional meetings occurring during management reviews that occur every 5–10 years. 12 LMACs are a forum for local community engagement, and the regional the Authority's offices. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
PR3 There is a sound governance system in place to address recreational fishing	3	<ul style="list-style-type: none"> The GBRMP Act, Regulations, Zoning Plan are in place to manage some aspects of the recreational fisheries from an ecosystem perspective The <i>Fisheries Act 1994</i> and subordinate legislation is in place to govern sustainable harvest and ensure the principles of Ecologically Sustainable Development (ESD) are upheld. A fisheries annex to the Great Barrier Reef Intergovernmental Agreement between the Queensland Government and the Australian Government sets out the roles and responsibilities of each agency. 	<ul style="list-style-type: none"> Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans Fisheries Annex to the Great Barrier Reef intergovernmental agreement between the Queensland Government and the Australian Government. <i>Fisheries Act 1994</i> (Qld) and subordinate legislation 	Adequate	Stable
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for recreational fishing	3	<ul style="list-style-type: none"> Long-Term Monitoring and survey data are used in conjunction with commercial data and research to regularly assess the impacts of fishing on target stocks. Management agencies work closely with research and monitoring providers to monitor the performance outcomes from the Zoning Plan 2003 and fisheries management arrangements. In addition, compliance with the zoning plan and fisheries management are used to measure recreational fishing. 	<ul style="list-style-type: none"> GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans 	Adequate	Stable
PR5 Appropriate training is available to the managing agencies to address recreational fishing	3	<ul style="list-style-type: none"> Appropriate training is provided as needed. Attendance at recreational fishing and fisheries management workshops/conferences are available to management agencies. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority Australian Fisheries Management Forum and subcommittees 	Adequate	Stable
PR6 Management of recreational fishing is consistently implemented across the relevant jurisdictions	2	<ul style="list-style-type: none"> There are inconsistencies in the management arrangements for recreational fishing in Marine Parks and fisheries management. For example some areas closed to fishing under one regulation may be open in another, the apparatus able to be used in one regulation may be different from another. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
PR7 There are effective processes	2	<ul style="list-style-type: none"> Good relationships exist between officers at agency level. Statutory consultation processes identify issues and views, which are 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
applied to resolve differing views/ conflicts regarding recreational fishing		<p>the considered by responsible governments before a decision is made.</p> <ul style="list-style-type: none"> Regional Liaison Officers and Queensland Boating and Fisheries Patrol staff are on the ground to ensure issues and conflicts are identified early so they can be discussed and resolved. All opinions and evidence are considered as part of the decision-making process 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 		
PR8 Impacts (direct, indirect and cumulative) of activities associated with recreational fishing are appropriately considered.	3	<ul style="list-style-type: none"> Annual stock status process considers the take Risk of unknown impacts are limited through zoning plans which excludes fishing in some areas and restricts the types of apparatus that can be used, when fishing can occur (i.e. spawning closures) and bag and size limits. 	<ul style="list-style-type: none"> <i>Fisheries Act 1994</i> (Qld) and subordinate legislation Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Limited	Improving
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding recreational fishing	3	<ul style="list-style-type: none"> Biophysical data relevant to fishing has improved with the Biodiversity Conservation Strategy and Vulnerability Assessments, and the Coastal Ecosystem Framework. 	<ul style="list-style-type: none"> Biodiversity Conservation Strategy Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments Queensland Department of Agriculture, Fisheries and Forestry 	Adequate	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding recreational fishing	3	<ul style="list-style-type: none"> Deloitte Access Economic study and the other projects. Recreational fishing surveys and research used to the greatest extent possible in processes Fisheries Queensland (FQ) conduct good surveys in conjunction with their statewide surveys. RSP Project (Economic Contribution of the Great Barrier Reef) Access Economics report estimates substantial \$\$ value of the recreational fishing industry. 	<ul style="list-style-type: none"> Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Queensland Department of Agriculture, Fisheries and Forestry 	Adequate	Improving
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding recreational fishing	2	<ul style="list-style-type: none"> Agencies liaise with traditional users of the Great Barrier Reef Marine Park via a number of means and this results in information sharing which assists in the management of fishing. Detailed and widespread understanding of traditional (Indigenous) knowledge and cultural heritage is limited. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry 	Limited	Improving
PR12 The best available historic heritage information is	NA				

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
applied appropriately to make relevant management decisions regarding recreational fishing					
PR13 Relevant standards are identified and being met regarding recreational fishing	3	<ul style="list-style-type: none"> Recreational fishing is managed in accordance with the FAO guidelines for responsible fishing. Fisheries management arrangements are readily comparable to other jurisdictions and regularly discussed at the Australian Fisheries Management Forum. Gear restrictions, areas available to fishing and bag and size limits effectively control recreational fishing. The greatest risk to these standards being met is illegal fishing. Voluntary best practice standards for fishing (Responsible Reef Practices) 	<ul style="list-style-type: none"> Recreational Fisheries. FAO. Guidelines for responsible fisheries (www.fao.org/docrep/016/i2708e/i2708e00.pdf) Australian Fisheries Management Forum GBRMPA website on Zoning: http://www.gbrmpa.gov.au/zoning-permits-and-plans 	Adequate	Stable
PR14 Targets have been established to benchmark management performance for recreational fishing	3	<ul style="list-style-type: none"> Recreational fisheries management is regularly benchmarked against other Australian jurisdictions to ensure consistency in management approach. 	<ul style="list-style-type: none"> Australian Fisheries Management Forum 	Adequate	Stable
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for recreational fishing	Low 3	<ul style="list-style-type: none"> Gear restrictions, areas available to fishing and bag and size limits effectively control recreational fishing. Conservative arrangements (for example, 30 per cent no fishing zone in the Reef) provide a significant level of precautionary management against the impacts of fishing. The Recreational Management Strategy considers the risks associated with recreational fishing (take of marine resources) to be medium, but does not specifically address a management program for recreational fishing. It does however address the general objectives for understanding and managing recreational use (for example, best practice, voluntary compliance and infrastructure). 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority <i>Fisheries Act 1994</i> (Qld) and regulations Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable
OP2 Implementation of management documents and/or programs relevant to recreational fishing have progressed in accordance with timeframes specified in	3	<ul style="list-style-type: none"> An education program for recreational fishers is maintained by DAFF with an annual cycle of information and education materials available through media, online and distribution by staff. The main programs for recreational fishing are associated with the zoning plan, and through Fisheries Queensland limits on catch. Voluntary groups such as Mackay Recreational Fishers Alliance (take a kid fishing day) and the work of InfoFish A targeted education and compliance strategy has been implemented 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority <i>Fisheries Act 1994</i> (Qld) and regulations 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
those documents		to help give effect to the zoning plans, with focus on high-risk threats.			
OP3 The results (in OP1 above) have achieved their stated management objectives for recreational fishing	3	<ul style="list-style-type: none"> Recreational fishing is deemed a sustainable activity in the Great Barrier Reef. The issues with illegal fishing in the recreational fishing sectors is undermining management efforts. More work is required to reduce risks and impacts for species vulnerable to overfishing, to mitigate protected species interactions; and to reduce bycatch. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry web site <i>Fisheries Act 1994</i> (Qld) and regulations 	Adequate	Stable
OP4 To date, products or services have been produced in accordance with the stated management objectives for recreational fishing	3	<ul style="list-style-type: none"> Informing public about rules: such as zoning maps, GPS products, DAFFQ range of bag/size limit products have been produced and disseminated in accordance with objectives 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority <i>Fisheries Act 1994</i> (Qld) and regulations 	Adequate	Stable
OP5 Effective knowledge management systems regarding recreational fishing are in place within agencies	3	<ul style="list-style-type: none"> Data on recreational fishing is maintained and stored securely. Data is shared between agencies and with the community. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry web site 	Limited	No clear trend
OP6 Effective systems are in place to share knowledge on recreational fishing with the community	3	<ul style="list-style-type: none"> Results of recreational fishing surveys are available online and status reports are also publically available. Social media and other education programs are in place. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry web site 	Limited	No clear trend
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing recreational fishing and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> Recreational fishing is a highly regulated activity with many levels of redundancy built in to ensure sustainable management and take. Illegal fishing activities undermine the attainment of the desired outcomes. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
OC2 The outputs relating to recreational fishing are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> Stock status assessments indicate fish stocks are in generally good shape. Only one species taken by recreational fishers in the Great Barrier Reef is considered to be overfished – snapper. New management arrangements have been introduced for this species in an effort to rebuild stocks. Compliance in remote areas in particular is of concern. Localised 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
		depletion may be occurring in some areas due to excessive levels of illegal fishing activity.			
OC3 the outputs (refer OP1 and 3) for recreational fishing are reducing the major risks and the threats to the Great Barrier Reef	2	<ul style="list-style-type: none"> Restrictions in place protect both biodiversity and stocks from overfishing. Recreational fishing is poorly quantified and increasing trends are likely to pose a management challenge to ensure continued sustainability (for example, recreational fishing licences). There are increasing concerns regarding the levels of non-compliance with marine no-take areas in the Marine Park in recent years. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
OC4 Use of the Great Barrier Reef relating to recreational fishing is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> Restrictions in place protect both biodiversity and stocks from overfishing and stock status assessments confirm this result. The greatest impediment to demonstrating environmentally sustainable fishing is ongoing illegal fishing activities. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Great Barrier Reef Marine Park Authority 	Adequate	Stable
OC5 Use of the Great Barrier Reef relating to recreational fishing is demonstrably economically sustainable	3	<ul style="list-style-type: none"> Other industries (tourism and dive) rely on the health of the Great Barrier Reef (one aspect being sustainable fishing) for continued operation. SP Project: Economic Contribution of the Great Barrier Reef Report has estimated what value the Great Barrier Reef supports with regard to commercial and recreational fishing RSP Project (Economic Contribution of the Great Barrier Reef) Access Economics report estimates substantial \$\$ value of the recreational fishing industry. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	Stable
OC6 Use of the Great Barrier Reef relating to recreational fishing is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> Surveys of recreational fishing and boat ownership details would indicate the recreational participation in the Great Barrier Reef has remained stable for the last decade indicating the social benefits from recreational fishing continues. Some recreational fishers do not believe their views and concerns are being considered in relation to resource allocation. Some would like to see the commercial fishing industry removed or reduced to allow a greater share of the resource available to recreational fishing. Recreational fishing has large community benefits, not just in supporting ancillary industries but in the health and wellbeing of those that participate. 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry 	Adequate	Stable
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to	3	<ul style="list-style-type: none"> Recreational fishing is a highly dispersed activity with most stakeholders having a view based on personal/local experiences. This can cause partnership difficulties where information being provided by agencies is inconsistent with particular community or individual views. Following the RAP the Authority developed regional officers from each agency who liaise with regional fishing stakeholders. This stakeholder 	<ul style="list-style-type: none"> Queensland Department of Agriculture, Fisheries and Forestry web site Great Barrier Reef Marine Park Authority web site 	Adequate	Stable

Component of management of fishing (recreational)	Rating	Justification	Evidence/sources	Confidence	Trend
address recreational fishing		engagement strategy has been highly effective in identifying and liaising with stakeholders relevant to recreational fisheries.			

Table 25 Calculation of grades for ports

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to ports are understood by managers	3	<ul style="list-style-type: none"> There are 12 trading ports in the World Heritage Area, managed by four port authorities — all Queensland Government-owned corporations. Of these, eight are located at least partly in the Region and only the minor ports of Cooktown and Quintell Beach in Cape York are located within the Marine Park. The individual port management agencies have a relevant understanding of the Great Barrier Reef relevant to ports Environmental values relevant to ports are well documented, but notwithstanding inconsistent and sometimes nebulous linkages between development and operation of ports in relation to GBRMPA's powers and responsibilities. There is good reason to suggest that management outcomes would be better served by a more comprehensive understanding by the GBRMPA of how factors related to the development and operations of ports may influence the Marine Park, and a more coherent approach to their management. 	<ul style="list-style-type: none"> The Draft Queensland Ports Strategy Great Barrier Reef Ports Strategy 2012-2022 http://www.dsdip.qld.gov.au/infrastructure-and-planning/queensland-ports-strategy.html Chapter 4 and 5 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified. See also Coastal Zone Strategic Assessment demonstration case on Abbott Point. Abbot Point Cumulative Impact Assessment: https://file.ac/ehlqGK_SVm0/. Improved dredge material management in the Great Barrier Reef Region DRAFT Ports Position Statement approved through MPA Board in October 2012 for public comment (not anticipated to be release until after strategic assessment) Ports and Shipping Information paper on GBRMPA website 	Adequate	Improving
CO2 The current condition and trend of values relevant to ports are known by managers	3	<ul style="list-style-type: none"> There is no evidence to suggest that individually, the Great Barrier Reef ports are not well managed in terms of minimising adverse influences upon the Marine Park. Nevertheless, the absence of any clear management objectives as may be articulated by GBRMPA, and lack of comprehensive, coordinated monitoring data detracts from demonstrating effective management of ports, for example, no coordinated marine species surveillance program and limited data collection/coherency of information regarding marine fauna vessel strikes 	<ul style="list-style-type: none"> Deloitte Access Economics 2011, Queensland Resource Council Queensland resource sector state growth outlook study. Chapter 5 and 7 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified' See also Coastal Zone Strategic Assessment demonstration case on Abbott Point. Great Barrier Reef and Port Expansions Abbot Point Cumulative Impact Assessment : https://file.ac/ehlqGK_SVm0/. 	Limited	No clear trend

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
			<ul style="list-style-type: none"> Foster, T., Corcoran, E., Erfteimeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94p PGM (2012) Review of Great Barrier Reef Shipping – Environmental Implications (Report for BHP Billiton) 		
CO3 Impacts (direct, indirect and cumulative) associated with ports are understood by managers.	2	<ul style="list-style-type: none"> Port developers, assessment/approval regulators and operating authorities have an effective understanding of the impacts (direct, indirect and cumulative) associated with ports. It is reasonable to consider, however, that GBRMPA does not demonstrate a succinct, clear understanding of the environmental implications of the development and operation of ports, or how these may affect processes and values of the Marine Park and World Heritage Area. Consequently, GBRMPA efforts to manage these effects themselves, or influence the management of these effects by others, is compromised and arguably results in inefficient allocation of available resources. For example, some key issues related to port development and operations not readily apparent in GBRMPA deliberations are related to issues such as status and habitat requirements of inshore dolphins, management of actual (as opposed to perceived) risks from underwater noise, and the possible effects of altered light regimes. There exists a key focus within GBRMPA upon dredging, arguably to the unjustified exclusion of other aspects of port development and operations where GBRMPA could/should be exerting more influence. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. Grech, A., et al. guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. Mar. Pollut. Bull. (2013) Foster, T., Corcoran, E., Erfteimeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94pp Great Barrier Reef Ports Strategy 2012-2022 Ports and Shipping Information paper on GBRMPA website Chapter 5 and 6 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified See also Coastal Zone Strategic Assessment demonstration case on Abbott Point. Improved dredge material management in the Great Barrier Reef Region Abbot Point Cumulative Impact Assessment For statements regarding risks to habitats and species from Ports see the Draft Biodiversity Strategy http://www.gbrmpa.gov.au/about-the-reef/biodiversity/draft-biodiversity-conservation-strategy See World Heritage Committee report (http://whc.unesco.org/archive/2012/whc12-36com-7BAdd-en.pdf) Development proposals can be viewed on the DoE's website at http://www.environment.gov.au/epbc/recentnotices.html. 	Adequate	Improving
CO4 The broader (national and international) level	3	<ul style="list-style-type: none"> These influences appear to be well understood by port 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic 	Adequate	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
influences relevant to ports are understood by managers.		<p>operators and managers.</p> <ul style="list-style-type: none"> The draft of ships is a significant factor limiting navigable waterways, and the worldwide trend towards longer, deeper draft ships affects port access requirements. In order to accommodate deeper draft ships, some ports may require more capital and ongoing maintenance dredging into the future. Larger ships, can however, offer net environmental performance benefits in relation to a greater number of smaller ships moving the same volume of cargo. 	<p>Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning.</p> <ul style="list-style-type: none"> State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Chapter 5 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified Foster, T., Corcoran, E., Erfemeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94pp Grech, A., et al. Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. Mar. Pollut. Bull. (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.07.013 Improved dredge material management in the Great Barrier Reef Region Environmental best practice port development: an analysis of international approaches 		
CO5 The stakeholders relevant to ports are well known by managers.	3	<ul style="list-style-type: none"> Port operators and management authorities have extensive stakeholder engagement processes. It is critical for all Great Barrier Reef managers to recognise that these stakeholders include commodities producers and exporters, and shipping industry representatives, noting that ports are but one node in an extensive supply chain. 	<ul style="list-style-type: none"> Grech, A., et al. Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. Mar. Pollut. Bull. (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.07.013 Foster, T., Corcoran, E., Erfemeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94pp. Ports and Shipping Information paper on GBRMPA website Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ 	Adequate	Stable
PLANNING					
PL1 There is a planning system in place that	3	<ul style="list-style-type: none"> Planning for individual ports has been effective, but coordinated development of the Great Barrier Reef ports has lacked rigour. 	<ul style="list-style-type: none"> http://portsaustralia.com.au/port-master-planning.pdf Draft Queensland Ports Strategy. 	Adequate	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
effectively addresses ports		<p>This is being addressed through the development of the Queensland and Great Barrier Reef Ports Strategies, with the associated statutory port master planning requirements. In relation to the Great Barrier Reef ports, such coordinated planning may be considered to have two core elements, namely:</p> <ul style="list-style-type: none"> ○ optimising use of existing ports to make maximum, efficient use of existing capacity ○ ensuring the development of new, or expansion of existing, ports with Great Barrier Reef Region is done in a coherent manner which seeks to advance the development and operation of regional ports as a whole, instead of as individual components. <ul style="list-style-type: none"> • The effective implementation of these strategies and master planning requirements in a manner where the values of the Marine Park and World Heritage Area which may be affected by ports would benefit from a suitable leadership/guidance role by GBRMPA. • Plans and procedures to minimise the risk of introduction, and the timely detection of and response to, marine pests, are generally deficient. There is a Response Plan for Introduced Pests, but not for surveillance, management and prevention. This is a significant deficiency, as focus should be upon minimising risk of introduction in the first instance, and early detection of incursion in the second instance. Both of these elements are essentially lacking in the context of Great Barrier Reef Region ports. If response is initiated once invasive species is discovered, then often times, there is no effective means of eradicating or containing introduced species. 	<ul style="list-style-type: none"> • draft Great Barrier Reef Ports Strategy (http://www.dsdip.qld.gov.au/gbrportsstrategy) • Coastal Protection State Planning Regulatory Provision 2013, is available online: http://www.dsdip.qld.gov.au/resources/factsheet/planning/coastal-protection-sprp.pdf • Draft State Planning Policy, is available online: http://www.dsdip.qld.gov.au/resources/policy/state-planning/draft-spp.pdf • See also Coastal Zone Strategic Assessment demonstration case on Abbott Point. • Independent Review of the Port of Gladstone - Report on findings • National Assessment Guidelines for Dredging 2009 • MOU signed between Queensland Ports Association and GBRMPA 12/9/2011 • National Ports Strategy 2012 • GBRMPA report on Zoning • DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 		
PL2 The planning system for ports addresses the major factors influencing the Great Barrier Reef Region's values.	3	<ul style="list-style-type: none"> • This is assessed as partially effective, and should be improved by implementation of the Queensland ports strategies and master planning requirements. • While some elements are effectively addressed, GBRMPA seems to lack comprehensive knowledge of applicable aspects of port developments and operations, and hence has a sub-optimal basis from which to influence the development and operation of ports to address the major factors influencing the Great Barrier Reef Region's values. 	<ul style="list-style-type: none"> • Independent Review of the Port of Gladstone - Report on findings • Guidelines developed for use of Hydrodynamic Numerical Modelling for Dredging Projects in the Great Barrier Reef Marine Park • DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Uncertain	Improving
PL3 Actions for implementation regarding	3	<ul style="list-style-type: none"> • It is advised by GBRMPA that comprehensive, clear action 	<ul style="list-style-type: none"> • Independent Review of the Port of Gladstone - Report on Findings 	Uncertain	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
ports are clearly identified within the plan		plans for port development and operation are being developed, but would be improved if GBRMPA articulated a clear plan for its aspirations in relation to ports.	<ul style="list-style-type: none"> • DRAFT Ports Position Paper • Draft Biodiversity Strategy • WQ Protection Plan 2009: http://www.environment.gov.au/coasts/pollution/reef/index.html 		
PL4 Clear, measurable and appropriate objectives for management of ports have been documented	3	<ul style="list-style-type: none"> • The five guiding principles proposed in the (draft) Queensland Great Barrier Reef Ports Strategy are of more relevance and should be those upon which GBRMPA focuses attention. • As 'steward' of the Great Barrier Reef Marine Park and World Heritage Area, GBRMPA does not appear to have articulated any cogent set of clear, measurable and appropriate objectives for the management of ports. 	<ul style="list-style-type: none"> • Foster, T., Corcoran, E., Erftemeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94pp. • DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. • Grech, A., et al. Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. Mar. Pollut. Bull. (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.07.013 	Uncertain	Improving
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to ports	2	<ul style="list-style-type: none"> • Some ports monitoring data are collected and available (for example, number of ship visits, some aspects of water quality, etc.), but there is no apparent coordinated, consistent, cohesive, comprehensive arrangement and reporting of monitoring data for ports, either on an individual port basis and particularly not on a Great Barrier Reef-wide aggregated or comparative basis. Suggested data which should be collected/monitored include, <i>inter alia</i>: <ul style="list-style-type: none"> ○ vessel/marine fauna strikes (for example, dolphins, dugongs, turtles) ○ invasive marine species monitoring, surveillance and incursions ○ cargo losses/spillages during loading/unloading ○ port water and sediment quality, including anchorages ○ port run-off quality. 	<ul style="list-style-type: none"> • Guidelines for the Use of Hydrodynamic Numerical Modelling for ... • See Summary - Dredging at the Port of Hay Point - and the full report by Trimarchi, S. & Keane, J. 2007. Port of Hay Point apron areas and departure path capital dredging project: environmental review, Ports Corporation of Queensland Limited, EcoPorts Monograph Series: 24, Brisbane • DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. • See also Coastal Zone Strategic Assessment demonstration case on Abbott Point. • GHD 2013, Ship anchorage management in the Great Barrier Reef World Heritage Area, Great Barrier Reef Marine Park Authority, Townsville. 	Uncertain	No clear trend
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address ports	3	<ul style="list-style-type: none"> • Engagement of the community on port management issues is mainly through port authorities and Queensland Government. GBRMPA may undertake some project specific engagement through LMACS. 	<ul style="list-style-type: none"> • Foster, T., Corcoran, E., Erftemeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94pp. 	Adequate	Stable

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
			<ul style="list-style-type: none"> Ports and Shipping Information paper on GBRMPA website Ports Australia website http://www.portsaustralia.com.au/port_industry/ Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. r88D of GBRMP Regulations 1983 s98 and 103 of EBPC Act 1999 		
PL7 Sufficient policy currently exists to effectively address ports	2	<ul style="list-style-type: none"> Wider Queensland policy is being developed. Policy for development and operation of ports is reasonable and sufficient, but policy linkages addressing ports and their relationship with Great Barrier Reef Marine Park and World Heritage Area values and processes are minimal. GBRMPA policy is not comprehensive, and GBRMPA seems to have focused most attention on dredging and spoil disposal. For example, no or minimal guidelines or guidance is evident for noise intensive port (development) activities, or invasive marine species/biofouling in relation to port developments and operations. Some policy/guidance gaps are currently being addressed, such as planning for and siting of anchorages. 	<ul style="list-style-type: none"> Great Barrier Reef Ports Strategy 2012-2022 http://www.dsdip.qld.gov.au/infrastructure-and-planning/queensland-ports-strategy.html DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. GBRMPA Ports and shipping information sheet Dredging and spoil disposal in the Marine Park - GBRMPA Guidelines for the Use of Hydrodynamic Numerical Modelling for ... NQBP's Environment Policy (http://www.nqbp.com.au). www.imo.org; http://www.dredgingtoday.com/2013/10/21/ceda-guidelines-for-assessment-of-dredged-material-adopted/ https://www.westerndredging.org/index.php/news/guidelines-for-assessment-of-dredged-material 	Uncertain	Improving
PL8 There is consistency across jurisdictions when planning for ports	2	<ul style="list-style-type: none"> There has been some lack of consistency across jurisdictions, particularly in the context of the linkages between individual ports - this is as much an artefact of the statutory basis and legal framework within which the ports have been established and operate, and may be exacerbated should these ports be privatised. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. Grech, A., et al. Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. Mar. Pollut. Bull. (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.07.013 	Adequate	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		<ul style="list-style-type: none"> Consistency between ports would be improved via implementation of Queensland ports strategies and master planning requirements. Further enhancement could be realised if GBRMPA is able to develop and leverage better guidance for ports from a clearer, more comprehensive knowledge and understanding of port developments and operational activities, and implications for the Marine Park and World Heritage Area. GBRMPA notes 13 guiding principles as proposed in an academic paper (Grech et al. 2013) for the improved governance of port and shipping impacts in the Great Barrier Reef. These 13 guiding principles have no authority or applicability in any statutory sense. Furthermore, these principles relate to processes for planning and assessment, not to objectives for management. The five guiding principles proposed in (draft) Queensland Great Barrier Reef Ports Strategy are of more relevance and should be those upon which GBRMPA focuses attention. 	<ul style="list-style-type: none"> Brodie, J., Waterhouse, J., 2012. A critical review of environmental management of the 'not so Great' Barrier Reef. Estuar. Coast. Shelf Sci. 104–05, 1–22. Refer to fact sheet about the differences between the Marine Park, Region and World Heritage Area 		
PL9 Plans relevant to ports provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	3	<ul style="list-style-type: none"> More robust plans are being developed by a range of agencies. Any GBRMPA input to these plans and 'stewardship' of their outcomes would be enhanced by a coherent policy about how GBRMPA expects ports to be managed in order to safeguard the Marine Park and World Heritage Area values. 	<ul style="list-style-type: none"> Draft Queensland Ports Strategy Draft Great Barrier Reef Ports Strategy (http://www.dsdip.qld.gov.au/gbrportsstrategy) See also the Program Reports DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 GBRMP Zoning Plan 2003 Site Management Plans: http://www.gbrmpa.gov.au/zoning-permits-and-plans/site-specific-management Plans of Management: http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Improving
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management	2	<ul style="list-style-type: none"> Reasonable to assume that resources of the ports themselves and overseeing Queensland Government agencies are 	<ul style="list-style-type: none"> Improved dredge material management in the Great Barrier Reef Region 	Uncertain	No Clear Trend

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
objectives to address ports		<p>adequate.</p> <ul style="list-style-type: none"> Noting lack of comprehensive GBRMPA policies, guidelines and similar, may be assumed that Authority's financial resources are not adequate in this regard. 	<ul style="list-style-type: none"> Ship anchorage management in the Great Barrier Reef World Heritage Area Environmental best practice port development: an analysis of international approaches WAMSI http://www.wamsi.org.au/category/region/research-dredging-science State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 Permit Application Assessment Fees: http://www.gbrmpa.gov.au/zoning-permits-and-plans/permits/permit-application-assessment-fee 		
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address ports	3	<ul style="list-style-type: none"> Reasonable to assume that human resources of the ports themselves and overseeing Queensland Government agencies are adequate. Noting lack of comprehensive GBRMPA policies, guidelines and similar, may be assumed that Authority's human resources are not adequate in this regard. 	<ul style="list-style-type: none"> State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Uncertain	No Clear Trend
IN3 The right skill sets and expertise are currently available to the managing organisations to address ports	3	<ul style="list-style-type: none"> Reasonable to assume that skill sets and expertise of the ports themselves and overseeing Queensland Government agencies are adequate. Evidence to suggest that effective knowledge and understanding of port developments and operations could be improved in both GBRMPA and Commonwealth Department of the Environment. This should improve outcomes for port-related assessment and approvals and monitoring. 		Adequate	No Clear Trend
IN4 The necessary biophysical information is currently available to address ports	2	<ul style="list-style-type: none"> A significant amount of information is available but salient gaps and uncertainties exist. GBRMPA indicates limited information on the impacts of dredge spoil material on critical habitats (for example, coral reefs and seagrass) at appropriate spatial and temporal scales, and that uncertainty exists regarding adequacy of dredge spoil plume modelling. 	<ul style="list-style-type: none"> Improved dredge material management in the Great Barrier Reef Region Environmental best practice port development: an analysis of international approaches 	Adequate	No Clear Trend

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		<ul style="list-style-type: none"> Many other critical knowledge gaps exist. For example, limited information is available on population status and habitat requirements of some key species, such as inshore dolphins. Information of this type will inform and influence decisions regarding elements such as dredging, siting of anchorages, pile driving noise management, etc. No consistent methodologies or procedures exist to collect, collate and analyse vessel/fauna strikes in ports. Introduced marine species surveillance and monitoring is inadequate in relation to agreed national guidelines. 			
IN5 The necessary socio-economic information is currently available to address ports	4	<ul style="list-style-type: none"> Extensive information available regarding economic value of ports, for example, volumes and value of cargoes and commodities, jobs, etc. 	<ul style="list-style-type: none"> Individual ports annual reports for example NQBP Annual Report 2012/13 Various Commonwealth (eg. BREE) and Queensland Government reports 	Adequate	Stable
IN6 The necessary Indigenous heritage information is currently available to address ports	3	<ul style="list-style-type: none"> Possibly applicable to some ports – limited information available and usually gathered and assessed on the basis of specific needs. Assume generally adequate for requirements. 		Uncertain	Stable
IN7 The necessary historic heritage information is currently available to address ports	3	<ul style="list-style-type: none"> Some gaps evident for example wartime relics, but understand information is usually gathered and assessed on the basis of specific needs. Assume generally adequate for requirements. 		Adequate	Stable
IN8 There are additional sources of non-government input (for example volunteers) contributing to address ports	3	<ul style="list-style-type: none"> Assumed to be adequate Port operations involve industrial activity, internationally-mandated security requirements and regimes for strict legal liabilities where safety and security issues limit latitude for extensive involvement of volunteers 	<ul style="list-style-type: none"> Independent Review of the Port of Gladstone - Report on findings Seagrass-Watch 	Uncertain	Stable
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of ports	2	<ul style="list-style-type: none"> Key stakeholders directly involved in the development and operation of ports are considered to be effectively engaged by industry and other regulators but not directly by GBRMPA. It may be asserted that the high level of expressed concern from conservation organisations, the World Heritage 	<ul style="list-style-type: none"> Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Stable

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		<p>Committee and some in the wider community is an indication that these stakeholders are not effectively engaged or could also be an indication of lack of thorough understanding and knowledge of ports and implications for the Great Barrier Reef, and/or 'concerns' over ports being used as leverage to advance other issues or concerns.</p> <ul style="list-style-type: none"> The current status of this criterion suggests latitude for improvement in the collation, assimilation and distribution of information relating to the sustainable operations of Great Barrier Reef ports, and for improved communication with the wider community and interested parties. 	<ul style="list-style-type: none"> See PL5 		
PR2 The local community is effectively engaged in the ongoing management of ports	3	<ul style="list-style-type: none"> In general terms, there is likely to be minimal local community engagement in the management of ports outside of environmental assessment processes. Within this context, community involvement in the management of port issues is, however, likely to be most valuable at the strategic level with regards to the location and siting of port infrastructure rather than the general day to day issues with port management . 	<ul style="list-style-type: none"> Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ 	Uncertain	No Clear Trend
PR3 There is a sound governance system in place to address ports	2	<ul style="list-style-type: none"> The governance system for Great Barrier Reef ports in relation to achieving desired outcomes in relation to the Marine Park and World Heritage Area is somewhat fragmented, particularly in relation to: <ul style="list-style-type: none"> GBRMPA clearly and succinctly articulating what is expected from ports Great Barrier Reef ports, collectively, gathering and presenting empirical evidence to indicate their long-term sustainability or otherwise. Queensland has become the first State to join the Commonwealth's new streamlined environmental approvals regime. The Greentape Reduction project is implementing changes to Queensland's <i>Environmental Protection Act 1994</i> and subordinate legislation. The Greentape Reduction amendments to and subsequent amendments to the Environmental Protection Regulation 2008 commenced in March 2013 and are now in force. Streamlining environmental 	<ul style="list-style-type: none"> Dale, A., Vella, K., Pressey, R., Brodie, J., Yorkston, H., Potts, R., 2013. A method of risk analysis across governance systems: a Great Barrier Reef case study. <i>Environ. Res. Lett.</i> 8, 015037 (16pp). Grech, A., et al. Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. <i>Mar. Pollut. Bull.</i> (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.07.013 Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ 	Uncertain	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		approvals processes may lead to improved outcomes for the environment, if this results in management and assessment effort and resources being focused on where actual risks occur, rather than dealing with perceived or concocted risks and dealing with regulatory inefficiencies and duplication.			
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for ports	2	<ul style="list-style-type: none"> There is no long-term integrated monitoring of the impacts of ports activities, although there is some for seagrass. When conducted, monitoring is often of limited duration and driven by development proposals and approvals conditions, and in different ports different tools and methods are used, baseline and reference data are of variable rigour. In an overall sense, this makes it difficult to collate, assimilate and evaluate data, and by extension to present empirical evidence to indicate the long-term sustainability or otherwise of Great Barrier Reef ports. Such monitoring is also hampered by the apparent absence of comprehensive assessment frameworks and performance targets for ports in relation to protection of the values of the Marine Park and the World Heritage Area. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Uncertain	No Clear Trend
PR5 Appropriate training is available to the managing agencies to address ports	3	<ul style="list-style-type: none"> Reasonable to assume that appropriate training is available to the staff of ports and terminal operators. Understand that some general training of GBRMPA staff is occurring in relation to impact assessment, oil spill response, biosecurity etc., but the relevance and coherence of training specific to improved understanding and oversight of port issues is not clear. 		Uncertain	No Clear Trend
PR6 Management of ports is consistently implemented across the relevant jurisdictions	3	<ul style="list-style-type: none"> Management of port operational activities is assessed as effective across relevant jurisdictions, but GBRMPA contribution could be improved via development and promulgation of coherent and suitably comprehensive policies and targets for ports in relation to identification of potential threats by ports to Great Barrier Reef Marine Park and World Heritage Area values. Management of port development proposals is consistent within the current construct of management responsibilities for regulatory agencies but strategic level overview of new port 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		<p>developments seems to have been ineffective in recent past in addressing community concerns .</p> <ul style="list-style-type: none"> New Queensland ports strategies and master planning guides should allay some of these previous shortcomings. 			
PR7 There are effective processes applied to resolve differing views/ conflicts regarding ports	3	<ul style="list-style-type: none"> There are some effective processes being implemented, for example, GBRMPA strategy on resolving difference by participating in conferences and meetings to improve understanding of GBRMPA objectives and management processes where these are relevant to ports, annual meetings with port authorities and similar. Queensland ports strategies and master planning guidelines should lead to improved conflict avoidance and better conflict resolution. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with ports are appropriately considered.	3	<ul style="list-style-type: none"> Commonwealth and Queensland agencies demonstrate generally adequate consideration of the direct, indirect and cumulative potential impacts of ports. GBRMPA has a robust impact assessment process but considers ports on a project basis outside of any strategic policy that might address potential cumulative, indirect or chronic impacts arising from multiple project proposals. GBRMPA assessment and consideration of port-related issues would benefit from more comprehensive guidelines/targets 	<ul style="list-style-type: none"> Part IV of the State Development and Public Works Organisation Act 1971 outlines the Environmental Impact Statement process. Foster, T., Corcoran, E., Erfemeijer, P., Fletcher, C., Peirs, K., Dolmans, C., Smith, A., Yamamoto, H., Jury, M. 2010. Dredging and Port Construction around Coral Reefs. PIANC Environmental Commission Report No. 108. 94pp. Great Barrier Reef Ports Strategy 2012-2022 http://www.dsdip.qld.gov.au/infrastructure-and-planning/queensland-ports-strategy.html Ports and Shipping Information paper on GBRMPA website Draft Ports Position Statement GBRMPA report on Zoning' DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Improving
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding ports	2	<ul style="list-style-type: none"> Recognised, possibly critical, gaps exist in available research and monitoring data, including, <i>inter alia</i>: <ul style="list-style-type: none"> inshore dolphins introduced marine pests vessel strikes on marine fauna. Lack of coherent and collated monitoring and reporting of biophysical indicators within and between Great Barrier Reef ports. 	<ul style="list-style-type: none"> Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ Gladstone environmental monitoring (http://www.ehp.qld.gov.au/gladstone/index.html) Independent Review of the Port of Gladstone - Report on findings 	Uncertain	No Clear Trend
PR10 The best available socio-economic research	3	<ul style="list-style-type: none"> See also IN5 Information available regarding economic value of ports,for 		Uncertain	Stable

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
and/or monitoring information is applied appropriately to make relevant management decisions regarding ports		<p>example, volumes and value of cargoes and commodities, jobs, etc.</p> <ul style="list-style-type: none"> Not clear how socio-economic information is applied or influences ultimate GBRMPA management decisions about port proposals 			
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding ports	3	<ul style="list-style-type: none"> Uncertain, but it is reasonable to assume information is applied to decision making about infrastructure siting. Less clear about how any information might be applied to operations or other aspects of port activity. 		Uncertain	No Clear Trend
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding ports	3	<ul style="list-style-type: none"> As per PR11 – Uncertain, but it is reasonable to assume information is applied to decision making about infrastructure siting. Less clear about how any information might be applied to operations or other aspects of port activity. 		Uncertain	Stable
PR13 Relevant standards are identified and being met regarding ports	2	<ul style="list-style-type: none"> There is no globally agreed suite of measures or standards for 'best practice' in the context of port development and operation, and to seek such from overseas and apply without appropriate adaptation to Great Barrier Reef ports may be to overlook the merit and opportunity to develop tailored and focused measures for the Great Barrier Reef. There are some aspects of accredited standards particularly in coastal engineering disciplines that are effectively implemented through impact assessment and approval processes. Scope exists for further development of a suite of meaningful policy objectives and performance indicators specific to Great Barrier Reef ports and their interactions with, and potential influences upon, the Marine Park and World Heritage Area. 	<ul style="list-style-type: none"> Improved dredge material management in the Great Barrier Reef Region Environmental best practice port development: an analysis of international approaches Guidelines for the Use of Hydrodynamic Numerical Modelling for ... NQBP's Environment Policy (http://www.nqbp.com.au). 	Adequate	Stable
PR14 Targets have been established to benchmark management performance for ports	2	<ul style="list-style-type: none"> No specific targets are apparent, and these need to be developed. Volume of FOI requests and criticism are a possible indicator of negative management performance - but could equally be an indicator of recent high tempo of port development proposals and activities and/or agenda-driven issues by certain groups and individuals. An example of appropriate target might include rate of 	<ul style="list-style-type: none"> Environmental best practice port development: an analysis of international approaches DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Uncertain	No Clear Trend

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		checking for marine pests of ships using ports.			
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for ports	3	<ul style="list-style-type: none"> It is understood that there is no management program at present, but that this is in development as part of the Strategic Environmental Assessment. As further understood, there is no existing work plan for Ports. Work on the (draft) Queensland ports strategies and master planning frameworks would seem to provide a framework for an ongoing works program. Although formal outputs for ports are sparse, there is no indication to suggest that the activities in ports related to their development and operations have not been managed effectively, or in a manner not consistent with effective management of risks to Marine Park and World Heritage Area values and processes. 	<ul style="list-style-type: none"> GBRMPA and QLD Program Reports DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Uncertain	Improving
OP2 Implementation of management documents and/or programs relevant to ports have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> These are in a developmental stage, so it is assumed that stated timeframes will be met. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Improving
OP3 The results (in OP1 above) have achieved their stated management objectives for ports	2	<ul style="list-style-type: none"> There are no clearly defined management objectives. It is considered that these should be developed by GBRMPA in respect of the protection of the Marine Park and World Heritage Area from port-induced risks. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Uncertain	No Clear Trend
OP4 To date, products or services have been produced in accordance with the stated management objectives for ports	3	<ul style="list-style-type: none"> No comprehensive, clearly articulated or concise stated management objectives for Great Barrier Reef ports Policies and guidelines for dredging and spoil disposal are being applied and are reasonably effective on a case by case basis. Dredge spoil disposal undertaken in the absence of specific strategic objectives for dredging: monitoring rather than managing (for example. land versus sea disposal, volume) Dredging is arguably addressed adequately by GBRMPA, but 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		<p>other aspects of environmental concern/risk related to port developments and port operations require more work by the GBRMPA. To this end it is acknowledged that GBRMPA is progressing a framework for management of anchorages.</p> <ul style="list-style-type: none"> Other Commonwealth and Queensland authorities have initiated a program via the Queensland ports strategies and master planning. 			
OP5 Effective knowledge management systems regarding ports are in place within agencies	2	<ul style="list-style-type: none"> Some but diffuse - located in several different agencies. Assumed to be reasonably effective. 		Uncertain	No Clear Trend
OP6 Effective systems are in place to share knowledge on ports with the community	2	<ul style="list-style-type: none"> Likely to be only relevant through impact assessment processes for specific proposals and individual port annual reporting. No coherent plan or framework for coordinated Reef-wide reporting of the performance of ports. 		Uncertain	No Clear Trend
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing ports and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> There is no evidence to suggest that ports, including their development and operations, are not being effectively managed. It is clearly evident that more coordination between GBRMPA and regulatory agencies and port operators and developers is needed. This has been recognised and is being addressed via port strategies and master planning mechanisms. It is not clear that management of port issues in relation to Great Barrier Reef Marine Park and World Heritage Area has been effective to date, or at least effectively characterised and communicated, given some prevalent community perceptions. However, many issues are outside GBRMPA jurisdiction and pivot on the GBRMPA having an effective role in guiding and influencing the responsible management agencies. 	<ul style="list-style-type: none"> DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Adequate	Improving
OC2 The outputs relating to ports are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> "Port planning and site selection processes undertaken in the past by the Gladstone Ports Corporation and the Queensland Government have not sufficiently addressed the world heritage setting of the port." Independent Review of the Port of 		Adequate	Improving

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
		<p>Gladstone - Report on findings</p> <ul style="list-style-type: none"> Many of the values that exist within ports have been maintained; although some remain threatened, but there is minimal to indicate or suggest that many of these positive outcomes have been the result of incisive leadership or guidance by GBRMPA, with the possible exception of issues related to dredging. A clear management plan has not yet been developed specifically for port issues by GBRMPA but there is recognition that such a plan is necessary. 			
OC3 the outputs (refer OP1 and 3) for ports are reducing the major risks and the threats to the Great Barrier Reef	3	<ul style="list-style-type: none"> See comment in OC2 – steps for managing risks to the Great Barrier Reef from Port activities need to be clearly articulated. 		Adequate	Improving
OC4 Use of the Great Barrier Reef relating to ports is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> Lack of sufficient background data and monitoring information preclude robust or definitive assessment or conclusion. Often only anecdotal evidence is available, although this suggests that any effects are localised, and hence likely to be sustainable, at current levels of port activity, in the context of the Great Barrier Reef Region. Forecast increases in the size and volume of operations at Great Barrier Reef ports only reinforces the need to improve baseline knowledge and data monitoring and analyses, and improve the coordination in the synthesis and dissemination of this information. 	<ul style="list-style-type: none"> State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 Chapter 5, 6 and 7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified Ecologically sustainable development of ports and shipping Gladstone Healthy Harbour Partnership http://www.ehp.qld.gov.au/gladstone/healthy-harbour/ Gladstone environmental monitoring (http://www.ehp.qld.gov.au/gladstone/index.html) Independent Review of the Port of Gladstone - Report on findings DSDIP (2013). Great Barrier Reef Coastal Zone Strategic Assessment: Program Report - Draft for Consultation. Queensland Department of State Development, Infrastructure and Planning. 	Uncertain	No Clear Trend
OC5 Use of the Great Barrier Reef relating to ports is demonstrably economically sustainable	4	<ul style="list-style-type: none"> Significant data are available regarding the economic value of Great Barrier Reef ports, so answer would presumably be 'yes' though the long-term viability can never be completely certain. 	<ul style="list-style-type: none"> State of Queensland (2012). Great Barrier Reef Ports Strategy: Economic Analysis, October 2012. 	Adequate	Stable
OC6 Use of the Great Barrier Reef relating to ports is demonstrably	3	<ul style="list-style-type: none"> The Great Barrier Reef ports sustain a significant number of communities in the Queensland east coast area and interior. 		Adequate	Stable

Component of management of ports	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
socially sustainable enhancing understanding and/or enjoyment		<ul style="list-style-type: none"> There remains a degree of community unease about port development (in particular) that has to be addressed through improved community engagement and understanding. 			
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address ports	3	<ul style="list-style-type: none"> Considering the jurisdictional management arrangements for ports in relation to GBRMPA powers and responsibilities, the need or merit of GBRMPA becoming involved in community engagement in relation to port operations and developments is worth considering, when this is something that is arguably more appropriately undertaken by the ports themselves. GBRMPA's main role here is likely at the strategic level rather than day-to-day port operational management issues. 	<ul style="list-style-type: none"> Grech, A., et al. Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. Mar. Pollut. Bull. (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.07.013 Consultation reports from strategic assessment, including LMAC Chairs Meeting, October 2012. 	Adequate	Improving

Table 26 Calculation of grades for recreational use (excluding fishing)

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to recreational use are understood by managers	4	<ul style="list-style-type: none"> Recreation Management Strategy document outlines the values of the Great Barrier Reef that are to be considered 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
CO2 The current condition and trend of values relevant to recreational use are known by managers	3	<ul style="list-style-type: none"> Condition and trend of recreational use are identified the Recreation Management Strategy and summarised in the Strategic Assessment Risks associated with recreation and their trends are identified in the Recreation Management Strategy The Authority has knowledge about the change in vessel registration, but doesn't yet know the extent of the flow on impacts (e.g what effect the increase in recreational vessels will have cumulatively on the Marine Park) 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
CO3 Impacts (direct, indirect and cumulative) associated with recreational use are understood by managers.	4	<ul style="list-style-type: none"> The impacts of recreation are articulated in the Recreation Management Strategy and are summarised in the Strategic Assessment The increasing number of people living close to the Great Barrier Reef means increasing recreational use of the marine area. Boat ownership is increasing steadily within the catchment. This has driven an increased demand for boating facilities such as marinas, moorings and boat ramps, often located within the Great Barrier Reef World Heritage Area or adjacent coastal habitats 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapter 5 Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
CO4 The broader (national and international) level influences relevant to recreational use are understood by managers.	4	<ul style="list-style-type: none"> National and international influences relevant to recreation include environmental issues (sea level rise, ocean acidification, more frequent extreme weather and warming sea temperatures), demographic changes associated with the resources boom, population growth along the coastal areas adjacent to the Reef; 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>and changes to vessels and numbers.</p> <ul style="list-style-type: none"> With regard to direct use of the Region, it is likely the trend of increasing recreational vessel ownership will continue in the catchment. This is predicted to include faster growth in vessel numbers in the more southern parts of the catchment. The trend towards people owning larger, better equipped vessels increases the potential for recreational users to access the outer reefs of the Region. Changing vessel and navigational technology is likely to change the spatial patterns of recreational use, including allowing vessels to travel further offshore and better focus their use on preferred locations. 	<p>marine-park</p>		
CO5 The stakeholders relevant to recreational use are well known by managers.	4	<ul style="list-style-type: none"> Recreation stakeholders are not as easily identifiable as industry stakeholders. Sections, such as fishing, sailing and dive clubs, are known but not necessarily accessed. The GBRMPA regularly interacts with recreation stakeholders through its four Reef Advisory Committees, particularly the one dedicated to Tourism and Recreation, which includes representatives from the recreation sector, and through its 12 Local Marine Advisory Committees (LMACs). A new LMAC has been established created in Mackay, an increasingly popular holiday destination. Recreational users also interact with managers through feedback provided during consultation processes, incident reporting and Sightings Network submissions. Extensive ongoing engagement with industry (tourism and recreation) Regional Offices (GBRMPA CPG) 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable
PLANNING					
PL1 There is a planning system in place that effectively addresses recreational use	4	<ul style="list-style-type: none"> The Recreational Management Strategy was developed in response to concerns raised in the management effectiveness evaluation conducted as part of the Outlook Report 2009 that there was no overall strategy for managing recreation, a lack of coordination between managing agencies as well as a lack of targeted management objectives to properly assess effectiveness. The Recreation Management Strategy is designed to provide an overarching framework for the management of recreation by the 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-parkA Statement of Management Arrangements in the Great Barrier Reef Marine Park for Superyacht Operations: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0017/3392/GBRMPA-ManagementArrangements-SuperyachtsMay-2011.pdf 	Adequate	Stable

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>GBRMPA, to facilitate more coordinated management and to set out in the public arena the management approach of the GBRMPA</p> <ul style="list-style-type: none"> The Recreation Management Strategy consolidates the management arrangements of the GBRMPA, with a strong emphasis on maintaining, applying and enhancing the suite of management tools that can be applied to emerging recreation issues. The Statement of Management Arrangements in the Great Barrier Reef Marine Park for Superyacht Operations summarises the current management arrangements for superyachts. Responsible Reef Practices provide best practice guidelines for a range of recreational activities on the Reef including anchoring and mooring, bird watching, motorised water sports, visiting islands and cays and boating and yachting 	<ul style="list-style-type: none"> Responsible Reef Practices: http://www.gbrmpa.gov.au/visit-the-reef/responsible-reef-practicesbarrier-reef-marine-park 		
PL2 The planning system for recreational use addresses the major factors influencing the Great Barrier Reef Region's values.	4	<ul style="list-style-type: none"> The Recreation Management Strategy identifies and addresses the major pressures and drivers impacting on the Reef. Plans of Management have not been updated for some years and site management arrangements are not planned for the Southern Great Barrier Reef, where increasing population trends are occurring. The planning system needs to address these issues. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable
PL3 Actions for implementation regarding recreational use are clearly identified within the plan	3	<ul style="list-style-type: none"> The Recreation Management Strategy identifies and addresses the major pressures and drivers impacting on the Reef. Plans of Management have not been updated for some years and site management arrangements are not planned for the Southern GBR, where increasing population trends are occurring. The planning system needs to address these issues. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable
PL4 Clear, measurable and appropriate objectives for management of recreational use have been documented	3	<ul style="list-style-type: none"> The Recreation Management Strategy defines three objectives for the management of recreation: <ul style="list-style-type: none"> A range of recreational opportunities is provided for. The major potential threats associated with recreation are minimised. Other managing agencies and the community are working with the GBRMPA to manage recreational use and the factors that affect it. However, the objectives have no measures associated with them 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable
PL5 There are plans and systems in place to ensure	2	<ul style="list-style-type: none"> The social and economic long-term monitoring program (SELTMP) is monitoring recreational use. 	<ul style="list-style-type: none"> SELTMP http://www.nerptropical.edu.au/search?search=SELT 	Adequate	Stable

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
appropriate and adequate monitoring information is gathered in relation to recreational use			MP&=Search		
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address recreational use	4	<ul style="list-style-type: none"> The Tourism and Recreation Reef Advisory Committee (TRRAC) is regularly consulted as part of the recreation planning for the Reef and includes representatives of Marine Park recreation. Recreation representatives are also included in the 12 LMACs and participate in recreation planning. Community Access points High level of engagement for legislative changes (Regulations, Zoning Plans, Plans of Management) with formal submissions received High level of local community engagement in planning processes for site plans and potential for any policy development. Avenues to engage local community through representation in Local Marine Advisory Committees (LMACs), regional based staff and Community Access Points (CAPs) The development of regional plans and local government planning schemes includes statutory consultation requirements to engage stakeholders and the local community. Submissions regarding these plans must be considered prior to finalisation. 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/about-us/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee http://www.gbrmpa.gov.au/about-us/local-marine-advisory-committees 	Adequate	Stable
PL7 Sufficient policy currently exists to effectively address recreational use	3	<ul style="list-style-type: none"> Overarching strategy (Recreational Management Strategy) now exists, and a number of policies have been identified that are relevant to recreational use. These policies are identified in the overarching strategy but are not specific to manage recreational use in developing hotspots. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Stable
PL8 There is consistency across jurisdictions when planning for recreational use	3	<ul style="list-style-type: none"> The Recreation Management Strategy identifies that “many agencies play a significant role in managing recreation in the Marine Park” (see Appendix 2, page 35). Collaborating with other agencies to ensure management of recreation in the Marine Park is coordinated and consistently applied is one of the key management components identified in the RMS. The GBRMPA and the Queensland Government have a long history of collaboration to ensure consistency particularly to deliver their field management program, which ensures compliance with management tools that are highly relevant to recreation such as Plans of Management. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Stable

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Building better collaborative arrangements with other government agencies, and improving in-park management arrangements, especially cooperation and coordination, is identified as one of the management approach most likely to effectively address the remaining risks associated with recreation now and into the future. 			
PL9 Plans relevant to recreational use provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	2	<ul style="list-style-type: none"> Zoning plans, planning areas, and site planning identify where use may occur. For superyachts this information has been collated into a management arrangements document specific to them. Local government planning schemes identify areas where development may and may not occur, or occur under certain circumstances. The development applications are assessed according to intent for the area/zone, codes of assessment relevant to the area/zone and, if submissions have been made about the proposed development, the issues raised in the submissions. Development applications may have conditions applied by the assessment manager (or concurrence agency if relevant) which have to be met by the applicant before proceeding. 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/zoning-permits-and-plans/zoning http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address recreational use	2	<ul style="list-style-type: none"> The GBRMPA's Strategic Plan 2012-2016 identifies recreation and one of its objectives is to implement the research and communication components of the RMS and to collaborate with reef users to implement best practice approaches to ensure sustainable use of the Reef so these will be funded accordingly. Funding concentrates mainly on recreational research (draft Analysis of Recreational vessel registrations), stewardship programs and education (TV ads, Community Access points, etc.) but less on site planning and recreation-specific policy development, as per management objectives. A stronger management focus has been allocated to recreation especially with the development of the RMS, however, the overall budget for managing tourism and recreation remains the same, and of this budget, limited resources are allocated specifically for Recreation even though it is a growing activity. The current Compliance and Field Management Program is operating at capacities set in the 1990s, when Reef usage and 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park Analysis of Recreational Vessel registrations (DRAFT) GBRMPA Strategic Plan 2012-2016 http://www.gbrmpa.gov.au/data/assets/pdf_file/0014/3281/gbrmpa-Strategic-Plan-2012.pdf 	Adequate	Stable

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
		pressures were lower and prior to the seven-fold expansion of the area of highly protected zones and the emergence of climate change as a dominant threatening process.			
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address recreational use	2	<ul style="list-style-type: none"> Corresponding to the financial resources, there are limited human resources directly assigned to recreation (including within the Tourism and Recreation section) resulting in only some aspects of key management components identified in the RMS likely to be implemented by 2016. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address recreational use	3	<ul style="list-style-type: none"> There are in-house skills and expertise, principally built from corporate knowledge, that can potentially be used to address recreation. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address recreational use	3	<ul style="list-style-type: none"> Information contained in the <i>Great Barrier Reef Biodiversity Conservation Strategy</i> and the Strategic Assessment can be used to inform management actions for recreation. The technical report entitled: <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> includes information on the current status of the catchment and the threats it faces which can be useful to address recreation. 	<ul style="list-style-type: none"> Draft Great Barrier Reef Biodiversity Conservation Strategy http://www.gbrmpa.gov.au/data/assets/pdf_file/0020/21728/gbrmpa-BioStrategy-DRAFT-Aug-2012.pdf Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/data/assets/pdf_file/0006/28257/Informing-the-Outlook-for-Great-Barrier-Reef-coastal-ecosystems.pdf 	Adequate	Improving
IN5 The necessary socio-economic information is currently available to address recreational use	3	<ul style="list-style-type: none"> Socio-economic information is used to assist in the development of the Recreational Management Strategy. Further studies such as Stoeckl et al will provide further socio-economic data useful to recreation. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Socio-economic systems and reef resilience NERP 	Adequate	Improving
IN6 The necessary Indigenous heritage information is currently available to address recreational use	2	<ul style="list-style-type: none"> The Recreation Management Strategy clearly identified the need to improve Traditional Owner engagement and knowledge, but it does not indicate if this has occurred 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
IN7 The necessary historic heritage information is currently available to address recreational use	2	<ul style="list-style-type: none"> There appears to be no information on this, and is an acknowledged gap. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Limited	Uncertain
IN8 There are additional sources of non-government input (for example volunteers) contributing to address recreational use	4	<ul style="list-style-type: none"> Extensive programs in place 	<ul style="list-style-type: none"> TRRAC, LMACs, community associations Order of Underwater Coral Heroes - (OUCH) for example monitoring corals, foreshore mangroves, maintenance of moorings http://www.landcareonline.com/case_study.asp?cid=32 Low Isles Preservation Society - conservation group http://www.lips.org.au/ Reef Guardian Schools - http://www.reefed.edu.au/home/guardians/reef_guardian_schools Seagrass-Watch - monitoring program collecting data about near-shore seagrasses http://www.seagrasswatch.org/home.html ReefCheck - coral monitoring group http://www.reefcheckaustralia.org/ 	Adequate	Stable
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of recreational use	3	<ul style="list-style-type: none"> The Tourism and Recreation Reef Advisory Committee (TRAAC) is regularly consulted as part of the recreation planning for the Reef and includes representatives of Marine Park recreation. Recreation representatives are also included in the 12 LMACs and participate in the ongoing management of recreation. The GBRMPA's staff in Regional offices (Cairns, Mackay, Rockhampton) interact with recreations users particularly through Community Access Points (CAPs). Stakeholders can also provide input during public consultation processes relevant to them (for example, RMS development, site management arrangements, Plans of Management amendments) While recreation stakeholders groups are broadly known there are no direct links to these groups, especially where they originate from outside Queensland (for example cruising yachties and grey 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/about-us/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Improving

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
		nomads) therefore making engagement in management difficult.			
PR2 The local community is effectively engaged in the ongoing management of recreational use	3	<ul style="list-style-type: none"> The local community is engaged through mechanisms outlined above. 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/about-us/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Improving
PR3 There is a sound governance system in place to address recreational use	4	<ul style="list-style-type: none"> The Recreation Management Strategy provides a framework to improve the recreation governance system. 'Working with others' is one of the four management strategies identified in the RMS (see p. 3). 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for recreational use	2	<ul style="list-style-type: none"> No specific performance monitoring with no KPI for in the RMS 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	No clear trend
PR5 Appropriate training is available to the managing agencies to address recreational use	3	<ul style="list-style-type: none"> Training is conducted as part of the Field Management Program. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Stable
PR6 Management of recreational use is consistently implemented across the relevant jurisdictions	4	<ul style="list-style-type: none"> Coordination between relevant agencies (GBRMPA, QPWS, MSQ, Australian Water Police) to enforce Marine Park Acts, Regulations, Zoning Plans and Plans of Management is high although compliance of recreational use has an overall low priority. Queensland manages use of the Great Barrier Reef Coast Marine Park and the GBRMPA manages use of the Great Barrier Reef Marine Park in the Region. The Joint Field Management Program provides management and compliance relevant to recreation, including recreation on islands in the Region. Some products and services jointly prepared/presented (for example, maps, brochures) Some data sharing across jurisdictions (for example, vessel 	<ul style="list-style-type: none"> FMP reports GBRMPA Management Effectiveness workshop 	Adequate	Improving

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
		registration)			
PR7 There are effective processes applied to resolve differing views/ conflicts regarding recreational use	3	<ul style="list-style-type: none"> Regular interaction with recreational stakeholders through TRRAC, LMACs and regional offices staff, as well as public consultation processes and communication campaigns, help minimise conflicts and misunderstandings. However, as some recreation stakeholders groups are only broadly known (for example cruising yachties and grey nomads) identification and resolution of the range of conflicts is not currently considered. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Improving
PR8 Impacts (direct, indirect and cumulative) of activities associated with recreational use are appropriately considered.	3	<ul style="list-style-type: none"> Clearly articulated in Recreation Management Strategy, but little evidence of implementation 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding recreational use	3	<ul style="list-style-type: none"> The Recreation Management Strategy was based on latest biophysical research and monitoring information relevant to recreation. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding recreational use	3	<ul style="list-style-type: none"> The Recreation Management Strategy was based on the latest socio-economic research and monitoring information relevant to recreation available at the time. Deloitte Access Economics recently estimated the economic contribution of Reef-related recreation to the national economy. Regular monitoring of this economic contribution will help managers' respond appropriately to changes in recreational use, and enable the GBRMPA to promote the importance of a healthy Reef ecosystem for recreation. The socio-economic long-term monitoring program (SELTMP) is being implemented through the NERP - (Project 10.1.). Results of this project, together with results from NERP Project 10.2, and results from a new visitor survey installed in Reef HQ will enable managers to understand people's values and perceptions in relation to recreation. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park Deloitte Access Economics (2013) Economic Contribution of the Great Barrier Reef, Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	Improving
PR11 The best available Indigenous heritage	2	<ul style="list-style-type: none"> Identified, but limited access and processes in place to incorporate this knowledge 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	Improving

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
information is applied appropriately to make relevant management decisions regarding recreational use					
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding recreational use	3	<ul style="list-style-type: none"> The Strategic Assessment articulates the issues associated with historic heritage, so this information should be available to assist decision makers. 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment 	Adequate	Improving
PR13 Relevant standards are identified and being met regarding recreational use	3	<ul style="list-style-type: none"> Whale watching guidelines (national). These are compulsory. OH&S standards Vessel standards (MSQ) Voluntary best practice standards (Responsible Reef Practices) it is not known if all relevant standards are identified and being met for new user groups 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/visit-the-reef/responsible-reef-practices http://www.environment.gov.au/coasts/publications/w-hale-watching-guidelines-2005.html 	Adequate	Improving
PR14 Targets have been established to benchmark management performance for recreational use	1	<ul style="list-style-type: none"> Benchmarks have not been established 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness workshop 	Adequate	No clear trend
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for recreational use	3	<ul style="list-style-type: none"> Recreation Management Strategy has been delivered Update of Plans of Management is still to occur. This will address the use and demand on different areas (especially in the Southern Great Barrier Reef) that is increasing. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to recreational use have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> The Recreation Management Strategy does not include specific timeframes for implementation of the key management components listed. One of the deliverables for 2012-2013 identified in the GBRMPA's Strategic Plan 2012-2016 is to "implement the research and communication components of the Recreation Management Strategy" (deliverable 2.8). This is being progressed. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
OP3 The results (in OP1 above) have achieved their stated management objectives for recreational use	3	<ul style="list-style-type: none"> The finalisation of the Recreation Management Strategy is in accordance with the annual deliverable stated in the 2011-2012 Agency AOP 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
OP4 To date, products or services have been produced in accordance with the stated management objectives for recreational use	3	<ul style="list-style-type: none"> The finalisation of the Recreation Management Strategy is in accordance with the annual deliverable stated in the 2011-2012 Agency AOP Other products and services not necessarily stated in Agency AOP include the SeaRead edition on 'Recreation' May-June 2012 edition and webpages dedicated to recreation users visiting Cairns and Whitsunday Planning Areas The Field Management Program maintains a visitor facilities asset base for public moorings, reef protection markers, island campgrounds, etc). Maintenance of visitor facilities is carried out but the capital funding requirements for new or replacement visitor facilities and cultural heritage protection have not been accommodated within the current five year Business Strategy which focuses on vessel fleet replacement. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
OP5 Effective knowledge management systems regarding recreational use are in place within agencies	3	<ul style="list-style-type: none"> The development of the RMS has inherently increased the knowledge base of GBRMPA staff on recreation, particularly those involved in the development of the strategy. Combined with communications efforts such as the SeaRead Recreation supplement, general knowledge on recreation has significantly increased since 2008. 	<ul style="list-style-type: none"> RMS Analysis of Recreational Vessel registrations (DRAFT) SeaRead – Recreation Supplement (see CO5) 	Adequate	Improving
OP6 Effective systems are in place to share knowledge on recreational use with the community	3	<ul style="list-style-type: none"> The release of the RMS has been an opportunity to communicate widely about recreation in the Great Barrier Reef: media release, Facebook posts, etc. leading to an increased knowledge of recreation amongst the wider community. The GBRMPA Newsletter, SeaRead, had a special 'Recreation Supplement in its May-June 2012 edition. 	<ul style="list-style-type: none"> Media release on the launch of the RMS (29 March 2012) http://www.gbrmpa.gov.au/media-room/latest-news/tourism/2012/reef-recreation-strategy-as-coast-population-grows Analysis of Recreational Vessel registrations (DRAFT) Webpages providing detailed guidance to recreational users visiting Cairns and Whitsundays Planning areas (seePR2) 	Adequate	Improving
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing recreational use and moving towards the attainment of the	3	<ul style="list-style-type: none"> The implementation of the Recreation Management Strategy will ensure progress towards attainment of outcomes identified in the document 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving

Component of management of recreational use (excluding fishing)	Rating	Justification	Evidence/sources	Confidence	Trend
desired outcomes.					
OC2 The outputs relating to recreational use are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> The main output has been the Recreation Management Strategy A Communication Plan has been drafted but due to resourcing and priorities such as the Strategic Assessment has not been implemented. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
OC3 the outputs (refer OP1 and 3) for recreational use are reducing the major risks and the threats to the Great Barrier Reef	3	<ul style="list-style-type: none"> Issues are identified, but need action plans for addressing the risks. The Recreation Management Strategy emphasises the risk-based approach adopted by the GBRMPA and identifies the major risks and threats associated with recreation (see table 1, p. 2), assesses these risks (table 8, p. 21) and identifies avenues to reduce those risks (p.23). 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to recreational use is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> The implementation of the Recreation Management Strategy will improve the environmental sustainability, but it is not shown as yet. 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
OC5 Use of the Great Barrier Reef relating to recreational use is demonstrably economically sustainable	3	<ul style="list-style-type: none"> The value of recreation use continues to be higher than that of commercial fishing. 	<ul style="list-style-type: none"> Deloitte Access Economics (2013) Economic Contribution of the Great Barrier Reef ,Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	Improving
OC6 Use of the Great Barrier Reef relating to recreational use is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> Improved distribution of information to recreational users on management arrangements (for example, TV community announcements, boat shows, publications) Greater understanding of threats 85 per cent of Queensland residents satisfied with most recent trip in the Marine Park 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 	Adequate	Improving
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address recreational use	3	<ul style="list-style-type: none"> Partnerships are maintained in various ways including through TRRAC and LMACs but also via specific partnership programs. Effective partnerships still need to be developed for recreation stakeholders groups that are not well known (for example cruising yachties and grey nomads). 	<ul style="list-style-type: none"> Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park http://www.gbrmpa.gov.au/about-us/reef-advisory-committee/tourism-and-recreation-reef-advisory-committee 	Adequate	Improving

Table 27 Calculation of grades for research activities

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to research are understood by managers	4	<ul style="list-style-type: none"> The importance of research to better understand the MNES and inform management to protect the underpinning values is well understood by managers. Most research has focused on coral reefs and high profile species (for example, protected, threatened, and commercially important). There is some increase in focus on the social/economic drivers of various activities associated with the Great Barrier Reef and this is now a growing area of research, most of which takes places outside the Marine Parl and hence outside the management arrangements described here. Climate change effects on marine environments may change the focus of research conducted on the Great Barrier Reef. If the Great Barrier Reef becomes one of the last coral reef ecosystems in relatively good condition, it might have increased value for research as scientists trial acceptable methods for adaptation or mitigation of climate change impacts. Modelling is being sought and used by management agencies to begin to systematically understand the effects of cumulative impacts at a range of spatial scales in the Great Barrier Reef Region (see. Sustainable Regional Development Program project report) 	<ul style="list-style-type: none"> Draft Great Barrier Reef Strategic Assessment Report Chapter 3.6, 3.7, 3.8, 4.3.4, 5.4.8 Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf 	adequate	stable
CO2 The current condition and trend of values relevant to research are known by managers	4	<ul style="list-style-type: none"> There is a strong history of research programs which inform and help improve management of the Region. Research is needed to build a more complete, dynamic understanding of cumulative impacts to guide future management actions to support the resilience of the Reef. The GBRMPA's Scientific Information Needs 2009-2014 aims to facilitate discussion between scientists and Marine Park managers about scientific projects that will help inform Marine Park management, especially high priorities. It guides the research priorities for the agency. SELMTP will provide means to track research knowledge relating to social and economic aspects of management. 	<ul style="list-style-type: none"> Draft Great Barrier Reef Strategic Assessment Report, especially chapters 4-7 Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf eReefs - http://www.bom.gov.au/environment/activities/coastal-info.shtml 	adequate	improving

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • The five-year eReefs project being implemented by the Bureau of Meteorology commenced in January 2012 to provide tools for decision making and communication spanning the entire Great Barrier Reef spectrum – from catchment to ocean – across space and time. It will develop four main packages to assist research and management: <ul style="list-style-type: none"> ○ enhancing monitoring efforts ○ interoperable data and information systems ○ operational catchment and marine modelling ○ reporting and visualisation framework. 			
CO3 Impacts (direct, indirect and cumulative) associated with research are understood by managers.	3	<ul style="list-style-type: none"> • The majority of research (and therefore any impacts of research) occurs at the four major research stations located at: Lizard Island, Orpheus Island, One Tree Island and Heron Island with diffuse research conducted at other locations. The concentration of research activities, such as sampling, around research stations, has the potential to contribute to local depletion of some species and some minor, localised impacts on habitats. • Cumulative impacts around scientific research stations – from cumulative collections are little understood and not managed well. Some research stations collect information on what is taken by each researcher, but this is not sourced and used by the GBRMPA. However, given the scale of activities, overall impacts are likely to have only localised effects. • There is limited compliance auditing around research permits and data provided on what is collected and from where are not analysed or used by GBRMPA in future decision making. Cumulative impact is not considered when assessing research applications. • Researchers must submit to the GBRMPA a species collection form at the cessation of their permit which is usually after a three-year period – the standard duration of a research permit (not every year – therefore there can be a three-year lag in getting this information). 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Report Chapter 5.4.8 	adequate	stable
CO4 The broader (national and international) level influences relevant to research are understood by managers.	4	<ul style="list-style-type: none"> • International and national concern about condition and trends of values in the Reef, climate change and its impacts on marine and coastal ecosystems and related matters has been driving a significant increase in research activity in the Reef, especially is applied research relevant to policy and management responses. • The National Environmental Research Program (NERP) funds 	<ul style="list-style-type: none"> • NERP - http://www.environment.gov.au/topics/science-and-research/national-environmental-research-program • Draft Great Barrier Reef and Coastal Strategic Assessment Reports 	adequate	improving

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>environmental research to support decision making. The NERP Marine Biodiversity and Tropical Ecosystems Hubs address issues of concern for the management, conservation and sustainable use of the Great Barrier Reef and its catchments.</p> <ul style="list-style-type: none"> • Link between research and on-going monitoring has strengthened as has concern for understanding and addressing cumulative impacts. • Concerns over the condition of the Great Barrier Reef and Australia's responsibilities under the World Heritage Convention and EPBC Act have led to a greater research, monitoring and educational focus on MNES and the information needed to support management of MNES. • Increasing attention to social and economic aspects of environmental management reflected in development of the SELMTP • 			
CO5 The stakeholders relevant to research are well known by managers.	4	<ul style="list-style-type: none"> • Collaborative programs with many scientific institutions under MoUs and joint programs (for example CSIRO and GBRMPA), Queensland Government agencies, etc. • Eight scientific institutions that are accredited to undertake limited impact research in the Marine Park without the need for a permit. • There is a good understanding of other permitting requirements for researchers accessing the Great Barrier Reef (for example. EHP, NPRSR, DAFF, DoE requirements). • Increasing collaboration with Traditional Owners, industry groups, general community in relation to monitoring in the Reef • Very high level of collaboration between individual management agency staff and relevant researchers through joint workshops, programs, steering committees, etc. 	<ul style="list-style-type: none"> • Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf • MoU and agreements with CSIRO, Universities • Research station environmental management plans 	adequate	stable
PLANNING					
PL1 There is a planning system in place that effectively addresses research	3	<ul style="list-style-type: none"> • Science information needs document developed, informed by results of Outlook Report 2009 Report provides a more structured approach to identifying and planning for research. • While GBRMPA has an extensive program of collaboration and planning with research institutions and a clear explanation of research and information needs, there is less clarity around the planning for management of research and needs in this area in 	<ul style="list-style-type: none"> • Reef Permits System data base. • Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf • MoU and agreements with CSIRO, Universities • Research station environmental management plans 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>relation to policy development and research activity management.</p> <ul style="list-style-type: none"> • Collaborative arrangements in place with major research institutions and programs such as NERP – provides basis for research planning • Best environmental practices and standards form part of the Memorandum of Understanding (MOU) between the GBRMPA and accredited educational and research institutions: The University of Queensland; The Australian Museum; The Queensland Museum; Central Queensland University; The University of Sydney; The University of Technology, Sydney ; The Department of Agriculture, Fisheries and Forestry ; and, James Cook University. • All research activities must abide by guidelines set out in any approved Environmental Management Plans designed by research stations within the Marine Park, for the Scientific Research Zones around the specific research station. (for example, Orpheus Island Research Station EMP) However, not all research stations have an EMP and feedback from the stations is that they struggle to enforce it with researchers. Additionally, mini “no take zones” put in place by research stations many years ago have not been moved around to build pockets of resilience in heavily targeted areas. 			
<p>PL2 The planning system for research addresses the major factors influencing the Great Barrier Reef Region’s values.</p>	4	<ul style="list-style-type: none"> • Research planning is tightly focused on the major factors impacting on the Reef’s values such as land-based run-off, climate change, cumulative impacts, etc. • Educational programs such as Reef Guardian Schools, Reef HQ programs also focus on key impacts and drivers affecting the Reef. 	<ul style="list-style-type: none"> • 2013 Scientific Consensus Statement • Marine Monitoring Plan • Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf • GBRMPA/CSIRO research MoU 	adequate	improving
<p>PL3 Actions for implementation regarding research are clearly identified within the plan</p>	3	<ul style="list-style-type: none"> • Science information needs document developed, informed by results of Outlook Report 2009 Report provides a more structured approach to identifying and planning for research. • While GBRMPA has an extensive program of collaboration and planning with research institutions and a clear explanation of research and information needs, there is less clarity around the planning for management of research and needs in this area in relation to policy development and research activity management and therefore less direction in terms of research management actions that need to be implemented. 	<ul style="list-style-type: none"> • Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf • GBRMPA/CSIRO research MoU 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
PL4 Clear, measurable and appropriate objectives for management of research have been documented	3	<ul style="list-style-type: none"> The absence of specific plans for management of research mean that objectives are addressed in broader Great Barrier Reef strategies and plans. Research objectives relating to desired outcomes from research programs are more clearly expressed in specific research programs and agreements such as within the Climate Change Action Plan. The basic objective of the Zoning Plan is that all researchers in the Marine Park hold and comply with a permit or Letter of Authority. The Authority has limited capacity to monitor compliance with permits. The draft Biodiversity Conservation Strategy provides direction for research and improvements in knowledge to assist biodiversity protection. Researchers acting under permit and accreditation must provide a collection report to the GBRMPA and remove all equipment at the cessation of their permit/study. However there are limited compliance checks and data is only stored on hard copy files. Annual reports from institutions are also required under the accreditation MOU but there is limited compliance with this requirement. 	<ul style="list-style-type: none"> Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf Great Barrier Reef Climate Change Action Plan 2007 - 2012 (http://hdl.handle.net/11017/198) Great Barrier Reef Climate Adaptation Research Program 	adequate	stable
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to research	2	<ul style="list-style-type: none"> There is limited monitoring of research beyond basic information on the number of research permits issued, research topics and locations. Little evidence that the data collected in the permits database is used to actively manage research and associated knowledge management activity. There is no plan or system for compliance monitoring in relation to management of research. 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	limited	stable
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address research	4	<ul style="list-style-type: none"> Science information needs document aims to facilitate discussion between scientists and Marine Park managers about scientific projects that will help inform Marine Park management, especially high priorities. Collaborative planning of major research efforts with CSIRO, AIMS, universities and other research institutions For some research projects, scientists are encouraged to engage LMACs and/or develop communication strategies to explain their studies to the broader community. 	<ul style="list-style-type: none"> Draft Great Barrier Reef Strategic Assessment Report Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf MoU and agreements with CSIRO, Universities 	adequate	improving

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
PL7 Sufficient policy currently exists to effectively address research	3	<ul style="list-style-type: none"> Policy on Managing Scientific Research in the Great Barrier Reef (2004) underpins research but has not been reviewed in the last 10 years. Best Practice Guidelines for research are limited (and many relate more to general visitation) and primary reliance is put on policies and ethical requirements of research institutions. 	<ul style="list-style-type: none"> Managing Scientific Research in the Great Barrier Reef Marine Park (2004) Reef Permits System data base. Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf MoU and agreements with CSIRO, Universities Research station environmental management plans GBRMPA advice to researchers - http://www.gbrmpa.gov.au/zoning-permits-and-plans/permits/research-permits-advice-to-researchers 	adequate	stable
PL8 There is consistency across jurisdictions when planning for research	3	<ul style="list-style-type: none"> Research activities that require a permit in the Marine Park may also require a similar permit under Queensland Marine Parks legislation. The GBRMPA and the relevant Queensland agencies cooperate to assess and issue joint permits, where necessary. Queensland legislation may require a permit where the GBRMPA does not. Permits required under the Queensland <i>Biodiscovery Act 2004</i> are issued by the Department of Environment and Heritage Protection. 	<ul style="list-style-type: none"> GBRMPA workshop discussions Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf 	adequate	stable
PL9 Plans relevant to research provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	4	<ul style="list-style-type: none"> Research sites are clearly defined and zoning controls permissible activities Understanding of cumulative impacts of research is limited but given the scale of activities and limited number of sites, overall impacts are likely to have only localised effects although some permits do involve larger scale collection and should be more carefully assessed and monitored 	<ul style="list-style-type: none"> Managing Scientific Research in the Great Barrier Reef Marine Park (2004) Reef Permits System data base. GBRMPA advice to researchers - http://www.gbrmpa.gov.au/zoning-permits-and-plans/permits/research-permits-advice-to-researchers 	adequate	stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address research	3	<ul style="list-style-type: none"> GBRMPA and the major Queensland Government agencies involved in the management of research in the Great Barrier Reef are not themselves primary research institutions. The funds needed for management of research are therefore limited. Management agencies have limited resources for compliance monitoring and research permits and hence rely on research stations to monitor and ensure compliance of researchers with their permit 	<ul style="list-style-type: none"> GBRMPA workshop discussions MoU and agreements with CSIRO, Universities The National Environmental Research Program invests \$20 million each year in environmental research to support decision making. Integrated monitoring framework 	limited	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>conditions.</p> <ul style="list-style-type: none"> Required activities around permit management are undertaken but more active management of research activity would require additional resources. Adequacy of research funding itself is not assessed under this criterion. GBRMPA also recognises scientific research undertaken by postgraduate students that addresses management information gaps through funding for Science for Management Awards but no awards given in 2013 because of funding limitations. 	<ul style="list-style-type: none"> Science for management awards http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/science-and-research/science-for-management-awards http://www.gbrmpa.gov.au/resources-and-publications/publications/annual-reports 		
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address research	3	<ul style="list-style-type: none"> Within GBRMPA, staff are allocated through Science Coordination (3 FTE); Library/Resource Centre (3 FTE); MMP Coordination (1.5 FTE); Permits (1 FTE); Reef Guardians Schools; and reef health surveys and integrated Eye on the Reef. There is little capacity within the GBRMPA to assist institutions monitor their MOUs or develop their Environmental Management Plans for the Scientific Research Zones. Research is principally undertaken in biophysical fields, with little emphasis on socio-economic or heritage (Indigenous, historic or world), although this situation is improving. One project manager was assigned to each of the six Sustainable Regional Development program/NERP projects undertaken to support the strategic assessment in 2012-13 (6 FTE) which placed a high level of strain on staff workloads at GBRMPA. Staff and Senior Management are represented on a number of steering committees (for example NERP projects, Reef Rescue – Intergovernmental Operational Committee and Partnership Committee). 	<ul style="list-style-type: none"> GBRMPA workshop discussions MoU and agreements with CSIRO, Universities Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf 	limited	declining
IN3 The right skill sets and expertise are currently available to the managing organisations to address research	4	<ul style="list-style-type: none"> Good biological and scientific knowledge and skills amongst GBRMPA and Queensland Government agency staff to inform management of scientific research. Limited skill sets within GBRMPA and relevant Queensland Government agencies relating to facilitation of socio-economic or heritage (Indigenous, historic or world) research, modelling-based research, but many staff with research backgrounds and expertise in management of research activities. 	<ul style="list-style-type: none"> GBRMPA workshop discussions MoU and agreements with CSIRO, Universities 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
IN4 The necessary biophysical information is currently available to address research	4	<ul style="list-style-type: none"> Vulnerability assessments, Science Information Needs documents and Strategic Assessment Reports identify critical information gaps Collaborative research program design with major research institutions ensures that the best available biophysical knowledge is used in research planning and design At times there are gaps in knowledge about local abundance/density levels of particular species and hence knowledge about how a proposed research activity might impact upon the local area. A precautionary approach is generally applied in line with the limits in the GBRMP Regulations for limited impact research. 	<ul style="list-style-type: none"> The Australian Government's National Environmental Research Program (NERP) will provide up to \$68.5 million in funding over four years to December 2014 for applied, public good research. The largest of the five NERP hubs, the Tropical Ecosystems Hub is addressing issues of concern for the management, conservation and sustainable use of the World Heritage listed Great Barrier Reef and its catchments, tropical rainforests including the Wet Tropics World Heritage Area, and the terrestrial and marine assets underpinning resilient communities in the Torres Strait, through the generation and transfer of world-class research and shared knowledge. AIMS research program 		
IN5 The necessary socio-economic information is currently available to address research	3	<ul style="list-style-type: none"> SELTMP will provide a better basis for understanding and addressing social and economic research needs and knowledge gaps Scientific Information Needs 2009-2014 does not explicitly address social and economic information needs in a comprehensive way. 	<ul style="list-style-type: none"> Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf SELTMP Research program - http://www.nerptropical.edu.au/project/seltmp 	adequate	improving
IN6 The necessary Indigenous heritage information is currently available to address research	3	<ul style="list-style-type: none"> There is still little traditional knowledge available upon which to address management of scientific research. The Reef Rescue Indigenous Land-Sea Country Partnership Program Plan provides for Indigenous engagement to access traditional knowledge. 	<ul style="list-style-type: none"> Reef Rescue Indigenous Land-Sea Country Partnership Program Plan. GBRMPA workshop discussions 	limited	improving
IN7 The necessary historic heritage information is currently available to address research	2	<ul style="list-style-type: none"> Historic heritage research and information needs are not identified in the 2005 Great Barrier Reef Heritage Strategy 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	limited	stable
IN8 There are additional sources of non-government input (for example volunteers) contributing to address research	4	<ul style="list-style-type: none"> Volunteers and community members are involved in a range of monitoring activities (for example Reef Health surveys, seagrass monitoring, water quality monitoring) Accredited research institutions contribute to the management of scientific research as part of their MOU requirements. Research stations also manage local use of the Scientific Research Zones. 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	limited	stable
PROCESSES					
PR1 The main stakeholders &/or	4	<ul style="list-style-type: none"> Researchers/ universities/ research stations are regularly consulted 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
industry(ies) are effectively engaged in the ongoing management of research		<p>with respect to research, particularly the management of the Accreditation Program.</p> <ul style="list-style-type: none"> • Collaborative arrangements in place with major research institutions and programs such as NERP • Staff and Senior Management are represented on a number of steering committees (for example NERP projects, Reef Rescue – Intergovernmental Operational Committee and Partnership Committee) 	<ul style="list-style-type: none"> • MoU and agreements with CSIRO, Universities 		
PR2 The local community is effectively engaged in the ongoing management of research	3	<ul style="list-style-type: none"> • Local communities are engaged through public awareness and education programs as well as through consultative processes of LMACs, etc. • There are a number of 'Citizen Science' programs operating in the Great Barrier Reef, mostly monitoring aspects of coral reefs, seagrass beds, mangroves, birds and turtles. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	limited	stable
PR3 There is a sound governance system in place to address research	4	<ul style="list-style-type: none"> • Each research application is assessed against a set of criteria listed in the Great Barrier Reef Marine Park Regulations 88Q and R. • Accreditation of research institutions is managed through the Regulations. • The Great Barrier Reef Marine Park Zoning Plan provides for permitted research and limited impact research (without a permit) provided the research institution is accredited and the researchers carry a letter of authorisation from their institution (for compliance purposes). A MOU and code of conduct agreed with the GBRMPA underpins this accreditation program. 	<ul style="list-style-type: none"> • Managing Scientific Research in the Great Barrier Reef Marine Park (2004) • Reef Permits System data base. • Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf • MoU and agreements with CSIRO, Universities • Research station environmental management plans • GBRMPA advice to researchers - http://www.gbrmpa.gov.au/zoning-permits-and-plans/permits/research-permits-advice-to-researchers 	adequate	stable
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for research	3	<ul style="list-style-type: none"> • Limited monitoring of performance of researchers in terms of permit conditions • Regular and intensive interaction between GBRMPA staff and researchers in relation to planning of major research Annual reporting requirements are included in MOUs with research institutions. • Major programs, such as the NERP, undergo evaluation assessments against their stated objectives. • The Outlook Report process and the Strategic Assessment provide a snapshot as to how well the research and monitoring effort satisfies the needs of management. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions • Research permit conditions • Accreditation requirements • Reporting requirements 	limited	declining

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • SELMTP will provide one means to track community perceptions but targeted monitoring and performance assessment of educational programs is limited. 			
PR5 Appropriate training is available to the managing agencies to address research	3	<ul style="list-style-type: none"> • Specific training for management of research activities is not undertaken, but is not required. • No overall training needs assessment has been completed by GBRMPA 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	limited	stable
PR6 Management of research is consistently implemented across the relevant jurisdictions	4	<ul style="list-style-type: none"> • Research activities that require a permit in the Marine Park may also require a similar permit under Queensland Marine Parks Legislation. The Authority and relevant Queensland agencies, (QPWS, EHP, DAFF), cooperate to assess and issue joint permits, where necessary, whereby the research assessor at the GBRMPA undertakes one assessment process in consultation with the QPWS. • Note that Queensland legislation may require a permit where the GBRMPA does not. Also there may be other Queensland Government approvals required before researchers can conduct their activities in the Marine Park. • NPRSR is involved in the assessment of applications through a joint permitting process with the GBRMPA. • The GBRMPA and DoE have an agreement that research involving access to biological resources will only require a permit from the GBRMPA, whilst benefit sharing agreements required under the EPBC Act will be dealt with by the DoE. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions • Research permit conditions 	adequate	stable
PR7 There are effective processes applied to resolve differing views/ conflicts regarding research	4	<ul style="list-style-type: none"> • The GBRMPA provides for a review rights process for all its permit decisions. The applicant or aggrieved third party can apply to have the decision reconsidered and reviewed. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	limited	stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with research are appropriately considered.	4	<ul style="list-style-type: none"> • Direct and indirect impacts are well considered at the permit application assessment stage, but there is limited follow up on performance reports. • The cumulative impacts of scientific research activities cannot be currently assessed in detail. Environmental Management Plans for high use Scientific Research Zones should assist in cumulative impact assessments in certain locations but at this stage only one EMP has been prepared (Orpheus Island). Other research stations such as Heron Island have their own environmental management systems. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	limited	stable
PR9 The best available biophysical research and/or monitoring	4	<ul style="list-style-type: none"> • National requirements for access of biological resources 	<ul style="list-style-type: none"> • Science Information Needs document on GBRMPA website: 	limited	improving

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
information is applied appropriately to make relevant management decisions regarding research		<p>(http://www.environment.gov.au/biodiversity/publications/access/nca/index.html) under the EPBC Act are adhered to within the Marine Park.</p> <ul style="list-style-type: none"> Science information needs document developed, informed by results of Outlook Report 2009 Report provides a more structured approach to identifying and planning for research – primarily relating to biophysical aspects of the Reef 	<p>http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf</p>		
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding research	2	<ul style="list-style-type: none"> SELMTP will provide a better understanding of research needs and an improved basis for managing research relevant to social and economic aspects of the Reef 	<ul style="list-style-type: none"> Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf SELMTP Research program - http://www.nerptropical.edu.au/project/seltmp GBRMPA workshop discussions 	limited	improving
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding research	2	<ul style="list-style-type: none"> There is little traditional knowledge available upon which to address management of scientific research. Indigenous interests are considered in making decisions about research permit applications where these interests are known. 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	limited	stable
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding research	3	<ul style="list-style-type: none"> There is little historic heritage information available upon which to address management of scientific research. However research activities that might impact on historic heritage are limited. Historic heritage values known and taken into account in managing research at Raine Island. 	<ul style="list-style-type: none"> Raine Island Management arrangements - http://www.gbrmpa.gov.au/zoning-permits-and-plans/site-specific-management/raine-island-moulter-cay-and-maclennan-cay-site-management-arrangements Raine Island National Park (Scientific) Management Statement 2006–2016 	limited	stable
PR13 Relevant standards are identified and being met regarding research	4	<ul style="list-style-type: none"> Responsible reef practices referred to in the GBRMPA policy of managing scientific research are generic and not specific to research practice. Ethical approval requirements are considered in permit applications. Research permit provisions are generally in line with good practice for responsible research but could be improved. 	<ul style="list-style-type: none"> GBRMPA workshop discussions Research permit conditions 	limited	stable
PR14 Targets have been established to benchmark management performance for research	3	<ul style="list-style-type: none"> Formal benchmarks and targets for management of research have not been set. Nevertheless management of the extensive research activity conducted within the Great Barrier Reef is of a high standard with 	<ul style="list-style-type: none"> Environmental Management Plan for the Orpheus Island Scientific Research Zone (SR-18-2007) September 2007 GBRMPA workshop discussions 	limited	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>good collaboration between managers and researchers and research institutions.</p> <ul style="list-style-type: none"> Performance indicators, reporting mechanisms and review processes specified in the Orpheus Island Environmental Management Plan 			
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for research	3	<ul style="list-style-type: none"> Although the accreditation of research/education institutions has progressed well, the development of environmental management plans for scientific research zones has been slow. The policy on managing scientific research (developed in 2004) requires updating. Permits are generally assessed within recommended timeframes of 8-10 weeks. 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	adequate	stable
OP2 Implementation of management documents and/or programs relevant to research have progressed in accordance with timeframes specified in those documents	4	<ul style="list-style-type: none"> Annual reports are submitted by accredited institutions within the requirements of their MOU. Limited post-completion auditing of research permit condition compliance Research needs document updated following Outlook Report 2009 with intent to revise this following each Outlook Report Collaborative research programs where GBRMPA is providing advice and participating in steering committees are generally proceeding in accordance with planned timeframes (for example,. NERP including SELMTP, Integrated Monitoring) 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	adequate	stable
OP3 The results (in OP1 above) have achieved their stated management objectives for research	4	<ul style="list-style-type: none"> At any one time there is on average 250 current research permits operational in the Marine Park. Eight research institutions have been accredited, which reduces the permit requirements for researchers/institutions if they are undertaking low impact research. One Environmental Management Plan is in place for Orpheus Island Research Station. The GBRMPA helps facilitate the delivery of the science needed to protect and manage the World Heritage Area through: <ul style="list-style-type: none"> articulating problems framing specific questions assisting in project design providing letters of support for grant applications 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> ○ advising on the most useful form and timing of delivery ○ synthesising spatial datasets and delivering outputs to science partners and the community ○ helping interpret science for government and the public ○ facilitating policy and operational outcomes from science. ● Research and monitoring of the Great Barrier Reef environment continues to contribute to global knowledge about individual species, coral reef systems and tropical marine ecology. An improved understanding of the Region's environment and how its components interact and respond to changing conditions has contributed substantially to its protection and management. In addition, the results of targeted and applied research are providing managers with information to better measure the outcomes of management initiatives 			
OP4 To date, products or services have been produced in accordance with the stated management objectives for research	4	<ul style="list-style-type: none"> ● Research is playing its role in informing management of the Marine Park. ● Initiation of the SELTMP and Integrated Monitoring Program are meeting specific needs identified in these areas. ● Targeted research to address climate change have been delivered. 	<ul style="list-style-type: none"> ● GBRMPA workshop discussions 	adequate	stable
OP5 Effective knowledge management systems regarding research are in place within agencies	3	<ul style="list-style-type: none"> ● Great Barrier Reef Research permits system does not fully capture relevant information and needs revision. ● Management of scientific information procedures are in place using a bibliographic database and citation management tool. ● Data from research collection reports is not effectively managed and used by GBRMPA. ● A more consistent format to annual reports from research stations would facilitate more active use of these data. ● Tools to disseminate information about values and impacts on them are available, and undergoing development to improve service delivery – for example, the integrated Eye on the Reef program to provide a centralised database for reef health information, Reef Explorer is an interactive tool for displaying spatial information. ● Some of the spatial information and datasets arising from research conducted in the Marine Park are housed and managed by the GBRMPA Spatial Data Centre but most research data remains the property of the researchers/institutions that collected the information and is not available to the Spatial Data Centre. Scientific programs 	<ul style="list-style-type: none"> ● GBRMPA workshop discussions ● Research permits database 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>are becoming increasingly spatial in focus and output, generating a variety of spatial datasets about the Region's values, its use and impacts. As a consequence, the process of gathering, synthesising, interpreting and delivering these datasets is becoming increasingly important. Continued collaboration between the GBRMPA and its partners will help to identify and address gaps in spatial data and opportunities to share data and make it more 'discoverable' by others.</p> <ul style="list-style-type: none"> • Visualisation tools such as eATLAS help with management of research information. Other meta-data repositories and portals also exist (Australian Ocean Data Network (AODN), Tropical Data Hub, Atlas of Living Australia, etc). 			
<p>OP6 Effective systems are in place to share knowledge on research with the community</p>	<p>4</p>	<ul style="list-style-type: none"> • Outlook Report and the Strategic Assessments have provided a very useful compilation of "state of knowledge" arising from research in the Reef • Communication through plain-English products summarising outcomes of scientific research is undertaken to some extent, but not systematically. • e-Library (GBRMPA external website) provides access to publications • eResearch Archive is a digital repository of scientific and research publications, and datasets authored by DAFF staff, including journal articles, book chapters, conference papers, theses and raw data collected in the course of research. • The non-scientific community is engaged via the GBRMPA's LMACs, magazines – for example Reef Beat, media releases, etc • Eye on the Reef program • The Reef Videoconferencing program is Reef HQ Aquarium's outreach education program which informs people around the world about the Great Barrier Reef. • The Great Barrier Reef Marine Park Authority's Reef Guardian stewardship program began with schools in 2003 to encourage the community to take action for a healthier Reef. • The Reef Guardian Schools initiative currently has 293 schools, over 114,900 students and 7280 teachers involved in building the Reef's resilience. • The Great Barrier Reef Marine Park Authority's Science Teaching 	<ul style="list-style-type: none"> • GBRMPA workshop discussions • GBRMPA website 	<p>adequate</p>	<p>stable</p>

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		Units have been developed from the Key Focus Areas of the Great Barrier Reef Outlook Report 2009 and are linked to the Australian Science Curriculum.			
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing research and moving towards the attainment of the desired outcomes.	4	<ul style="list-style-type: none"> • Researchers are able to gain access to the Marine Park through a structured permit process. This process aims to manage the impact of the research via permit conditions. • Much of the research conducted in the Marine Park provides information that is important to the management of the Marine Park. • Currently there is emphasis on understanding cumulative impacts and integrated monitoring to support and inform management. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	adequate	stable
OC2 The outputs relating to research are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	4	<ul style="list-style-type: none"> • Research is increasingly targeted on addressing issues of key management concern and the publication of Great Barrier Reef Research Needs is likely to continue this trend. • More research is being undertaken through partnerships between management agencies and researchers and research institutions and this is translating into more immediate application of research findings to management. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	adequate	stable
OC3 the outputs (refer OP1 and 3) for research are reducing the major risks and the threats to the Great Barrier Reef	4	<ul style="list-style-type: none"> • Research does not represent a significant threat to the Great Barrier Reef and research activities are appropriately controlled and managed. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	adequate	stable
OC4 Use of the Great Barrier Reef relating to research is demonstrably environmentally sustainable	4	<ul style="list-style-type: none"> • In general, research is not seen to have a large and detrimental impact on the reef ecosystem. • Enhanced collaboration between management agencies and researchers means that there is greater awareness of potential research impacts. • Confidence that research is environmentally sustainable is reduced by the limited knowledge of cumulative impacts of collection. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	adequate	stable
OC5 Use of the Great Barrier Reef relating to research is demonstrably economically sustainable	N/A				
OC6 Use of the Great Barrier Reef relating to research is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> • Dissemination of research through a variety of channels (Outlook Online, GBRMPA website, etc) improves community understanding of Great Barrier Reef issues. • The GBRMPA does very little of its own research, however it uses published research to inform its management decisions and to help 	<ul style="list-style-type: none"> • GBRMPA workshop discussions • Zoning Plan 	adequate	stable

Component of management of research activities	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>educate the public. The GBRMPA works closely with research institutions such as the ARC Centre of Excellence for Coral Reef Studies, AIMS, etc. which publish research results, provide public fora about their research and disseminate it through the media so that it enhances community understanding and/or enjoyment.</p> <ul style="list-style-type: none"> The Scientific Research (Orange) Zone makes up less than one per cent of the Marine Park so exclusion of other use for scientific research has minimal impact on other reef users 			
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address research	4	<ul style="list-style-type: none"> Management agencies have a close relationship with the key research institutions in relation to how scientific research is managed in the Reef. Eye on the Reef program has established effective research and monitoring partnership with stakeholders and the reef users. 	<ul style="list-style-type: none"> Science Information Needs document on GBRMPA website: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf MoU and agreements with CSIRO, Universities Rapid Monitoring Program - http://www.gbrmpa.gov.au/visit-the-reef/eye-on-the-reef/the-rapid-monitoring-survey 	adequate	stable

Table 28 Calculation of grades for shipping

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
CO1 The values of the Great Barrier Reef relevant to shipping are understood by managers	3	<ul style="list-style-type: none"> In general terms the values of the Great Barrier Reef relevant to shipping are understood by managers, but specific knowledge of shipping and ship operations within GBRMPA staff could be improved. While acknowledging that GBRMPA leverages management off and through other regulatory agencies (AMSA and MSQ), an improved understanding would assist GBRMPA to better guide and oversee shipping management within the Great Barrier Reef Region in terms of defining and realising management objectives to protect Great Barrier Reef Marine Park values and processes. There is a predicted possible doubling of shipping traffic within the Marine Park over the next 10 years. Increased shipping traffic makes risk of significant incident more likely in pure statistical terms. GBRMPA considers all EIS /PER port development proposals to assess the impacts of increased shipping under EPBC GBRMPA guidelines. Such assessments consider individual port development proposals. which in the absence of a strategic focus will result in <i>ad hoc</i>, potentially disconnected assessments of resultant shipping risks. Accordingly, it is better to undertake periodic, umbrella reviews of shipping traffic densities and associated risks and management in the Great Barrier Reef Region, and to keep these up-to-date by periodic review, and then link individual port assessments to these overarching assessments. 	<ul style="list-style-type: none"> DRAFT Ports Position Statement was approved through MPA Board in October 2012 for public comment Ports and Shipping Information Sheet website Shipping - Challenges for the Great Barrier Reef August 2012 on GBRMPA State Party Report on Shipping. The reports demonstrate Australia's progress on a wide range of work including the Great Barrier Reef comprehensive strategic assessment, development of the North-East shipping plan as well as important research projects and ongoing adaptive management activities. State Party Report on the State of Conservation of the Great Barrier Reef World Heritage Area (Australia) 2012 DRAFT Shipping Position Statement undergoing internal GBRMPA consultation DRAFT GBRMPA Shipping Risk Profile undergoing internal consultation. Chapter 4 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified PGM Environment (2012), Great Barrier Reef Shipping: Review of Environmental Implications, PGM Environment, Safety Bay, Western Australia Carter, A.B., Chartrand, K.M. and Rasheed, M.A. 2012, <i>Critical marine habitats in high risk areas, Princess Charlotte Bay region - 2011 Atlas.</i>, The State of Queensland, Department of Agriculture, Fisheries and Forestry, Northern Fisheries Centre, Cairns. State Party Report on the State of Conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area Particularly Sensitive Sea Areas Fact Sheet [PDF: 171Kb] 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
			<ul style="list-style-type: none"> Great Barrier Reef/Torres Strait Particularly Sensitive Sea Area [PDF: 754Kb] Legislation page on the 'About AMSA' section of the website 		
CO2 The current condition and trend of values relevant to shipping are known by managers	4	<ul style="list-style-type: none"> The predicted increase in the volume of shipping plying the Great Barrier Reef, and other aspects of ongoing management, indicate the need to collate better records of actual ship movements within the Great Barrier Reef Region and to tie these with forecasts for future levels of activity. Recent experience with assessment work in this domain has indicated the difficulty of gathering such records, and the disparate results gained when comparing various available records and forecasts. Pre-emptive action to ensure that management and regulatory capacities keep ahead of any actual increases in ship traffic levels is pivotal to the effective management of shipping in the Great Barrier Reef Region (for example.. REEFVTS monitoring capacity, navigation aids, availability of pilots, oil/chemical spill response capabilities, and similar). Little is known about the status and trend of the aesthetic value of the Great Barrier Reef World Heritage Area in relation to shipping activities as there has been no regular monitoring of the aesthetic value undertaken in the World Heritage Area. Aesthetic considerations, however, need to be taken in the context that ships within and anchored off a port will be visible and that this is an inevitable effect of the approval of a port development or expansion. Where evaluation of aesthetic issues may have some merit would be in isolated areas of the Reef where shipping sails through with some frequency. Maintenance of appropriate standards of crew training and competency, as well as adequate fatigue management processes, underpin safe shipping within the Great Barrier Reef Region. It is important that these issues are adequately addressed at the international level through the International Maritime Organization (IMO), and at a regional level by effective, comprehensive Australian Port State Control 	<ul style="list-style-type: none"> Chapter 6 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified North East Shipping Risk Assessment (prepared by Det Norske Veritas), the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area PGM Environment (2012), Great Barrier Reef Shipping: Review of Environmental Implications, PGM Environment, Safety Bay, Western Australia. DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		procedures.			
CO3 Impacts (direct, indirect and cumulative) associated with shipping are understood by managers.	2	<ul style="list-style-type: none"> GBRMPA considers all EIS /PER port development proposals to assess the impacts of increased shipping under EPBC GBRMPA guidelines. Such assessments consider individual port development proposals, which in the absence of a strategic focus will result in <i>ad hoc</i>, potentially disconnected assessments of resultant shipping risks. Accordingly, it is better to undertake periodic, umbrella reviews of shipping traffic densities and associated risks and management in the Great Barrier Reef Region, and to keep these up-to-date by periodic review, and then link individual port assessments to these overarching assessments. As a consequence of the dynamic nature of shipping, constant changes to the levels and type of traffic at many ports has also lead to a greater range of Noxious and Hazardous Substances that will be transported in bulk and in packaged form through the Marine Park. There are many unknown risks from impacts of these new substances and training and preparation for a chemical spill (other than hydrocarbons) has to date been limited. Port expansions along the Queensland coast will mean consequential increases in shipping levels, and associated environmental effects. This may have implications for migratory species and others resident in port/anchorage areas. Knowledge gaps, such as about inshore dolphins, make assessment and management somewhat problematic. It is considered essential that GBRMPA develop a comprehensive understanding of shipping and its potential effects (or absence thereof) so that finite research and management resources may be optimally allocated. It is recognised that more ships could mean larger areas of benthic disturbance due to anchor and cable drag within designated anchorage areas, although revised management practices for ship arrivals, anchorage siting and management and terminal operations will serve to limit the number of ships at anchor at any one time. 	<ul style="list-style-type: none"> Chapter 6 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified North East Shipping Risk Assessment (prepared by Det Norske Veritas), the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area PGM Environment (2012), Great Barrier Reef Shipping: Review of Environmental Implications, PGM Environment, Safety Bay, Western Australia. DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. For statements regarding risks to habitats and species from Ports & Shipping see the Great Barrier Reef Biodiversity Conservation Strategy 2012 http://www.gbrmpa.gov.au/about-the-reef/biodiversity/draft-biodiversity-conservation-strategy See World Heritage Committee report (http://whc.unesco.org/archive/2012/whc12-36com-7BAdd-en.pdf) <i>Shen Neng 1</i> Grounding Impact Assessment http://www.gbrmpa.gov.au/resources-and-publications/publications/shen-neng-1-grounding-impact-assessment Great Barrier Reef Shipping Review Steering Committee 2001. Review of Ship Safety and Pollution Prevention measures in the Great Barrier Reef. Australian Maritime Safety Authority 2008. Particularly Sensitive Sea Areas: Fact Sheet. Australian Maritime Safety Authority 2010. Improving Safe Navigation in the Great Barrier Reef 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • The World Heritage Committee has made a number of recommendations to protect the outstanding universal value of the property in relation to shipping. • Actual and potential risks from shipping mainly relate to: physical damage from the grounding of large vessels with the associated contamination from biocidal anti-fouling paint; chemical spills; oil spills; vessel strikes on wildlife; marine noise; lighting; vessel-based waste discharge; and the introduction of exotic marine species. The increasing prevalence of ships anchoring off ports is likely to increase disturbance to the seabed, visual amenity, potential for marine pest introduction, light pollution, interference with species behaviour and the displacement of other users such as recreational users and commercial fishers. • The nature of the Great Barrier Reef Region's environment, with its coral reefs and islands, increases the navigational hazards for all ships. • Despite the number of ship movements, control measures such as navigation aids, pilotage services and REEFVTS have limited the likelihood and risk of collisions and groundings. REEFVTS has been demonstrably effective in minimising shipping incidents in the Great Barrier Reef Region, but with forecast increases in shipping activity, it is critical that REEFVTS capacity is maintained at a level sufficient to cope with demand, including ensuring capacity increases occur at a rate in advance of any actual increase in shipping movements. • Wake and turbulence effects from ship movements in ports and shallow/narrow channels are readily observable from the resulting turbidity plumes. The effect of cumulative changes in water quality from these plumes on Great Barrier Reef values is not known and bears further research and analysis. 	<ul style="list-style-type: none"> • Australian Maritime Safety Authority 2011. Strengthening the protection of the Great Barrier Reef. • Great Barrier Reef Marine Park Authority 2011. DRAFT: Emerging Risk from Shipping in the Great Barrier Reef Marine Park. • For draft agency position on shipping risks see Draft GBRMPA Shipping Position Statement and DRAFT GBRMPA Shipping Risk Profile • As part of the Australian Government's Sustainable Regional Development program, the GBRMPA is managing a targeted research project to address a key knowledge gap related to shipping. The study will identify the impacts and effective management strategies associated with offshore ship anchorages in the World Heritage Area. The outcomes of this study will inform the Strategic Assessment • The Strategic Assessment will inform consequential and cumulative impacts. • DRAFT North East Shipping Management Plan – released for public consultation in September 2013 draft in progress. GBRMPA is working with AMSA, other government agencies and industry stakeholders to develop this plan which will assess the effectiveness of current shipping safety measures and identify additional or enhanced measures that may be needed in the future. In light of cumulative impacts, the plan will focus on issues directly related to the safety of shipping such as navigation, routing, water space management, and issues that prevent or mitigate ship-sourced pollution. • Regional Sustainability project – Identification of the impacts and effective management strategies associated with offshore ship anchorages in the World Heritage Area. • The draft Ports Position Statement addresses some consequential impacts (impacts from increased shipping) of port expansions through providing management positions on certain port operations and the location of ports. • Cumulative impacts Assessment (Abbot Point) http://www.nqbp.com.au/abbot-point/http://www.abbotpointworkinggroup.com.au/ • Proponents for large-scale projects are being encouraged by 		

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
			<p>GBRMPA to undertake strategic assessments in collaboration with the Federal and Queensland governments. Strategic assessments are designed to examine potential impacts of all activities associated with proposals, including cumulative and inter-related impacts.</p>		
<p>CO4 The broader (national and international) level influences relevant to shipping are understood by managers.</p>	<p>3</p>	<ul style="list-style-type: none"> • It is important to recognise that the environmental risk profile of shipping within the Great Barrier Reef Region is fundamentally controlled by an international regime, encompassing ship safety and marine environment protection, coordinated through the International Maritime Organization (IMO), of which Australia is a Member. Consequently, incremental improvements in shipping risk profiles are realised via IMO mechanisms. By extension, GBRMPA needs to continue to leverage its effective links with AMSA, as the primary Australian representative body in the IMO (although other Commonwealth agencies also have representative roles on certain issues). • There is also a global trend towards longer, deeper draught ships, and the profile of the world fleet has already changed, with ship size increasing and average carrying capacity rising by four per cent per annum. Although requiring deeper channels and basins, larger individual ships can also lead to an improvement in the overall environmental risk profile of a given volume of shipping cargo when compared with smaller individual ships. • There has been significant turnover in the fleet of ships visiting NE Queensland ports, largely due to the high number of new ships launched worldwide in recent years and the average age of these ships has fallen from 9.5 years in 2008-09 to 7.8 years in 2012-13. This represents a clear improvement in ship safety, as ship age is statistically important in respect of the risk of ships being detained when inspected, and also indicates greater presence of more recent IMO-mandated ship safety and marine environment protection fittings and design features. 	<ul style="list-style-type: none"> • North East Shipping Management Plan • Chapter 5 draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified • the North Queensland Ship Traffic Growth Study - Supplementary Report (prepared by Braemar Seascope) • the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area • Data and scope of estimates on shipping are constantly changing as they are updated, revised etc • PGM Environment (2012), Great Barrier Reef Shipping: Review of Environmental Implications, PGM Environment, Safety Bay, Western Australia. 	<p>Adequate</p>	<p>Stable</p>

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
CO5 The stakeholders relevant to shipping are well known by managers.	4	<ul style="list-style-type: none"> The Australian Maritime Safety Authority (AMSA), the Great Barrier Reef Marine Park Authority (GBRMPA) and Maritime Safety Queensland (MSQ) work closely together to protect the marine environment from adverse consequences of shipping operations and providing for the safety of life of ships' crew, passengers and other users of the Great Barrier Reef. Other shipping stakeholders include the Biosecurity section of the Commonwealth Department of Agriculture (in relation to introduced marine pests and ballast water issues), and the Australian Customs and Border Protection Service (in regard to surveillance and enforcement measures). 	<ul style="list-style-type: none"> Ports and Shipping Information Sheet: August 2012. ,Reported GBRMPA DRAFT Ports Position Statement and DRAFT Shipping Position Statement – Authority states that these should inform stakeholders and the general public about the role of ports and shipping in the Great Barrier Reef Region and how GBRMPA is meeting the challenges of managing an ecologically sustainable multiple-use Marine Park. The GBRMPA intends to engage with all port-related stakeholders and initiate an improved Memorandum of Understanding and develop best practice port management guidelines Great Barrier Reef Shipping Management Group (GBRMPA, MSQ, AMSA, DAFF, Department of the Environment (SEWPaC), DRET) examines key issues and management arrangements concerning shipping in the Great Barrier Reef. A working group will be developing the draft North-East Shipping Management Plan DRAFT North-East Shipping Management Plan (AMSA, MSQ, GBRMPA, Department of the Environment (SEWPaC), DAFF, DRET) terms of reference) considers to cover the north-east region to include the GBR, Torres Strait and the Coral Sea and include: <ul style="list-style-type: none"> a review of the effectiveness of current measures an examination of realistic scenarios for future shipping activity and demand Recommend appropriate measures that may be implemented over the next ten years to ensure the protection of the environment and to facilitate the safe navigation of ships. 	Adequate	Stable
PLANNING					
PL1 There is a planning system in place that effectively addresses shipping	3	<ul style="list-style-type: none"> Planning and management appear generally to be well in-hand, but it is important for these efforts to be effective into the future that good records and forecasts are maintained of actual and projected future ship movements through the Great Barrier Reef Region, so that management controls may anticipate, and respond, in advance of any new or accentuated risks. 	<ul style="list-style-type: none"> North-East Shipping Management Plan is now open for public comment until 4 October 2013, and is presented in two parts - the first is the complete report and the second is a summary work plan.) National Marine Oil Spill Contingency Plan Coastal Protection State Planning Regulatory Provision 2013, is available online: 	Adequate	Improving

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • The North-East Shipping Management Plan⁴⁵ (NESMP) sets out the Australian Government's intentions to enhance ship safety in the Great Barrier Reef, Torres Strait and Coral Sea regions. It examines shipping-related risks and identifies protective measures to address them. It is a collaborative plan developed by the AMSA in cooperation with other responsible government agencies, including GBRMPA. It examines known, potential and cumulative shipping-related impacts such as collisions, groundings, release of air emissions and other pollutants, marine pest introduction, wildlife disturbance, altered aesthetic value, and wildlife collisions, as well as impacts on Indigenous, cultural and social values. The draft plan demonstrates a proactive approach to addressing the projected increased risks from shipping, outlining the safety and environmental standards that need maintaining or improving. It identifies a number of measures to reduce risks from shipping, including: <ul style="list-style-type: none"> ○ additional areas for consideration of pilotage requirements ○ increased resources for Port State Control inspections to ensure all ships meet the applicable standards ○ increased focus on areas related to navigational risk (such as fatigue, passage planning and navigational equipment) ○ additional protection for the Coral Sea through seeking categorisation as a Particularly Sensitive Sea Area and implementing Associated Protective Measures such as ship reporting and routing requirements ○ using emerging ship tracking technology to improve awareness of shipping movements in the Coral Sea and to provide early alert of ship breakdowns ○ more active management of traffic such as a 'traffic organisation service' to minimise collision risk, particularly in confined waters such as Hydrographers Passage ○ working with industry to further the adoption of Electronic Chart Display and Information Systems, an 	<p>http://www.dsdip.qld.gov.au/resources/factsheet/planning/coastal-protection-sprp.pdf</p> <ul style="list-style-type: none"> • Draft State Planning Policy, is available online: http://www.dsdip.qld.gov.au/resources/policy/state-planning/draft-spp.pdf • PGM Environment (2012), Great Barrier Reef Shipping: Review of Environmental Implications, PGM Environment, Safety Bay, Western Australia • The Great Barrier Reef Shipping Management Group and through the North-East Shipping Management Plan will review effectiveness of existing management arrangements in view of the predicted increases in shipping and associated risks. • In collaboration with key stakeholders, GBRMPA's policy positions (including through Ports Position Statement and Shipping Position Statement and the implementation of management measures when outcomes from the Strategic Assessment are known) will improve existing management arrangements where there is an identified need. 		

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>alternative to paper charts, which assists navigation through ship position monitoring and alarms when a ship exceeds pre-defined safety boundaries</p> <ul style="list-style-type: none"> ○ working with industry to promote the design and use of protected fuel tanks which reduce the risk of an oil spill in the event of casualty such as grounding or collision. ○ In the event of a major pollution incident AMSA manages the National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances (National Plan), with subsidiary linkages with Queensland Plan. It is critical that these contingency measures are periodically tested and adequately resourced. ○ The National Plan links with Queensland State-wide and regional measures via the Queensland Coastal Contingency Action Plan (QCCAP), which is overseen by MSQ. The QCCAP specifically addresses the waters of the Great Barrier Reef and the Torres Strait region. The QCCAP includes First-Strike Response Plans for individual Queensland ports and key marine areas, as well as the Queensland Oiled Wildlife Response Plan. ○ Emergency Towing Vessel (ETV) capability is maintained on a permanent basis in northern areas, with lesser availability in other areas of the Great Barrier Reef. ETV arrangements need to be reviewed and enhanced, particularly in relation to forecast increases in shipping activity. ○ Response Plan for Introduced Pests in existence, but only if pest incursion, but not for surveillance, management, prevention .Current marine pest management arrangements for the Great Barrier Reef Region are considered inadequate. This is due to absence of coordinated. routine surveillance, and lack of comprehensive biofouling risk management framework management for vessels operating within 			

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		Great Barrier Reef Region.			
PL2 The planning system for shipping addresses the major factors influencing the Great Barrier Reef Region's values.	4	<ul style="list-style-type: none"> At a whole-of-government level, the planning system is considered effective. In collaboration with key stakeholders, GBRMPA's policy positions (including through Ports Position Statement and Shipping Position Statement and the implementation of management measures when outcomes from the Strategic Assessment are known) will improve existing management arrangements where there is an identified need. 	<ul style="list-style-type: none"> the North-East Shipping Management Plan⁴⁵ (NESMP) the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area Great Barrier Reef Zoning Plan 2003 North-East Shipping Management Plan DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. Outputs from Regional Sustainability anchorage study 	Adequate	Improving
PL3 Actions for implementation regarding shipping are clearly identified within the plan	4	<ul style="list-style-type: none"> At a whole-of-government level, actions for implementation regarding shipping are effective. Some limitations are evident at the level of the GBRMPA input, although this relates more to long-term management objectives in relation to shipping and the Marine Park. 	<ul style="list-style-type: none"> Biodiversity Conservation Strategy 2012 North-East Shipping Management Plan. DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. Outputs from Regional Sustainability anchorage study WQ Protection Plan 2009: http://www.environment.gov.au/coasts/pollution/reef/index.html 	Adequate	Improving
PL4 Clear, measurable and appropriate objectives for management of shipping have been documented	2	<ul style="list-style-type: none"> Although shipping within the Great Barrier Reef is well managed, there is no evidence of any articulation of any clear, measurable and appropriate objectives for the management of shipping within the Marine Park, although it is understood that these are currently being developed by GBRMPA. 	<ul style="list-style-type: none"> This is being done through: <ul style="list-style-type: none"> Biodiversity Conservation Strategy 2012 North-East Shipping Management Plan DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. adherence to EIM Risk Management Framework for all environmental assessment processes. use of precautionary approach when making 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
			management recommendations (in accordance with the <i>Great Barrier Reef Marine Park Act, 1975</i>)		
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to shipping	2	<ul style="list-style-type: none"> Noting the forecast increases in shipping, and the fact that effective management pivots upon having adequate capacity in management and regulatory arrangements, there is considered to be the need to develop a “live” shipping volumes monitoring and forecasting tool, collecting data on ship numbers and sizes, to support ongoing and periodic management and risk reviews of shipping in the Great Barrier Reef. 		Adequate	Stable
PL6 The main stakeholders &/or the local community are effectively engaged in planning to address shipping	4	<ul style="list-style-type: none"> The stakeholders with regard to regulation of shipping are effectively engaged. It is not apparent what role the community may have in relation to the management of shipping (as opposed to 'ports'). 	<ul style="list-style-type: none"> AMSA Annual Report r88D of GBRMP Regulations 1983 s98 and 103 of EBPC Act 1999 Through the overarching Strategic Assessment Communication plan, which encompasses consultation arrangements for position statements and Regional Sustainability research projects – both targeted consultation with key stakeholders such as ports, MSQ, AMSA, LMACs, etc. and broader stakeholder and community consultation is being undertaken. 	Adequate	Improving
PL7 Sufficient policy currently exists to effectively address shipping	4	<ul style="list-style-type: none"> There is currently no GBRMPA policy on Shipping. Draft position papers on ports and shipping have been developed and will be released for public comment as part of the strategic assessment. Overall, at the whole-of-government level it is considered that there does exist sufficient policy to effectively address shipping. GBRMPA suggests that a policy is required to address the impacts of noise on marine life,' in particular the increase in shipping noise'. This is not supported, as the perceived risk is minimal on the available evidence. It would be more prudent to actually characterise and assess any such risks as a precursor to determining if such a policy was warranted, and if so, its content and objectives. Furthermore, GBRMPA would have limited latitude to affect any outcomes, noting that shipping noise profiles are inherent to design and build, and 	<ul style="list-style-type: none"> Cruise Shipping Policy for the Great Barrier Reef Marine Park [PDF 126KB] Superyacht Management Arrangements [825.0 KB] Compliance and Enforcement Policy and the Compliance and Enforcement Protocol. DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. Ports and Shipping Information Sheet on GBRMPA website September 2012 Position statement includes that the systems and resources available for addressing shipping risks should be subject to continuous audit and improvement including: <ul style="list-style-type: none"> the charting and provision of navigational facilities in all 	Adequate	Improving

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>thus regulated through the IMO. On current information there is no justification for a GBRMPA shipping noise policy.</p> <ul style="list-style-type: none"> • Illumination from ships at anchor and alongside may also pose a risk to nesting and hatching sea turtles in some locations and needs to be addressed consistently amongst jurisdictions. • Policy and procedures need to be implemented regarding restoration/rehabilitation of the marine environment from pollution or grounding incidents. This has been flagged as a work item by the North-East Shipping Management Group. • There is a current lack of Statewide strategic planning for existing ports and future new port developments. Although a 'ports' issue, this has implications for shipping in relation to the use of routes and channels within the Great Barrier Reef. 	<ul style="list-style-type: none"> ○ potential navigable waters of the Marine Park ○ the ability to effectively respond to, and refloat grounded ships, thereby reducing the probability of further impacts such as spills ○ understanding and restoring the environment after a shipping incident ○ reviewing and strategically managing the emerging environmental risks from shipping. <ul style="list-style-type: none"> • Strategic Assessment outcomes (including results from the anchorage study) will lead to the development and implementation of further policies. 		
PL8 There is consistency across jurisdictions when planning for shipping	4	<ul style="list-style-type: none"> • Consistency across jurisdictions appears to be good. 	<ul style="list-style-type: none"> • Strategic Assessment 2013 (Post Outlook Report 2009) 	Adequate	Improving
PL9 Plans relevant to shipping provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	4	<ul style="list-style-type: none"> • Shipping in the Great Barrier Reef Region is considered to be effectively regulated in overall terms. 	<ul style="list-style-type: none"> • Strategic Assessment 2013 (Post Outlook Report 2009) 	Adequate	Stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address shipping	3	<ul style="list-style-type: none"> • The capacity of the Program to guarantee a response to incidents in an effective and timely manner is currently constrained by the availability of suitable vessels, especially long-range vessels, and the number and availability of staff trained in specialist fields. A commitment from both the Australian and Queensland governments to replace one of the Program's reef-wide response capable vessels in the 2013-14 financial year will improve the Program's ability to provide access to all locations in the World Heritage Area and maintain that deployment for extended periods. The replacement of <i>Reef Heron</i> at Gladstone with an open ocean 	<ul style="list-style-type: none"> • Field Management Business Strategy • Permit Application Assessment Fees: http://www.gbrmpa.gov.au/zoning-permits-and-plans/permits/permit-application-assessment-fee • <i>Shen Neng 1</i> Ship Grounding Information Paper http://www.gbrmpa.gov.au/__data/assets/pdf_file/0004/17833/She-n-Neng-information-sheet-4.pdf • <i>Shen Neng 1</i> Grounding Impact Assessment • http://www.gbrmpa.gov.au/resources-and-publications/publications/shen-neng-1-grounding-impact- 	Adequate	Stable (-)?

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>vessel, as provided under this Business Strategy, means that for the first time field management will have a rapid response capability at either end of the World Heritage Area. This is a major improvement on the current situation. It also highlights why implementation of a forward capital schedule to reach a reduced but operationally effective fleet is an important task over the next five years. There is also need to review and augment ETV arrangements , as warranted by forecast increases in shipping activity.</p> <ul style="list-style-type: none"> Minimal funds, if any, available for invasive marine species prevention measures and port monitoring in Great Barrier Reef ports. 	assessment		
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address shipping	3	<ul style="list-style-type: none"> Capacity of management agencies to deal with the growth in shipping activity is being tested. It is not clear whether GBRMPA staff have optimal capacity and availability in order to best advance GBRMPA objectives. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Adequate	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address shipping	3	<ul style="list-style-type: none"> In wider government, sufficient expertise is available to adequately manage shipping . It is not clear whether GBRMPA staff have optimal knowledge of shipping in order to best advance GBRMPA objectives. 	<ul style="list-style-type: none"> Strategic Assessment 2013 GBRMPA, MSQ, AMSA frequently liaise for shipping management and operational arrangements, including incident management. The Great Barrier Reef Shipping Management Group is a forum for formal development and review of management arrangements and emerging issues. 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address shipping	4	<ul style="list-style-type: none"> Information is being made available from the research investment the Australian Government is making through the National Environmental Research Program Tropical Ecosystems Hub and through a number of projects instigated to address gaps identified recently. Need more information on species distributions and habitat requirements of some taxa, particularly inshore dolphins. 	<ul style="list-style-type: none"> Research to support the Great Barrier Reef strategic assessment (PDF - 1324KB) the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area Strategic Assessment 2013 	Adequate	Stable
IN5 The necessary socio-economic information is currently available to address shipping	4	<ul style="list-style-type: none"> Ships that transit the waters of the Great Barrier Reef provide a service to communities adjacent to the Region, and to the national economy, transporting export and import goods as well as cruise ship passengers. An estimated \$38 billion of 	<ul style="list-style-type: none"> Research to support the Great Barrier Reef strategic assessment (PDF - 1324KB) the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Australia's export trade is carried annually through the Region. The economic activity generated by this shipping traffic provides a range of social and economic benefits to catchment communities and beyond.</p> <ul style="list-style-type: none"> Stakeholder consultation undertaken as part of the Strategic Assessment Report (SAR) identified shipping as an issue, highlighting the need for both effective management and effective communication of risks related to shipping and how these are managed. 	<ul style="list-style-type: none"> Strategic Assessment 2013 		
IN6 The necessary Indigenous heritage information is currently available to address shipping	3	<ul style="list-style-type: none"> Difficult to assess, but assume generally adequate. 	<ul style="list-style-type: none"> Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area Strategic Assessment 2013 		
IN7 The necessary historic heritage information is currently available to address shipping	3	<ul style="list-style-type: none"> Difficult to assess, but assume generally adequate. 	<ul style="list-style-type: none"> the Ship Anchorage Management Report in the Great Barrier Reef World Heritage Area 		
IN8 There are additional sources of non-government input (for example volunteers) contributing to address shipping	4	<ul style="list-style-type: none"> Minimal need, given framework within which shipping is regulated, so assume other sources are adequate. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Adequate	Stable
PROCESSES					
PR1 The main stakeholders &/or industry(ies) are effectively engaged in the ongoing management of shipping	3	<ul style="list-style-type: none"> Yes, but suggest merit in better engagement with terminal operators and exporters in order to better schedule ship movements. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Adequate	Stable (-)?
PR2 The local community is effectively engaged in the ongoing management of shipping	3	<ul style="list-style-type: none"> Engaged in relation to anchorages and ports less so specifically for shipping 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Adequate	Stable
PR3 There is a sound governance system in	4	<ul style="list-style-type: none"> Yes, but needs to be properly resourced to stay current and keep pace with, if not anticipate, changing shipping risk 	<ul style="list-style-type: none"> Grech et al. 2013 Strategic Assessment 2013 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
place to address shipping		profiles.	<ul style="list-style-type: none"> In July 2011 as a direct result of the <i>Shen Neng 1</i> grounding and actual increases in ship traffic around the Gladstone region, AMSA extended the mandatory ship reporting system into the southern portion of the Marine Park. 		
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for shipping	3	<ul style="list-style-type: none"> The key regulatory agencies have effective performance monitoring systems in place. From the evidence available GBRMPA does not appear to have a broad understanding of shipping and how it may affect values of the Marine Park. This is partially explained by the fact that GBRMPA is not the primary regulatory agency for shipping. A better understanding of the issues and risks, leading to a clearer, better defined articulation of what GBRMPA may wish to have managed better would likely improve outcomes for demonstrably sustainable shipping in the Great Barrier Reef region, and hence to gauge progress towards the objective(s) for shipping. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Adequate	Stable
PR5 Appropriate training is available to the managing agencies to address shipping	3	<ul style="list-style-type: none"> The key regulatory agencies would appear to have appropriate training schemes in place. GBRMPA staff have participated in various courses to improve knowledge and understanding of shipping. There exists a gap in relation to training in relation to introduced pest prevention measures, monitoring and response. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Uncertain	Stable
PR6 Management of shipping is consistently implemented across the relevant jurisdictions	4	<ul style="list-style-type: none"> Yes, under the tutelage of AMSA and MSQ, with contributions from other applicable agencies such as GBRMPA and Department of Agriculture. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Adequate	Stable
PR7 There are effective processes applied to resolve differing views/ conflicts regarding shipping	4	<ul style="list-style-type: none"> Yes, via the North-East Shipping Management Group. 	<ul style="list-style-type: none"> North-East Shipping Management Group Strategic Assessment 2013 (Post Outlook Report 2009) The consultation process for the Strategic Assessment and the Ports Position Paper is essentially a tool for resolving misunderstandings and potentially conflict resolution, should it arise. The Draft Shipping Position Paper will undergo a similar consultation process. 	Adequate	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with	2	<ul style="list-style-type: none"> Potential impacts on the Great Barrier Reef are considered as part of environmental impact assessment processes. This is 	<ul style="list-style-type: none"> Part IV of the State Development and Public Works Organisation Act 1971 outlines the Environmental Impact Statement process. 	Adequate	Improving

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
shipping are appropriately considered.		<p>often somewhat piecemeal, with assessments occurring via individual port development proposals. It would be better to undertake periodic, umbrella reviews of shipping risks and management in the Great Barrier Reef Region and shipping capacity constraints analyses, and to keep these up-to-date by periodic review, and then to link individual port assessments to these overarching assessments.</p> <ul style="list-style-type: none"> • Coordination for introduced marine pest response is in place but will require further refinement. Limited coordination exists, if at all, with regard to routine monitoring and surveillance. Marine pest excursion risk limitation controls are limited and <i>ad hoc</i>. • Some cumulative and/or synergistic impacts (for example, water quality, introduced pests and turbidity from wake) are not well addressed. 	<ul style="list-style-type: none"> • Strategic Assessment 2013 • Det Norske Veritas, 2011. Assessment of the Risk of Pollution from Marine Oil Spills in Australian Ports and Waters. Final Report to Australian Maritime Safety Authority; Report No PP002916, Rev 4, 21 October 2011 http://www.amsa.gov.au/Marine_Environment_Protection/National_plan/Reports-Fact_Sheets-Brochures/DNVReport.asp • Shipping Position Statement supports collaborative management initiatives to improve the Marine Park's resilience and the long-term outlook for the ecosystem including: • Regular review and updating risk profiles of shipping activity in the Marine Park and adjusting or applying management tools accordingly. • Support the higher safety, construction and maintenance standards of ships operating within the Marine Park through collaboration with the Australian Maritime Safety Authority (AMSA). • Implementing higher operating standards to further reduce the risk to the environment. • Continued monitoring of shipping traffic within the Marine Park. • GBRMPA will collaborate with ports to improve incident response management, ensure incident response plans are best practice and that relevant staff/crew are adequately trained. Stewardship programs will assist with addressing this also. • Strategic Assessment 2013 • Draft Ports Position Statement • GBRMPA report on Zoning' • Cumulative and/or synergistic impacts are expected to be addressed (at least in part) through Ports Position and Shipping Position papers, the North-East Shipping Management Plan and by the Great Barrier Reef Shipping Management Group 		
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make	3	<ul style="list-style-type: none"> • There are a number of information gaps identified in GBRMPA's knowledge of shipping practices. For example, only limited information is available/collated on ship/fauna strikes. Limited information available at present may indicate that little is reported, but may also indicate that incidence is 	<ul style="list-style-type: none"> • Ship anchorage management in the Great Barrier Reef World Heritage Area • Research to support the Great Barrier Reef strategic assessment (PDF - 1324KB) • Strategic Assessment 2013 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
relevant management decisions regarding shipping		uncommon.	<ul style="list-style-type: none"> More relevant to Port issues than Shipping 		
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding shipping	4	<ul style="list-style-type: none"> Studies conducted regularly by Australian and Queensland government agencies, and by ports. These consider economic factors but fewer studies focus upon social factors. GBRMPA notes that it is supportive of further shipping studies that will help identify management measures to reduce risks to the environment from shipping. This includes socio-economic studies. 	<ul style="list-style-type: none"> Economic contribution of the Great Barrier Reef Defining the aesthetic values of the Great Barrier Reef World Heritage Area Research to support the Great Barrier Reef strategic assessment (PDF - 1324KB) Strategic Assessment 2013 	Adequate	Stable
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding shipping	3	<ul style="list-style-type: none"> May be relevant in relation to shipping movements in some very specific nearshore and/or remote locations. 	<ul style="list-style-type: none"> Ship anchorage management in the Great Barrier Reef World Heritage Area Strategic Assessment 2013 	Uncertain	No clear trend
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding shipping	3	<ul style="list-style-type: none"> May be relevant in relation to shipping movements in some specific locations. 	<ul style="list-style-type: none"> Ship anchorage management in the Great Barrier Reef World Heritage Area Research to support the Great Barrier Reef strategic assessment (PDF - 1324KB) 	Uncertain	No clear trend
PR13 Relevant standards are identified and being met regarding shipping	4	<ul style="list-style-type: none"> The relevant standards are those set via IMO processes, including the Associated Protective Measures applying in the Great Barrier Reef as a Particularly Sensitive Sea Area (PSSA). These are regulated in Australia by a range of measures, including Port State Control inspections. Furthermore, many ship charterers apply ship -vetting practices when contracting ships to visit Great Barrier Reef ports. Although relevant standards are being met, there is a need for constant vigilance and also a need to anticipate future risk trends in order to manage pre-emptively. 	<ul style="list-style-type: none"> Through the development of the North-East Shipping Management Plan and as outputs of the Shipping Position paper are developed, existing standards will be reviewed and how to achieve better standards will be examined. http://www.amsa.gov.au/vessels/national-system/standards/ 	Adequate	Stable
PR14 Targets have been established to benchmark management performance for shipping	2	<ul style="list-style-type: none"> Although the objectives of managing to achieve safe shipping within the Great Barrier Reef Region are self-evident, it is difficult to discern where these may have been distinctly articulated as concise targets, including key indicators. 		Uncertain	

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		Suggest that this may need to be rectified if this finding is indeed valid.			
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for shipping	3	<ul style="list-style-type: none"> There is a planned work program developed by the North-East Shipping Management Group. No information is evident regarding any 'planned work program' by GBRMPA in relation to shipping and how it relates to their management objectives for the Marine Park. Nothing significant in this regard is presented in either the GBRMPA Strategic Plan or the AOP, except for review of Cruise Ship Policy. 	<ul style="list-style-type: none"> GBRMPA incident response contingency plans will be undergoing review in 2012-2013 when new position EL1 Incident Response commences. This will ensure consistency with outcomes of National Plan review. Internal incident response procedures may also be updated. Great Barrier Reef Marine Park Authority Strategic Plan 2013 – 2017 Great Barrier Reef Marine Park Authority Annual Operating Plan 2013–2014 RSP anchorage project. DRAFT Shipping Position Statement. Reported by GBRMPA to be undergoing internal consultation - not made available for review. DRAFT GBRMPA Shipping Risk Profile (compliance). Reported by GBRMPA to be undergoing internal consultation – not made available for review. 	Uncertain	No clear trend
OP2 Implementation of management documents and/or programs relevant to shipping have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> Implementation appears sufficient 	<ul style="list-style-type: none"> Strategic Assessment 2013 Investigation of cumulative impacts and strategic management approaches are expected to be addressed through the Strategic Assessment, North-East Shipping Management Plan, Shipping Management Group and Position Statements. 	Uncertain	No clear trend
OP3 The results (in OP1 above) have achieved their stated management objectives for shipping	2	<ul style="list-style-type: none"> Difficult in the absence of clearly articulated and measurable objectives. 	<ul style="list-style-type: none"> AMSA Annual Report Strategic Assessment 2013 GBRMPA works in collaboration with AMSA and MSQ through MOUs and other management agreements and forums such as the Shipping Management Group to monitor performance against management objectives. 	Uncertain	No clear trend
OP4 To date, products or services have been produced in accordance with the stated management objectives	3	<ul style="list-style-type: none"> Implementation appears sufficient, notwithstanding absence of any clear GBRMPA policy, targets or work plan 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Uncertain	No clear trend

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
for shipping					
OP5 Effective knowledge management systems regarding shipping are in place within agencies	3	<ul style="list-style-type: none"> Effective knowledge management system understood to be available within shipping regulatory agencies, but not known in specific case of GBRMPA. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Uncertain	No clear trend
OP6 Effective systems are in place to share knowledge on shipping with the community	2	<ul style="list-style-type: none"> Noting some apparent community disquiet regarding shipping, often misplaced, it may be considered that current systems are inadequate in some regards. For example, the apparent focus of community disquiet about shipping as a threat to the Reef, in relation to the lack of agitation in relation to other issues such as coastal development, crown-of-thorns starfish, and terrestrial run-off, suggest latitude for improvement in knowledge sharing systems. 	<ul style="list-style-type: none"> Strategic Assessment 2013 	Uncertain	No clear trend
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing shipping and moving towards the attainment of the desired outcomes.	4	<ul style="list-style-type: none"> The Region is one of the world's most regulated shipping areas. The GBRMPA, together with AMSA and Maritime Safety Queensland, works closely to protect the marine environment from the potential adverse consequences of shipping operations. Within the Designated Shipping Area, anchoring a ship does not require a permit from the GBRMPA. Maritime Safety Queensland has designated 154 ship anchorages adjacent to some of the ports along the Region's coast. All but 12 are within the Marine Park. Including swing room, the anchorages cover about 1200 square kilometres. They confine the impacts arising from anchoring for these ports, such as disturbance to wildlife, physical damage to benthos, light pollution, waste discharges, introduced marine species, noise effects, user conflict and aesthetic impacts on the seascape. Measures to increase navigational safety and reduce the risk of ship groundings and collisions have included: compulsory pilotage, recommended pilotage, an automatic identification system and mandatory vessel reporting and monitoring (REEFVTS). These management arrangements mean there have been few shipping incidents relative to the large number 	<ul style="list-style-type: none"> Strategic Assessment 2013 GBRMPA is aiming to examine/address through the North-East Shipping Management Plan, Strategic Assessment, Position Statements 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>of ship movements in the Region. Nevertheless, it is critical to ensure that these processes and their capacity keep in step with forecast increases in shipping activities.</p> <ul style="list-style-type: none"> Invasive marine species risks from ships, particularly in relation to biofouling, are not effectively managed. The capacity of key Great Barrier Reef channels and passages (for example Hydrographers Passage) will possibly be limiting factors in relation to peak shipping capacity of the Great Barrier Reef Region, particularly in relation to need to 'surge' ships to sea in narrow timeframes (for example, period of cyclone warning). These issues and potential limitations need to be recognised and effectively managed. 			
OC2 The outputs relating to shipping are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	4	<ul style="list-style-type: none"> Since the introduction of Australia's Great Barrier Reef and Torres Strait Vessel Traffic Service (REEFVTS) in 2004, the average number of groundings in the Great Barrier Reef and Torres Strait per year has declined from 1.42 per 10,000 transits to 0.15 per 10,000 transits, a reduction of 89 per cent. This reduction in groundings is attributed to REEFVTS providing timely and accurate information to assist onboard decision making by the bridge team. The Zoning Plan regulates where ships can transit. This management tool, in combination with the REEFVTS contributes to ensuring the values of the Great Barrier Reef are protected. Concur with above, but need to ensure that these and other management processes and their functional capacities keep in step with forecast shipping increases. 	<ul style="list-style-type: none"> Strategic Assessment 2013 Will be examined/addressed through the North-East Shipping Management Plan, Strategic Assessment, Position Statements 	Adequate	Stable
OC3 the outputs (refer OP1 and 3) for shipping are reducing the major risks and the threats to the Great Barrier Reef	4	<ul style="list-style-type: none"> The current Great Barrier Reef and Torres Strait vessel traffic service is considered effective at preventing shipping incidents — almost 11,000 ship movements were monitored in 2011–12 without significant incident.⁴⁵ Over the last five years, the Australian Maritime Safety Authority (AMSA) has undertaken numerous initiatives across its functions, which were aimed at improving the safety of ship operations in the region in and around the Great Barrier Reef. These changes cover a range of operational areas, such as the oversight of ship and cargo safety, improvements to aids to navigation and provision of much greater levels of response 	<ul style="list-style-type: none"> Strategic Assessment 2013 Will be examined/addressed through the North-East Shipping Management Plan, Strategic Assessment, Position Statements 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>equipment and consumables at key regional storage facilities in relation to possible pollution of the sea. AMSA has also commissioned analyses of shipping industry risks in the region to identify growth trends in terms of vessel traffic levels, major routes, ship types and sizes and risk profiles over time, with the aim of supporting strategic decision making in relation to increases and relocation of resources in the area, so as to improve the levels and effectiveness of the oversight of shipping activity and to promote higher safety levels in the industry. These initiatives were in response to a range of factors, including trends in shipping industry growth, changes in risk profiles of ships and routes taken, consideration of known industry risk issues and specific developments in international safety conventions under the IMO.</p> <ul style="list-style-type: none"> Although, current measures are effective there is a constant need to ensure that these processes and their capacities keep in step with forecast shipping increases. 			
OC4 Use of the Great Barrier Reef relating to shipping is demonstrably environmentally sustainable	4	<ul style="list-style-type: none"> This is agreed, at current and short to mid-term forecast levels of shipping. The capacity of key Great Barrier Reef channels and passages (for example, Hydrographers Passage) will possibly be limiting factors in relation to peak shipping capacity of the Great Barrier Reef Region, particularly in relation to need to 'surge' ships to sea in narrow timeframes. Turbidity and wake effects in shallow/narrow passages and channels may also be a limiting factor, for which more research and evaluation is required. 	<ul style="list-style-type: none"> Strategic Assessment 2013 This is being examined through the Strategic Assessment, Shipping Management Group and North-East Shipping Management Plan 	Adequate	Stable
OC5 Use of the Great Barrier Reef relating to shipping is demonstrably economically sustainable	4	<ul style="list-style-type: none"> The value of shipping to regional and national economies is well documented. Earnings would seem to exceed costs, hence suggesting economic sustainability. 	<ul style="list-style-type: none"> Strategic Assessment 2013 This will be examined through the development of the Shipping Position Statement and associated outputs. 	Adequate	Stable
OC6 Use of the Great Barrier Reef relating to shipping is demonstrably socially sustainable enhancing understanding	4	<ul style="list-style-type: none"> The majority of coastal communities and those of the Queensland interior are almost totally reliant on ports and shipping for the import/export of goods and services. The Zoning Plan provides for a multiple-use Marine Park that 	<ul style="list-style-type: none"> Strategic Assessment 2013 Due to predicted increase in shipping, risks associated with user-conflict may arise. This is being examined through the Strategic Assessment and the Anchorage study. 	Adequate	Stable

Component of management of shipping	Rating	Justification	Evidence/sources	Confidence	Trend
and/or enjoyment		allows for a range of both commercial and recreational activities for the benefit and enjoyment of the community. While port expansions (and associated increases in shipping) may pose a threat to some of these activities, GBRMPA has legislative requirements to assess and mitigate threats and risks to all values of the Marine Park.			
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address shipping	4	<ul style="list-style-type: none"> The need for community engagement re shipping, compared with management of other aspects of the Great Barrier Reef Region, is considered to be modest. Nevertheless, effective partnerships are valuable and would appear to be being nurtured by the North-East Shipping Management Group. 	<ul style="list-style-type: none"> Strategic Assessment 2013 Effective partnerships are established with AMSA and MSQ, the key shipping stakeholders. Shipping Management Group and its working groups provide for project/issue level consultation and engagement between key stakeholders. AMSA has initiated community consultation in the review of draft plans and documents concerning Great Barrier Reef. In addition to a range of partnerships and programs that the GBRMPA undertakes with local communities and other stakeholders (which cover a range of management issues), the Strategic Assessment is expected to further benefit these partnerships through its consultation and communication processes. 	Adequate	Stable

Table 29 Calculation of grades for traditional use of marine resources

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to traditional use of marine resources are understood by managers	4	<ul style="list-style-type: none"> Information about the values relevant to TUMR includes biodiversity information about dugong, turtles, and other marine species. Understanding these values has been articulated in the Strategic Assessment, and the Biodiversity Conservation Strategy Six Traditional Use of Marine Resources Agreements (TUMRAs), and one Indigenous Land Use Agreement (ILUA) apply to approximately 13 per cent of the Great Barrier Reef Marine Park. Key components of a TUMRA include the sustainable take of marine resources, and their role in compliance and monitoring. 	<ul style="list-style-type: none"> GBRMPA Strategic Plan – values of the GBR http://www.gbrmpa.gov.au/our-partners/traditional-owners Great Barrier Reef Strategic Assessment Chapter 3, 4, 5 	Adequate	Improving
CO2 The current condition and trend of values relevant traditional use of marine resources are known by managers	4	<ul style="list-style-type: none"> Understanding the condition and trend of species such as dugong and turtles has improved with vulnerability assessments undertaken for dugong and marine turtles. A population model for northern Great Barrier Reef green turtles was developed in 2011–12 to assess the impact of management scenarios. This population is under pressure from a diverse array of human activities. There is evidence to suggest it is in the early stages of decline and proactive management is needed to stabilise this globally significant population 	<ul style="list-style-type: none"> Chapter 4-7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified at http://www.reefhaveyoursay.com.au/draft-reports and associated demonstration cases and technical reports http://www.reefhaveyoursay.com.au/draft-reports and stakeholder engagement report Appendix 5 - Traditional Owner and Stakeholder Engagement - Report on Workshops and Surveys State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Improving
CO3 Impacts (direct, indirect and cumulative) associated with traditional use of marine	3	<ul style="list-style-type: none"> Any impacts attributable to traditional use of marine resources undertaken according to 	<ul style="list-style-type: none"> See draft Great Barrier Reef Strategic Assessment Chapter 3, 4, 5 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
resources are understood by managers.		<p>customs and traditions are considered to have only minor or localised effects.</p> <ul style="list-style-type: none"> Some direct impacts (such as conflicting use, disturbance to cultural sites) are known to the GBRMPA and managed through existing planning tools. However, given a general lack of cultural heritage values along the Great Barrier Reef (including a spatial understanding) some direct and indirect impacts may occur unbeknown to the GBRMPA. Impacts such as coastal development, habitat degradation, boat strikes, pollution, netting and sedimentation as well as legacy impacts have affected Traditional Owners' use of the marine environment. Traditional Owners are now working in partnership with the GBRMPA to conserve and protect species and ecosystems critical to the health of people, culture and country, including through development and implementation of Traditional Use of Marine Resources Agreements. 	<ul style="list-style-type: none"> GBRMPA website: http://www.gbrmpa.gov.au/outlook-for-the-reef/Managing-multiple-uses/traditional-use 		
CO4 The broader (national and international) level influences relevant to traditional use of marine resources are understood by managers.	4	<ul style="list-style-type: none"> <i>Native Title Act 1993</i> recognises and protects native title and includes a mechanism for determining claims to native title. <i>Native Title (Queensland) Act 1993</i> Convention concerning the Protection of the World Cultural and Natural Heritage, 1972 Convention on Biological Diversity, 1992 There have been some recent examples of disputes in multiple-use areas where the activities of tourism operators and visitors conflicts with Traditional Owner cultural use of marine resources in the sea country areas where they express their native title rights. With increased development in remote areas and changes to infrastructure, there is potential for the level and type of traditional use along the coast to change. 	<ul style="list-style-type: none"> Chapter 4-7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified at http://www.reefhaveyoursay.com.au/draft-reports and associated demonstration cases and technical reports http://www.reefhaveyoursay.com.au/draft-reports and stakeholder engagement report Appendix 5 - Traditional Owner and Stakeholder Engagement - Report on Workshops and Surveys State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 Mission Report --- Reactive Monitoring Mission to Great Barrier Reef (Australia), 6 to 14 March 2012 State of the Environment Report 2011 www.environment.gov.au/soe/2011/report/marine-environment 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> The role of Indigenous parties in the management of World Heritage Areas is also clearly articulated. 			
CO5 The stakeholders relevant to traditional use of marine resources are well known by managers.	4	<ul style="list-style-type: none"> A Traditional Owner from the Great Barrier Reef Region has been a member of the Great Barrier Reef Marine Park Authority Board for most of the time since late 1996 contributing to the setting of policy and management direction for the Great Barrier Reef Marine Park. The GBRMPA fosters Indigenous community engagement through the Indigenous Reef Advisory Committee (IRAC), Science and Management Workshops for Traditional Owners, compliance training, monitoring and Traditional ecological knowledge projects. The GBRMPA has an Indigenous Partnerships Group that has established good relationships with Aboriginal and Torres Strait Islander peoples. There are more than 70 Aboriginal and Torres Strait Islander Traditional Owner groups that have long continuing relationships with the Great Barrier Reef region and its natural resources. The GBRMPA maintains contact and working relationships with 80 per cent of the Great Barrier Reef Traditional Owner groups. 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/about-us/reef-advisory-committee 	Adequate	Improving
PLANNING					
PL1 There is a planning system in place that effectively addresses traditional use of marine resources	4	<ul style="list-style-type: none"> The Reef Rescue Land and Sea Country Indigenous Partnership Program (the Program) includes a program for the development and support of TUMRAs. TUMRAs provide the basis for the traditional use of marine resources. Six TUMRAs and one ILUA are currently in place. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving
PL2 The planning system for traditional use of marine resources addresses the major	4	<ul style="list-style-type: none"> The Program recognizes that establishing effective and meaningful partnership with 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
factors influencing the Great Barrier Reef Region's values.		<p>Traditional Owners is essential in order to protect heritage and cultural values, conserve biodiversity, and contribute to the resilience of the Great Barrier Reef.</p> <ul style="list-style-type: none"> The TUMRAs address the major factors relevant to traditional use of marine resources. 	Sea Country Partnerships Programme.		
PL3 Actions for implementation regarding traditional use of marine resources are clearly identified within the plan	3	<ul style="list-style-type: none"> Actions for implementation are included in each TUMRA, and the generic guide for the development of the TUMRAs provides for the full range of actions to be considered. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving
PL4 Clear, measurable and appropriate objectives for management of traditional use of marine resources have been documented	4	<ul style="list-style-type: none"> The Generic TUMRAs provide clear objectives for the traditional use of marine resources. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to traditional use of marine resources	3	<ul style="list-style-type: none"> Monitoring of traditional harvest and of research and species management are included in the TUMRAs. 	<ul style="list-style-type: none"> Generic TUMRA Dharumbal Traditional Use of Marine Resources Agreement Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme MERI Plan Evaluation plan 	Adequate	Improving
PL6 The main stakeholders and/or the local community are effectively engaged in planning to address traditional use of marine resources	4	<ul style="list-style-type: none"> The traditional owners are fully engaged in the development of TUMRAs. 	<ul style="list-style-type: none"> GBRMPA workshop discussions Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
PL7 Sufficient policy currently exists to effectively address traditional use of marine resources	3	<ul style="list-style-type: none"> Policy and guidelines for the development of TUMRAs, as well as how to access funding for the development of TUMRAs are in place. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving
PL8 There is consistency across jurisdictions when planning for traditional use of marine resources	4	<ul style="list-style-type: none"> TUMRAs are jointly signed by the Australian Government (through the GBRMPA) and the Queensland Government (through QPWS). 	<ul style="list-style-type: none"> GBRMPA workshop discussions Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Stable
PL9 Plans relevant to traditional use of marine resources provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	4	<ul style="list-style-type: none"> The TUMRAs identify the number of species that may be taken within the clearly identified sea country boundaries. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address traditional use of marine resources	4	<ul style="list-style-type: none"> Funding for the Reef Rescue Land and Sea Country Indigenous Partnership Program has been extended to 2018 (\$1.7M for TUMRAs) 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Stable
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address traditional use of marine resources	3	<ul style="list-style-type: none"> Competing resources have resulted in less contact than anticipated in the last financial year (5-6 months) Caring for Country funding will continue to support staff in this area 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address traditional use of marine resources	3	<ul style="list-style-type: none"> The GBRMPA requires all Indigenous Partnerships positions be identified, with the majority of staff Traditional Owners of the Great Barrier Reef or Indigenous 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address traditional use of marine resources	3	<ul style="list-style-type: none"> Reasonable biophysical information on dugong and turtle populations, Compliance improves the understanding of illegal take, poaching, etc. 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	Adequate	Improving
IN5 The necessary socio-economic information is currently available to address traditional use of marine resources	2		<ul style="list-style-type: none"> GBRMPA workshop discussions 	Limited	Improving
IN6 The necessary Indigenous heritage information is currently available to address traditional use of marine resources	3	<ul style="list-style-type: none"> The information required for the development of TUMRAs is held with the Traditional Owners. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
IN7 The necessary historic heritage information is currently available to address traditional use of marine resources	NA				
IN8 There are additional sources of non-government input (for example volunteers) contributing to address traditional use of marine resources	NA				
PROCESSES					
PR1 The main stakeholders &/or industry(ies) are effectively engaged in the ongoing management of traditional use of marine resources	4	<ul style="list-style-type: none"> The GBRMPA is engaged with over 80 per cent of the Traditional Owner Groups in the Great Barrier Reef. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme.. 	Adequate	Improving
PR2 The local community is effectively engaged in the ongoing management of traditional use of marine resources	2	<ul style="list-style-type: none"> Broader community not as involved with TUMRAs as Traditional Owners 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and 	Limited	Stable

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
			Sea Country Partnerships Programme		
PR3 There is a sound governance system in place to address traditional use of marine resources	3	<ul style="list-style-type: none"> The governance framework for traditional use of marine resources is through the development of a TUMRA that is jointly agreed to by the Traditional Owners, the GBRMPA and Queensland Government 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for traditional use of marine resources	3	<ul style="list-style-type: none"> There is good performance monitoring of the Program. Performance monitoring of the TUMRAs also occurs but is not publically available. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving
PR5 Appropriate training is available to the managing agencies to address traditional use of marine resources	2		<ul style="list-style-type: none"> GBRMPA workshop discussions 	Limited	Stable
PR6 Management of traditional use of marine resources is consistently implemented across the relevant jurisdictions	4	<ul style="list-style-type: none"> TUMRAs have a legislative base and is applicable to all Traditional Owner groups with joint management arrangements (with GBRMPA and the Queensland Government) 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Stable
PR7 There are effective processes applied to resolve differing views/ conflicts regarding traditional use of marine resources	3	<ul style="list-style-type: none"> The generic TURMA includes a section on dispute resolution, 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with traditional use of marine resources are appropriately considered.	4	<ul style="list-style-type: none"> Impact of TUMRAs on the Great Barrier Reef are considered to be low 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme. 	Adequate	Improving
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding traditional use of marine resources	4	<ul style="list-style-type: none"> Biophysical research and monitoring about turtle and dugong numbers are included in making decisions about the level of take included in TUMRAs. In some cases, a ban on any take is included due to concerns about population numbers 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding traditional use of marine resources	NA				
PR11 The best available Indigenous heritage	4	<ul style="list-style-type: none"> The Traditional Owners use their knowledge to 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
information is applied appropriately to make relevant management decisions regarding traditional use of marine resources		make decisions about TUMRAs. While there may be intergenerational knowledge loss, the best information available is used	Sea Country Partnerships Programme		
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding traditional use of marine resources	NA				
PR13 Relevant standards are identified and being met regarding traditional use of marine resources	3	<ul style="list-style-type: none"> Standards are identified within the TUMRAs 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
PR14 Targets have been established to benchmark management performance for traditional use of marine resources	3	<ul style="list-style-type: none"> Management performance targets are included in the TUMRAs 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for traditional use of marine resources	4	<ul style="list-style-type: none"> Under the Reef Rescue program (2008-2009), the TUMRA program has been successful in meeting its scheduled milestones. Since the implementation of the Reef Rescue Program, the GBRMPA has expanded its TUMRA program from four formal Traditional Owner management agreements (four TUMRAs) to seven agreements (six TUMRAs/one Indigenous Land Use Agreement (ILUA)). 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to traditional use of marine resources have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> While TUMRA agreements have been finalised, implementation plans have not 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OP3 The results (in OP1 above) have achieved their stated management objectives for traditional use of marine resources	3	<ul style="list-style-type: none"> The stated management objectives of the program have been met. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OP4 To date, products or services have been produced in accordance with the stated management objectives for traditional use of marine resources	4	<ul style="list-style-type: none"> Under the Reef Rescue program, the TUMRA program has been successful in meeting its scheduled milestones. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
OP5 Effective knowledge management systems regarding traditional use of marine resources are in place within agencies	2	<ul style="list-style-type: none"> Knowledge about TUMRAs, and the levels of take, etc. have not been made available. 		Adequate	Improving
OP6 Effective systems are in place to share knowledge on traditional use of marine resources with the community	3	<ul style="list-style-type: none"> TUMRAs include a section on communication and a number of Traditional Owner groups provide regular newsletters about activities. Story Place on the GBRMPA web site 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing traditional use of marine resources and moving towards the attainment of the desired outcomes.	4	<ul style="list-style-type: none"> Under the program, the GBRMPA is moving towards more TUMRAs across the Great Barrier Reef. This provides better management of sea country and Indigenous cultural and heritage values by Traditional Owners, with sea country management regarding traditional use of marine resources underpinned by cultural authority 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OC2 The outputs relating to traditional use of marine resources are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	4	<ul style="list-style-type: none"> TUMRAs document the agreement about the level of take of marine resources, and the reporting and monitoring activities associated with the take. This ensures that the traditional take of marine resources are within limits that protect the values of the Reef. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OC3 the outputs (refer OP1 and 3) for traditional use of marine resources are reducing the major risks and the threats to the Great Barrier Reef	3	<ul style="list-style-type: none"> Outputs of TUMRAs restrict the traditional take of marine resources, reducing the impacts of turtle and dugong decline. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to traditional use of marine resources is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> The take of marine species in TUMRAs is considered to be of low impact, and environmentally sustainable. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving
OC5 Use of the Great Barrier Reef relating to traditional use of marine resources is demonstrably economically sustainable	NA				
OC6 Use of the Great Barrier Reef relating to traditional use of marine resources is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> TUMRAs recognise the responsibilities and management roles for country of Traditional Owners, and enables agreed access to traditional foods on country meeting their customary responsibilities. 	<ul style="list-style-type: none"> See generic statement by saltwater Traditional Owners. 	Adequate	Improving

Component of management of traditional use of marine resources	Rating	Justification	Evidence/sources	Confidence	Trend
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address traditional use of marine resources	4	<ul style="list-style-type: none"> The GBRMPA engages with over 80 per cent of the Traditional Owner groups in the Great Barrier Reef. 	<ul style="list-style-type: none"> Australian Government Reef Rescue Indigenous Land and Sea Country Partnerships Programme 	Adequate	Improving

Table 30 Calculation of grades for climate change

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to climate change are understood by managers	4	<ul style="list-style-type: none"> • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 documents improvements in knowledge and understanding resulting from implementation of the previous climate change action plan. • Managers are aware that the Great Barrier Reef ecosystem is very vulnerable to most changes climate change will bring. Mass coral bleaching events, caused by sustained high water temperatures, have begun to increase in frequency and severity. Corals and other calcifying organisms also expected to be seriously affected by ocean acidification driven by increased levels of CO2 entering the oceans from the atmosphere. • Managers understand that all elements of the Reef ecosystem are exposed to, and at risk from, the impacts of climate change, the effects of which are already being seen. Flow-on impacts for communities and industries are expected. • Managers understand that the future of many key species is under threat (for example, the sex ratio of turtle hatchlings is temperature dependent, and warming conditions could see a significant bias toward females in future populations). • Managers know that human communities and Great Barrier Reef-dependent industries are affected by the impacts of climate change on the Reef (for example, commercially important species, such as many fish and prawns rely on corals, seagrasses or mangroves which are projected to decline under climate change, for some part of their life cycle). • Managers have documented that average coral cover for the whole Great Barrier Reef is declining; decline in seagrass cover is causing nutritional stress for many turtles and dugong (this is in the aftermath of extreme weather (cyclones and floods) 2010-2011). • GBRMPA has implemented the Great Barrier Reef Climate 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Chapters 5.2.2 and 6.4.1 • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 • Australia's Biodiversity and Climate Change http://climatechange.gov.au/climate-change/adapting-climate-change/australia-per-centE2-per-cent80-per-cent99s-biodiversity-and-climate-change • Implications of climate change for Australia's World Heritage properties - http://www.climatechange.gov.au/implications-climate-change-australias-world-heritage-properties-preliminary-assessment 	adequate	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Change Action Plan 2007 – 2012 and is now implementing the Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017. Both activities involve working with a range of partners to build the resilience of the Great Barrier Reef so it can better withstand the impacts of climate change.</p> <ul style="list-style-type: none"> Managers are aware that as the Great Barrier Reef remains one of the healthiest coral reef ecosystems in the world it will probably cope better than most with climate change; but the outlook remains 'poor'. 			
CO2 The current condition and trend of values relevant to climate change are known by managers	3	<ul style="list-style-type: none"> The sheer scale of the ecosystem means monitoring has focused on a few key habitats and species or groups of species many of which are likely to be affected by climate change. Monitoring has generally focused on those that are iconic (such as coral reefs, seabirds), commercially important (such as seagrass meadows, coral trout) or threatened (such as dugongs, marine turtles). Long-term monitoring programs exist for some species (for example marine turtles, dugong, seagrass). AIMS long-term monitoring program has provided consistent data on coral cover, coral bleaching, crown-of-thorns starfish numbers, major fish species and benthic organisms. Knowledge gaps remain for many groups and species (for example population estimates for shorebirds). The Great Barrier Reef Strategic Assessment report indicates that confidence in knowledge of condition and trend of values was generally limited with only about a quarter of the assessments based on adequate high quality evidence and, on average, about a quarter of the assessments based on very limited evidence. Evidence of condition was generally stronger than the evidence for trend (although the reverse is true of terrestrial habitats that support the Reef). Draft Great Barrier Reef Coastal Zone Strategic Assessment Report indicates a number of knowledge gaps in long-term monitoring of MNES in coastal and estuarine systems and knowledge of impacts of climate change on coastal systems and species. Vulnerability assessments completed for climate change Long-term monitoring programs are critical to building this 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapters 7 Climate change vulnerability assessment 2007 Great Barrier Reef Biodiversity Strategy & Vulnerability Assessments De'ath et al 2012 The 27-year decline of coral cover on the Great Barrier Reef and its causes <i>PNAS</i> www.pnas.org/cgi/doi/10.1073/pnas.1208909109 Draft Great Barrier Reef Coastal Zone Strategic Assessment Report Chapters 5.6 Informing the Outlook for Great Barrier Reef Coastal Ecosystems 	limited	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>understanding for example SELTMP, LTMP, Terry Hughes coral recruit study, Eye on the Reef, etc.</p>			
<p>CO3 Impacts (direct, indirect and cumulative) associated with climate change are understood by managers.</p>	<p>4</p>	<ul style="list-style-type: none"> • International Coral Reef Symposium (2012) consensus statement on Climate Change and Coral Reefs highlighted the grave threat that climate change poses to all coral reefs and called for government action to address the causes of climate change and improve local protection of coral reefs. • Climate change recognised as one of the greatest threats to the long-term health of the Great Barrier Reef. Climate change impacts may include: <ul style="list-style-type: none"> ○ increased frequency and intensity of severe weather events such as storms and cyclones ○ ocean acidification ○ rising sea temperature ○ sea level rise ○ changing ocean currents • Climate change vulnerability assessment provides comprehensive assessment of likely direct and indirect impacts • A number of projects being undertaken in connection with the Queensland Wetlands Program are utilising the methodologies and outcomes of the work that produced the Informing the Outlook for Great Barrier Reef Coastal Ecosystems report and are applying it more broadly in Queensland, including a Wetlands Connectivity Project, development of a Stressor Climate Change model and a Basin Assessment Framework. • Although climate change is a global and national issue, the Great Barrier Reef is recognised as vulnerable at a local and regional level. • Mass coral bleaching in the summer of 1998 was recognised as the first impacts of climate change, as distinct from signs of limited bleaching in coral cores dating back to the 1970s. • Reef-wide mass coral bleaching events in 1998 and 2002 affected 50 to 60 per cent of the Great Barrier Reef reefs respectively, with up to 5 per cent of reefs suffering serious damage in both events. • Managers accept the scientific consensus (>98 per cent certainty) that observed and projected climate change is due to human activities (IPCC 4th Assessment Report) 	<ul style="list-style-type: none"> • International Coral Reef Symposium (2012) consensus statement on Climate Change and Coral Reefs http://www.icrs2012.com/Consensus_Statement.htm • Great Barrier Reef Climate Change Vulnerability Assessment - http://www.gbrmpa.gov.au/outlook-for-the-reef/climate-change/how-climate-change-can-affect-the-reef/great-barrier-reef-vulnerability-assessment • Scientific Information Needs for Management of the Great Barrier Reef Marine Park 2011-2014. (http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/science-and-research/scientific-information-needs). • Great Barrier Reef Climate Change Action Plan 2007 – 2012 - http://elibrary.gbrmpa.gov.au/jspui/handle/11017/198 • Informing the Outlook for Great Barrier Reef Coastal Ecosystems (http://hdl.handle.net/11017/822) • Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop (http://hdl.handle.net/11017/522) 	<p>adequate</p>	<p>stable</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • The cumulative impacts of extreme weather, increased sea temperatures, flooding and intense storms are recognised by managers as having caused significant damage over the last decade. Four category 5 cyclones have affected the Great Barrier Reef since 2000 (compared to none of this category in the 20th century). • Consequential and cumulative impacts of climate change are becoming better understood. • Managers recognise that there are likely to be important interactions among pressures like increased ocean temperature and ocean acidification and this has implications for the overall effect on species and systems within the Great Barrier Reef. As science progresses more information is becoming available. GBRMPA is closely connected with researchers working in this area, for example at AIMS, UQ and JCU. • Regional impacts from climate change recognised and monitored include near-complete nesting failure at key seabird nesting cays during 2002 and 2005; and the 2006 bleaching confined to the southern Great Barrier Reef, with 40 per cent coral mortality at some locations. • Tourism operators have workshopped risks and adaptation options to address threats including increasing sea temperatures, sea level rise, ocean acidification, increasing storm intensity, and changes to freshwater inputs, currents and connectivity. • MoU with SEWPaC provides for cumulative impact assessment if action is triggered under the EPBC Act • Climate Change vulnerability and adaptation options explored by trawl industry, QDAFF and GBRMPA. Also Marine Aquarium Fishers and coral collectors explored supply chain analysis and the vulnerability of fishing. 			
CO4 The broader (national and international) level influences relevant to climate change are understood by managers.	4	<ul style="list-style-type: none"> • Draft Strategic Assessment Reports make it clear that managers understand the international and national level influences on climate change relevant to the Great Barrier Reef. • IPCC Fifth Assessment Working Group report sets out current state of knowledge of physical science basis of climate change but awareness and understanding of managers is mixed. • Joint GBRMPA/CSIRO project focused on providing relevant 	<ul style="list-style-type: none"> • 2013 Climate Adaptation Outlook: A Proposed National Adaptation Assessment Framework (http://www.climatechange.gov.au/climate-change/adapting-climate-change/climate-adaptation-outlook) • Adapting to Climate Change in Australia – An Australian Government Position Paper 	limited	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>information on climate change to managers</p> <ul style="list-style-type: none"> • Within the uncertainties around climate change predictions, there is information available on climate change impacts for Australia and for each state and territory, an indication of potential impacts and costs to our industries, environment, people and infrastructure. • AIMS has provided Great Barrier Reef scale projections for climate but assessment of likely environmental, social and economic impacts at this scale is limited. • Knowledge is focused more on adaptation rather than mitigation • National policy on climate change response is changing and not fully detailed. Queensland Government policy has also changed over the last few years and implications of related changes to State Planning Policy are still being played out. Overall, a clear policy position and consequences for policy settings around climate change mitigation is lacking. 	<p>(http://www.climatechange.gov.au/climate-change/publications/adapting-climate-change-australia per centE2 per cent80 per cent94-australian-government-position-paper)</p> <ul style="list-style-type: none"> • CSIRO and BoM State of the Climate 2012 • Australian Academy of Science report The Science of Climate Change: Questions and Answers • Bureau of Meteorology • Intergovernmental Panel on Climate Change (IPCC) • Joint Science Academies • National Aeronautics and Space Administration (NASA) • Potsdam Institute for Climate Impact Research • The Royal Society • CSIRO climate change website 		
CO5 The stakeholders relevant to climate change are well known by managers.	4	<ul style="list-style-type: none"> • A range of stakeholders for whom climate change needs to be an important consideration in relation to their relationship with the Great Barrier Reef are being engaged in a range of planning, education and stewardship activities. Climate change mitigation and adaptation, and support to Reef resilience are strong focuses within this work. • Great Barrier Reef Marine Park Authority community surveys show broad level of awareness of climate change issues. • Tourism operators have workshopped risks and adaptation options to address threats including: increasing sea temperatures, sea level rise, ocean acidification, increasing storm intensity, and changes to freshwater inputs, currents and connectivity. • Local Marine Advisory Committees provide contact with local stakeholders. • The GBRMPA works to increase activities around climate change with Traditional Owners through the TUMRA process. • The 2013 SELMTP results indicate there is wide concern about climate change in relation to the Great Barrier Reef. 	<ul style="list-style-type: none"> • Vulnerability Assessment • Climate Change Action Plan • Marine operators (GBRMPA) Marine Tourism climate change Action Group & Strategy. • Outcomes from QCCC & TQ workshop on climate change risks and adaptation • MoU between GBRMPA and SEWPaC. • Great Barrier Reef Climate Change Action Plan 2007 – 2012 (http://hdl.handle.net/11017/198) • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 • Reef Guardians program - fishers, farmers, graziers, schools, councils • Eye on the Reef program - tourism, QPWS, public 	adequate	stable
PLANNING					

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
PL1 There is a planning system in place that effectively addresses climate change	2	<ul style="list-style-type: none"> • There are an extensive set of planning and policy direction statements at a national level but the current Department of Environment Climate Change website notes that "Some of the content on this page is no longer current. The climatechange.gov.au website is being revised, and content will be amended. New website content will be available soon." So there is a level of uncertainty around current planning to address climate change at the national level. • Similarly, there is a lack of clarity around planning at the Queensland Government level, especially given the recent repeal of State Planning Policies for the Coastal Zone. Relevant provisions of the Overarching State Planning Policy lack the specificity of the individual State Planning Policies that have been rescinded. • The Australian Government's position paper, Adapting to Climate Change in Australia, recognises the coastal zone as a priority area for adaptation action. Coastal adaptation is also recognised as a national priority in the work of COAG's Select Council on Climate Change. • Note the proposed repeal of carbon pricing under the <i>Clean Energy Bill 2011</i> and introduction of the Direct Action Plan 29 September 2013 • At the level of the Great Barrier Reef Marine Park, there are extensive planning programs in place in relation to climate change – primarily the Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 	<ul style="list-style-type: none"> • Commonwealth Government Climate Change - http://www.climatechange.gov.au/climate-change • Queensland Government State Planning Policy - http://www.dsdp.qld.gov.au/about-planning/state-planning-policy.html • Australian climate change science: a national framework http://climatechange.gov.au/climate-change/climate-science/australian-climate-change-science/australian-climate-change-science-6 • National Climate Change Adaptation Framework http://climatechange.gov.au/climate-change/adapting-climate-change/national-climate-change-adaptation-framework/national-climate • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 	limited	declining
PL2 The planning system for climate change addresses the major factors influencing the Great Barrier Reef Region's values.	2	<ul style="list-style-type: none"> • The Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 aims to address major pressures and drivers within the local and regional framework for action. • Planning systems address individual threats but not composite or cumulative risks. • Issues of scales and connectivity are not comprehensively understood or addressed in planning systems. • Addressing major factors influencing the Great Barrier Reef requires action at a national and global scale. While there are an extensive set of planning and policy direction statements at a national level, the current Department of Environment Climate Change website notes that "Some of the content on this page is 	<ul style="list-style-type: none"> • Commonwealth Government Climate Change - http://www.climatechange.gov.au/climate-change • Queensland Government State Planning Policy - http://www.dsdp.qld.gov.au/about-planning/state-planning-policy.html • Australian climate change science: a national framework http://climatechange.gov.au/climate-change/climate-science/australian-climate-change-science/australian-climate-change-science-6 • National Climate Change Adaptation Framework http://climatechange.gov.au/climate-change/adapting-climate-change/national-climate-change-adaptation- 	adequate	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>no longer current. The climatechange.gov.au website is being revised, and content will be amended. New website content will be available soon." So there is a level of uncertainty around current planning to address climate change at the national level.</p> <ul style="list-style-type: none"> • Similarly, there is a lack of clarity around planning at the Queensland Government level, especially given the recent repeal of State Planning Policies for the Coastal Zone. Relevant provisions of the Overarching State Planning Policy lack the specificity of the individual State Planning Policies that have been rescinded. • Consensus on action at a global level is proving hard to obtain and this is impeding planning that can effectively address impacts of climate change. • Very few policies have been amended to include consideration of climate change in regular decision making processes. 	<p>framework/national-climate</p> <ul style="list-style-type: none"> • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 		
<p>PL3 Actions for implementation regarding climate change are clearly identified within the plan</p>	<p>2</p>	<ul style="list-style-type: none"> • National: Between 2007 and 2013 the Australian Government invested \$129 million in the National Climate Change Adaptation Program which is helping Australians to better understand and manage risks linked to the carbon pollution already in our atmosphere and to take advantage of potential opportunities. • Regional: The Climate Change Adaptation Strategy and Action Plan 2012-17: is the guiding strategy and plan for action to address Climate Change in the Great Barrier Reef. • Many actions specified within the Climate Change Adaptation Strategy and Action Plan 2012-17 are still developmental (identify monitoring needs, develop tools, develop frameworks ,etc.) rather than at the stage of implementing these tools and frameworks. • Consideration of climate change is now a regular feature of management plans and strategies developed by GBRMPA and is required to be considered in any EIM processes and associated permit requirements. • None of the 2013 Queensland National Park Management Statements for islands and adjacent state waters in the Great Barrier Reef Region mention climate change as a threat or an issue to be managed. • Uncertainty around climate change planning at the National and State level and cancellation of existing planning instruments 	<ul style="list-style-type: none"> • GBRMPA Environmental Impact Management Policy 	<p>limited</p>	<p>declining</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		means that specific actions to address climate change are less certain.			
PL4 Clear, measurable and appropriate objectives for management of climate change have been documented	2	<ul style="list-style-type: none"> The Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 contains both objectives and targets but many objectives are at a high level. The Biodiversity Conservation Strategy also contains targets around actions relating to management of climate change related issues. There are an extensive set of planning and policy direction statements at a national level that contain high level objectives regards climate change responses but the current Department of Environment Climate Change website note that "Some of the content on this page is no longer current. The climatechange.gov.au website is being revised, and content will be amended. New website content will be available soon." So there is a level of uncertainty around current planning to address climate change at the national level. Similarly, there is a lack of clarity around planning and objectives at the Queensland Government level, especially given the recent repeal of State Planning Policies for the Coastal Zone. Relevant provisions of the Overarching State Planning Policy lack the specificity of the individual State Planning Policies that have been rescinded. National and State planning objectives relating to expansion of mining activities and development and growth may be incompatible with effective climate change response objectives. 	<ul style="list-style-type: none"> Commonwealth Government Climate Change - http://www.climatechange.gov.au/climate-change Queensland Government State Planning Policy - http://www.dsdp.qld.gov.au/about-planning/state-planning-policy.html Australian climate change science: a national framework http://climatechange.gov.au/climate-change/climate-science/australian-climate-change-science/australian-climate-change-science-6 National Climate Change Adaptation Framework http://climatechange.gov.au/climate-change/adapting-climate-change/national-climate-change-adaptation-framework/national-climate Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 Qld Economic Growth plans - http://www.thepremier.qld.gov.au/plans-and-progress/plans/6-months-july-dec-12/four-pillar-economy.aspx 	limited	declining
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to climate change	3	<ul style="list-style-type: none"> Australia's National Greenhouse Accounts are published, which track national emissions from 1990 onwards. Australia's greenhouse gas emissions are estimated as a nation, by state and by industry but not all are in a consistent format. National Framework for Climate Change Science sets climate change research priorities and identifies the people and infrastructure Australia needs to meet future science requirements. Bureau of Meteorology monitors temperature and pH on a regular basis; eReefs and Eye on the Reef monitoring of reef health Continuation of the AIMS long-term monitoring program is 	<ul style="list-style-type: none"> Greenhouse gas emissions - http://www.climatechange.gov.au/climate-change/greenhouse-gas-measurement-and-reporting/tracking-australias-greenhouse-gas-emissions A Plan for Implementing Climate Change Science in Australia http://www.climatechange.gov.au/sites/climatechange/files/documents/03_2013/plan-implementing-climate-change-science-australia.pdf Australian Climate Change Science Program http://www.climatechange.gov.au/climate-change/grants/australian-climate-change-science- 	adequate	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>critical here</p> <ul style="list-style-type: none"> • SELTMP will be providing relevant data • Integrated Monitoring program for the Great Barrier Reef will provide information on this and especially begin to address questions around cumulative impacts 	<p>program/coasts-and-oceans</p> <ul style="list-style-type: none"> • External monitoring of weather/climate/ocean etc (Bureau of Meteorology - Sea Surface Temp, pH, sea level) • Systems like POAMA (http://poama.bom.gov.au/, http://www.bom.gov.au/climate/poama2.4/poama.shtml), ReefTemp (http://www.bom.gov.au/environment/activities/reeftemp/about.shtml), • eReefs (http://www.emg.cmar.csiro.au/www/en/emg/projects/eReefs.html) and hydrodynamic models. • Eye on the Reef platform and program (tracks cyclone damage, disease, bleaching, crown of thorns starfish) • GBRMPA incident response system and summer response program 		
<p>PL6 The main stakeholders and/or the local community are effectively engaged in planning to address climate change</p>	<p>3</p>	<ul style="list-style-type: none"> • Key stakeholders are involved in partnerships with the GBRMPA around climate change adaptation, for example, commercial fishing and tourism industry, researchers, Reef managers • Queensland Government partners appear not to be engaged in addressing climate change based on removal of climate change related provisions in management plans and policies relevant to management of the Great Barrier Reef. • Researchers and managers are frequently engaged during processes that explore and develop ways of approaching the challenge of climate change for the Reef, for example, through project-based expert workshops. In some cases industry and NGO's are also involved. • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 includes several projects designed to engage local stakeholders in planning to adapt to a changing climate • A new collaboration between GBRMPA and CSIRO has established a Climate Adaptation Research Program to explore adaptation in a Great Barrier Reef context and support Great Barrier Reef managers. • The development of regional plans and local government planning schemes includes statutory consultation requirements 	<ul style="list-style-type: none"> • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 • ProVision Stewardship Action Plan • Joint CSIRO/GBRMPA Great Barrier Reef Climate Adaptation Research Program 	<p>limited</p>	<p>stable</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>to engage stakeholders and the local community. Submissions regarding these plans must be considered prior to finalisation.</p> <ul style="list-style-type: none"> • The Climate Commission (which had a strong community engagement focus) has recently been disbanded (but re-convened as a Climate Council with private funding support) • Many plans deal with aspects of biodiversity (for example, species protection) but do not address the broader context of biodiversity (including dealing with connectivity issues) and their implications. • Good engagement with science and tourism communities • QSIA partnership around climate change (under GBRMPA CC Action Plan program) • Reef HQ's relationship with Ergon and local government around energy efficiency • On Local Marine Advisory Committee agenda • Reef Guardian Schools and Reef Guardian Councils re: education and outreach programs. • The GBRMPA has regional liaison officers to work with stakeholders. 			
PL7 Sufficient policy currently exists to effectively address climate change	2	<ul style="list-style-type: none"> • Good policy framework at Great Barrier Reef level (Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017) • Coordinated policy on offsets, climate mitigation and net benefits is not present for marine and coastal development. • No internal policy of on offsetting GBRMPA's CO2 footprints for meetings and travel etc. (mitigation) • Addressing major factors influencing the Great Barrier Reef requires action under policies developed at a national and global scale. While there are an extensive set of planning and policy direction statements at a national level, the current Department of Environment Climate Change website note that "Some of the content on this page is no longer current. The climatechange.gov.au website is being revised, and content will be amended. New website content will be available soon." So there is a level of uncertainty around current planning to address climate change at the national level. • Similarly, there is a lack of clarity around planning at the 	<ul style="list-style-type: none"> • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 • Mid-Term Review: Great Barrier Reef Climate Change Action Plan 2007-2012 and delivery program (http://hdl.handle.net/11017/959) • Summary Report of the mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 (http://hdl.handle.net/11017/958) 	limited	declining

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		Queensland Government level, especially given the recent repeal of State Planning Policies for the Coastal Zone. Relevant provisions of the Overarching State Planning Policy lack the specificity of the individual State Planning Policies that have been rescinded			
PL8 There is consistency across jurisdictions when planning for climate change	1	<ul style="list-style-type: none"> Lack of clarity around national and regional policy means that it is very difficult to ascertain consistency in policy settings at present 	<ul style="list-style-type: none"> GBRMPA workshop discussions 	limited	declining
PL9 Plans relevant to climate change provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	2	<ul style="list-style-type: none"> Variable and unclear at present Local government planning schemes identify areas where development may and may not occur, or occur under certain circumstances. The development applications are assessed according to intent for the area/zone, codes of assessment relevant to the area/zone and, if submissions have been made about the proposed development, the issues raised in the submissions. Development applications may have conditions applied by the assessment manager (or concurrence agency if relevant) which have to be met by the applicant before proceeding. Cancellation of State Coastal Plan and Regional Coastal Management Plans reduces certainty 	<ul style="list-style-type: none"> GBRMPA workshop discussions Strategic Assessment 2013 	limited	declining
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address climate change	3	<ul style="list-style-type: none"> Approximately \$900,0000 per annum has been allocated to implement the Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 although changes to budget allocation and reporting make this more difficult to track and it is understood that this funding may not be continued in future years. The Caring for our Coasts commitment is supporting our coastal communities prepare for and adapt to the impacts of climate change, including the national coastal risk assessment. The Australian Government is supporting a broad range of climate change science research activities through the \$31 million Australian Climate Change Science Program. Climate change has complex inter-relationships with many other areas of management concern (biodiversity, development 	<ul style="list-style-type: none"> GBRMPA workshop discussions Climate Science Program http://www.climatechange.gov.au/climate-change/grants/australian-climate-change-science-program http://www.climatechange.gov.au/climate-change/adapting-climate-change/adaptation-framework 	adequate	declining

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>assessments, emissions mitigation, etc). It is difficult to quantify whether enough resourcing being put in across all elements. Climate change work is now more integrated across GBRMPA operational units so expertise and resources related to climate change work, while not necessarily diminished, are less easy to identify and report.</p> <ul style="list-style-type: none"> • COAG National Climate Change Adaptation Framework has provided five years of financial support to minimise the impacts of climate change on the Great Barrier Reef and build resilience of the ecosystem, communities and industries. • The \$200 million Reef Rescue Plan funds local actions to address degrading water quality, and contributes to the Great Barrier Reef's resilience to climate change. • Queensland Government investment in relevant climate change work has significantly diminished since 2012 with the abolition of the Office of Climate Change and the Climate Change Centre of Excellence. The Queensland Government is still investing in the Reef Plan and their action on climate change is focused upon adaptation to extreme events. 			
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address climate change	2	<ul style="list-style-type: none"> • Significant re-focus of effort on climate change by Queensland Government with loss of staff and directions of research – for example, the Queensland Government website for Queensland Climate Change Centre of Excellence lists 13 publications in 2010, 18 in 2011, five in 2012 and none in 2013. • There was an identified climate change section within GBRMPA coordinating implementation of the Great Barrier Reef Climate Change Action Plan. Through restructuring in 2013 this section no longer exists. However, three of the FTEs are now located in the Biodiversity Conservation and Heritage section and continue to be focused on climate change work. 	<ul style="list-style-type: none"> • Queensland Climate Change Centre of Excellence - http://www.ehp.qld.gov.au/climatechange/centre/whatsciencetelling.html • Qld Climate Change Centre of Excellence http://www.longpaddock.qld.gov.au/about/publications/index.html • GBRMPA organisation chart - http://www.gbrmpa.gov.au/about-us/corporate-information/our-organisation 	limited	declining
IN3 The right skill sets and expertise are currently available to the managing organisations to address climate change	3	<ul style="list-style-type: none"> • GBRMPA has a relatively large cadre of well-trained staff with a strong science background relevant to understanding climate change impacts and responses. • GBRMPA has active collaborations with CSIRO, AIMS and universities with access to climate change scientists. • Loss of staff and re-focus of effort in Queensland Government 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	limited	declining

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> departments relevant to addressing climate change 			
<p>IN4 The necessary biophysical information is currently available to address climate change</p>	<p>3</p>	<ul style="list-style-type: none"> Much of the information available is often in disparate datasets. It would be highly desirable to centralise the necessary data particular the consistent long-term gathering of environmental exposure as well as ecological information. A range of research is commissioned and relationships with the science community have been developed under the Climate Change Action Plan to help meet these needs. Relevant information is frequently evolving as new models or better understanding and data is developed. Vulnerability assessment Regional projections and detailed information could be improved Current understanding of the risks relating to climate change is available (see Vulnerability Assessment) but information to implement management tools is not always available. Regional projections (in Great Barrier Reef) not at adequate resolution Sea level rise mapping not adequate to meaningfully incorporate climate change into coastal planning for all areas. Limited information on fundamentals and vulnerability of coastal and terrestrial ecosystems to climate change, therefore difficult to identify adaptation options. Scientific information needs for the management of the Great Barrier Reef Marine Park is a revision of science information needs based on the outcomes of the Outlook Report and is the primary tool for guiding investment in research and monitoring. This document provides a framework for integrating science into the management of the Marine Park. Climate change projections for the Great Barrier Reef include increased frequency and severity of mass coral bleaching events. ReefTemp Next Generation developed in the Centre for Australian Weather and Climate Research under eReefs. The system is based on new high resolution IMOS satellite sea surface temperature products developed at the Bureau of Meteorology 	<ul style="list-style-type: none"> Vulnerability assessment Scientific Information Needs for the Management of the GBRMP: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0019/3376/GBRMPA_Scientific_Information_Needs.pdf ReefTemp - Bureau of Meteorology http://www.bom.gov.au/environment/activities/reeftemp/reeftemp.shtml 	<p>limited</p>	<p>improving</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • Continuous sea surface temperature monitoring provides tools to understand and better manage the complex interactions leading to coral bleaching. When bleaching conditions occur, these tools can be used to trigger bleaching response plans and support management decisions. • The Climate Change Program at GBRMPA is developing new thermal stress indices by correlating bleaching response severity to high-resolution SST data at survey sites monitored during summer bleaching periods. • Much information is available but key gaps exist (for example, connectivity, trophic interactions, deep water, far north Great Barrier Reef) • Non-charismatic or taxa of no apparent economic value are poorly known • Poor knowledge of ecological processes, for example, groundwater inflows, sink/source, implications of deepwater upwellings and planktonic/larval movements. 			
IN5 The necessary socio-economic information is currently available to address climate change	3	<ul style="list-style-type: none"> • Generally this has been an area lacking data, but activities are underway to reduce this deficit to some degree. There is a higher level of awareness within management agencies of the value of relevant socio-economic information. • National Climate Change Adaptation Research Facility (NCCARF) funded projects such as <i>Changing currents in marine biodiversity governance and management responding to climate change</i> are conducting work within the Great Barrier Reef that will be relevant to climate change responses. • Social research commissioned under the Great Barrier Reef Climate Change Action Plan 2007–2012 in 2010 found that 93 per cent of the people surveyed were concerned about the potential consequences of climate change for the Great Barrier Reef. • During the Extreme Weather Incident Response program, social and economic rapid impact assessments were carried out with the Reef based marine tourism and commercial fishing sector in areas affected by Cyclone Yasi and the floods of summer 2010/11. • The changing picture of reef health has been expanded to 	<ul style="list-style-type: none"> • Vulnerability assessment (Chapter 23) • Extreme weather on the Great Barrier Reef (http://hdl.handle.net/11017/645). • CC perceptions survey • Access Economics Report on valuing the Reef • Climate change in the Capricorn Coast: an analysis of stewardship potential (http://hdl.handle.net/11017/483) • SELTMP: http://www.nerptropical.edu.au/project/seltmp 	limited	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>include the social and economic changes in the area. In 2011, the GBRMPA partnered with CSIRO to establish the Social and economic long-term monitoring program (SELTMP) to study social and economic conditions and trends, especially in relation to changing ecological conditions in the Marine Park (including as relevant to climate change). While the initial research is establishing baseline data, in future it will help identify both changing perceptions and the social and economic impacts of climate change on our communities and the Great Barrier Reef. Reef-dependent industries.</p> <ul style="list-style-type: none"> • There is a lack of information on recreational use of the Marine Park and relationships to climate change and its effects on ecosystem and social and economic factors for Reef communities. • A study in the Capricorn Coast area has examined marine environmental stewardship potential within the local community, with relevance to climate change and Reef resilience. 			
<p>IN6 The necessary Indigenous heritage information is currently available to address climate change</p>	<p>2</p>	<ul style="list-style-type: none"> • There is limited information and engagement • Some work on Indigenous interests and climate change is taking place more broadly (for example a search of NCCARF publications indicates 26 that have Indigenous as a key word) • Traditional Owners were involved in: turtle tracking in wake of 2010-11 extreme weather events; Raine Island CC adaptation work; Wuthathi TUMRA climate change considerations. The extent to which 'traditional knowledge' was drawn on in this is not clear. • TUMRAs are being used as a tool to engage on climate change and how to build understanding of the impacts of climate change. • Engagement with Wuthathi on climate change has been integrated into the Wuthathi TUMRA Implementation Plan. • Climate change workshops have been held on Wuthathi and Woppaburra countries to assist development of Wuthathi and Woppaburra Traditional Owner Climate Change Action Plans for Sea Country. • Engagement is underway with Raine Island Traditional Owners seeking to determine the current knowledge of Raine Island and discussing potential management options. 	<ul style="list-style-type: none"> • NCCARF - http://www.nccarf.edu.au/content/publication-search-0?field_publication_year_value[value][year]=&body_value=Indigenous&title=&field_publication_author_value=&field_publication_institutions_value=&field_thematic_area_tag_tid=All&field_media_type_tid=All&page=2 	<p>limited</p>	<p>stable</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
IN7 The necessary historic heritage information is currently available to address climate change	1	<ul style="list-style-type: none"> • Extremely limited but issue is limited in scope • Historic heritage was not addressed in the Great Barrier Reef Climate Change vulnerability assessment. • Would be useful to identify historic sites that may be vulnerable to climate change impacts. 	<ul style="list-style-type: none"> • GBRMPA workshop discussions 	limited	stable
IN8 There are additional sources of non-government input (for example volunteers) contributing to address climate change	4	<ul style="list-style-type: none"> • Reef users and community members help to keep an eye on the Reef and report back to management. GBRMPA uses this information to help manage the long-term health of the Reef, and to inform documents such as the Outlook Report. In return GBRMPA provides training materials, as well as regular feedback and updates to participants about the status of the Reef. • GBRMPA, in conjunction with the QPWS, run the Eye on the Reef Program, an umbrella project which includes several monitoring and assessment methods. This information is gathered in partnership with a range of stakeholders, such as Marine Park rangers, tourism operators, reef visitors, fishers and the broader community. The program has been especially useful in tracking climate change relevant impacts such as coral bleaching. The Eye on the Reef Program collects information through various methods including: <ul style="list-style-type: none"> ○ Sightings Network ○ Eyes and Ears Incident Reporting Network ○ Rapid Monitoring ○ Reef Health and Impact Surveys ○ Tourism Weekly Monitoring • The information collected is combined in a data management system to produce a Reef-wide picture of ecosystem health. GBRMPA uses this information to map and assess the impacts of incidents on the Marine Park such as cyclones, flood plumes, coral bleaching, and disease and crown-of-thorns starfish outbreaks under the Reef Health Incident Response System. The data improves knowledge of Reef ecosystem resilience and the risks to that resilience. A better long-term understanding of Reef impacts and ecosystem function aids the development of actions to support Reef resilience under a changing climate. • Marine aquarium industry peak body has updated the industry's stewardship action plan, and this document specifically 	<ul style="list-style-type: none"> • Tourism climate change Action Strategy: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0009/3987/gbrmpa_CCActionStrategyFull_2011.pdf • Pro-Vision Reef Stewardship Action Plan http://www.gbrmpa.gov.au/_data/assets/pdf_file/0015/4236/gbrmpa_StewardshipActionPlan2009.pdf • Eye on the Reef: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/our-monitoring-and-assessment-programs/eye-on-the-reefClimate change adaptation principles: bringing adaptation to life in the marine biodiversity and resources setting http://hdl.handle.net/11017/201 • Climate change vulnerability assessment: Queensland marine aquarium supply industry, 2010 (http://hdl.handle.net/11017/476) • QSIA/GBRMPA climate change and fisheries partnership http://hdl.handle.net/11017/475 • Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop http://hdl.handle.net/11017/522 	adequate	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>recognises climate change implications and contributions the industry can make to looking after the Reef in this context.</p> <ul style="list-style-type: none"> • EPBC approved projects which will further drive climate change are not required currently to offset these impacts. 			
PROCESSES					
PR1 The main stakeholders &/or industry(ies) are effectively engaged in the ongoing management of climate change	4	<ul style="list-style-type: none"> • The Great Barrier Reef Marine Park Authority is well engaged with tourism (marine tourism climate change action group), Natural Resource Management bodies, Reef Guardian Schools and Councils and fisheries. • GBRMPA partnership with Queensland Seafood Industry Association involving workshops, vulnerability assessments and response plans • GBRMPA has memoranda of understanding with ports and the Department of Defence. These memoranda incorporate climate change considerations. • GBRMPA holds annual pre-summer workshops to bring together key researchers and stakeholders to discuss the outlook for the summer, especially around bleaching risk, etc. • Stakeholders and industries are well engaged with reviews of major policy documents such as Climate Change Action Plan and Biodiversity Conservation Strategy. • The Department of Defence is engaging with its stakeholders on climate change issues. • The Tourism Climate Change Action Strategy is designed to assist the tourism industry in understanding, communicating and managing vulnerabilities with climate change. • The Pro-Vision Reef Stewardship Action Plan was developed and recently revised by the Marine Aquarium and Harvest fishery industries to articulate climate change response strategies and stewardship activities. • The Eye on the Reef Program developed by GBRMPA in conjunction with the QPWS, is an umbrella project, which includes several monitoring and assessment methods. The Eye on the Reef Program provides status snapshots and early warning information on water quality, the presence of protected and iconic species and the health of the Reef. This information is gathered in partnership with a range of stakeholders, such as 	<ul style="list-style-type: none"> • Queensland Seafood Industry Association: http://www.qsia.com.au/qsia-gbrmpa-climate-change-and-fisheries-partnership/ • http://www.climatechangeefishing.com.au 	adequate	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Marine Park rangers, tourism operators, reef visitors, fishers and the broader community.</p> <ul style="list-style-type: none"> Expert advice is sought on biodiversity matters through the RACs All appropriate managing agencies are involved in climate change management for the Great Barrier Reef 			
<p>PR2 The local community is effectively engaged in the ongoing management of climate change</p>	4	<ul style="list-style-type: none"> The Eye on the Reef Program developed by GBRMPA in conjunction with the QPWS, is an umbrella project which includes several monitoring and assessment methods. The Eye on the Reef Program provides status snapshots and early warning information on water quality, the presence of protected and iconic species and the health of the Reef. This information is gathered in partnership with a range of stakeholders, such as Marine Park rangers, tourism operators, reef visitors, fishers and the broader community. Reef Guardians program REEF HQ education programs The broader community often feels disempowered by the global nature of the problem, although GBRMPA engagement with stakeholders has been to raise awareness of the importance of local actions that can build resilience of the system to global climate change. GBRMPA regional engagement offices attend community events and they often include climate change information. 	<ul style="list-style-type: none"> Eye on the Reef: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/our-monitoring-and-assessment-programs/eye-on-the-reefClimate change adaptation principles: bringing adaptation to life in the marine biodiversity and resources setting http://hdl.handle.net/11017/201 	adequate	stable
<p>PR3 There is a sound governance system in place to address climate change</p>	2	<ul style="list-style-type: none"> The Great Barrier Reef Intergovernmental Agreement 2009 provides a contemporary framework for cooperation between the governments, recognising challenges such as climate change and catchment water quality that were not foreseen at the time of the 1979 Agreement. Climate change represents perhaps the most significant challenge to governance systems in the Great Barrier Reef. Despite good progress in managing issues such as agricultural sediment and nutrient inputs to the Great Barrier Reef via Reef Plan, Dale et al. identify weaknesses in governance arrangements relating to management of major projects, coastal planning and ecosystem services. Implications of Commonwealth devolving major projects 	<ul style="list-style-type: none"> Great Barrier Reef Intergovernmental Agreement http://www.environment.gov.au/coasts/gbr/agreement.html A method for risk analysis across governance systems: a Great Barrier Reef case study. Environ. Res. Lett. 8 (2013) 015037 (16pp) (https://research.jcu.edu.au/research/tropwater/resources/Dale per cent20et per cent20al per cent202013 per cent20a per cent20method per cent20for per cent20risk per cent20analysis per cent20across per cent20governance per cent20systems.pdf) 	limited	declining

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>assessment and approval to the Queensland Government is uncertain but may remove one of the checks and balances in the system (while streamlining governance of approval systems).</p> <ul style="list-style-type: none"> Climate change not addressed in Queensland State Planning Policy and removal of requirement to consider forward projections of climate change in development applications 			
<p>PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for climate change</p>	3	<ul style="list-style-type: none"> GBRMPA's climate change work has been summarised several times in the last five years – most recently in the Draft Strategic Assessment Report Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-12 (the Action Plan) and its delivery program. Climate Change Adaptation: Outcomes from the Great Barrier Reef Climate Change Action Plan 2007–2012 reviews the performance of the Great Barrier Reef Climate Change Action Plan 2007-12 (the Action Plan) and its delivery program. Monitoring, evaluation, reporting and improvement principles are part of the new Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 KPI reporting (within GBRMPA) for Science Information Needs – i.e. per cent projects delivering against high and medium management needs identified in the GBRMPA Strategic Work Plan Finance Tracking system Annual Operation Planning There is no performance management planning for expectations and progress on developing/evolving GBRMPA management systems to incorporate climate change. Links between monitoring climate change relevant aspects of the environment and planning and decision making could be strengthened. Changes in Queensland policy and systems mean that progress towards climate change actions and programs is more difficult to track. 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Mid-Term Review: Great Barrier Reef Climate Change Action Plan 2007-2012 and delivery program (http://hdl.handle.net/11017/959) Summary Report of the mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 (http://hdl.handle.net/11017/958) 	limited	declining
<p>PR5 Appropriate training is available to the managing agencies to address climate change</p>	3	<ul style="list-style-type: none"> The Eye on the Reef training program is in place (face to face plus online materials) Targeted programs are in place for Marine Park managers (for example Bleachwatch, Rapid assessment) 	<ul style="list-style-type: none"> Eye on the Reef: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/our-monitoring-and-assessment-programs/eye-on-the-reef Climate change adaptation principles: bringing adaptation to life in the 	limited	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> A pilot of reef resilience assessment training has been conducted on Keppel Islands. Tertiary curricula provide climate change adaptation training for potential new staff coming from a science background. 	<p>marine biodiversity and resources setting http://hdl.handle.net/11017/201</p>		
<p>PR6 Management of climate change is consistently implemented across the relevant jurisdictions</p>	2	<ul style="list-style-type: none"> Lack of clarity around national and regional policy means that it is very difficult to ascertain consistency in policy and management programs. Queensland Government has removed resources and explicit program structures around climate change management (for example EHP website material on climate change refers to responsibility within Department of Science, Information Technology, Innovation and the Arts (DSITIA) but the DSITIA website provides no clear focus on climate change science or planning). Management actions are often reactive and event based (for example, extreme weather) There are strong alliances around Reef health surveys and the Field Management Program. Programs have been piloted at demonstration sites, such as Keppel Islands and Raine Island to inform implementation of adaptive management across relevant jurisdictions. Extensive coordination efforts seek to achieve consistency in matters such as whale watching guidelines, TUMRAs, ILUAs and MOUs. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	limited	declining
<p>PR7 There are effective processes applied to resolve differing views/ conflicts regarding climate change</p>	2	<ul style="list-style-type: none"> Lack of clear policy and programs at national and state level make this difficult to assess. EIA processes are designed to incorporate conflict resolution elements. Delegation on environmental approvals from Commonwealth to State level may resolve conflict but at the expense of adequate consideration of climate change issues within impact assessment and approval processes. Evaluation mechanisms for conflict resolution are lacking. Reef Advisory Committees, Association of Marine Park Tourism Operators, fishery workshops all have a feedback loop to bring information back to the Great Barrier Reef Marine Park Authority Nationally, government support for bodies such as the Climate 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	limited	declining

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Commission, and specific government departments or sections addressing climate change have declined.</p> <ul style="list-style-type: none"> Vulnerability work has been a good example of consensus science. 			
<p>PR8 Impacts (direct, indirect and cumulative) of activities associated with climate change are appropriately considered.</p>	<p>2</p>	<ul style="list-style-type: none"> A recent study, commissioned by the GBRMPA (conducted by RPS) has recommended: <ul style="list-style-type: none"> adopting and amending the EIM Policy, Risk Management Framework and Permits developing practical guidelines for operators to consider climate change prior to, during the permit process and then whilst monitoring and reporting during the life of the Permit. introducing regular reporting whilst operating an activity or development which provides updates from permit holders on climate change in response to technological changes and innovation in climate change adaptation and mitigation. further incentives to operators/developers for continual “excellence” in addressing climate change within their activity or development Direct and indirect impacts of activities associated with climate change are not yet appropriately considered. Climate change has not been included in joint terms of reference with the (DSEWPaC) (for activities requiring an approval under the EPBC Act and permit under the GBRMP Act) because GBRMPA has no specific policy on this despite the existence of a broader statutory head of power to consider potential impacts on the environment from the activity (which may include GG emissions, etc.) – may be partially resolved by implementation of the Program Report associated with the Great Barrier Reef Strategic Assessment (for example, Recommendations 7 and 36) Cumulative impacts assessment is attempted through EIA processes, but done on a case by case basis (i.e. as applications are received) – a framework for considering cumulative impacts has been developed Evaluation of resilience indicators is included in the Keppel Islands pilot work. 	<ul style="list-style-type: none"> RSP5 Final Report - A Framework for Understanding Cumulative Impacts and Supporting Environmental Decisions in the Great Barrier Reef World Heritage Area http://www.environment.gov.au/resource/framework-understanding-cumulative-impacts-supporting-environmental-decisions-and-informing Reef Atlas - http://e-atlas.org.au/ 	<p>limited</p>	<p>improving</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> The Raine Island climate change risk assessment process includes consideration of species, groups, habitats vulnerability to cumulative impacts. Investment in the Reef resilience atlas will be important to forecast and inform management of cumulative impacts. Stakeholders such as tourism and fishing industries are beginning to consider implications of climate change for their industries and businesses. 			
<p>PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding climate change</p>	<p>3</p>	<ul style="list-style-type: none"> Bureau of Meteorology (BoM) and CSIRO provide a range of relevant climate information Information from ReefTemp is used to inform the Coral Bleaching Response Plan (information below) Great Barrier Reef Climate Adaptation Strategy and Action Plan 2012-2017 objective area Strategic Science is intended to help ensure the right information is available. Outcomes from this 'theme' in the first Action Plan include substantial progress in increasing availability of relevant research and monitoring information through ARC linkages, direct investment and the Eye on the Reef program The Vulnerability assessments provide an important starting point. The Coral Bleaching Response Plan 2010-2011 outlines a strategic approach for monitoring bleaching risk with four components: <ol style="list-style-type: none"> 1. Early warning system 2. Incident response 3. Management Actions 4. Communications Strategy RAP, Inshore Finfish Review working groups) Reef Advisory Committees are an important conduit to biophysical and monitoring information. Information from monitoring programs (for example Marine Monitoring Program, Long-Term Monitoring Program, Eye on the Reef, Seagrass-Watch, etc.) are drawn on regularly. Use of expert advice and networks of relevant experts have been forged and maintained to inform management decision making (for example with National Oceanic and Atmospheric 	<ul style="list-style-type: none"> CSIRO and BoM State of the Climate 2012 (http://www.csiro.au/Outcomes/Climate/Understanding/State-of-the-Climate-2012.aspx) ReefTemp project (http://www.cmar.csiro.au/remotesensing/reeftemp/web/index.htm) Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017 	<p>adequate</p>	<p>improving</p>

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		Administration (NOAA), BoM, JCU, UQ. ARC Centre of Excellence for Coral Reef Studies)			
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding climate change	3	<ul style="list-style-type: none"> • SELMTP will provide significantly enhanced social and economic data relevant to climate change management • Where relevant information is available it is used in decision making 	<ul style="list-style-type: none"> • Marshall, N.A., Bohensky, E., Curnock, M., Goldberg, J., Gooch, M., Pert, P.L., Scherl, L., Stone-Jovicich, S., Tobin, R.C. (2013) A Social and economic long-term monitoring program for the Great Barrier Reef. Key Findings 2013. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns 	limited	improving
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding climate change	2	<ul style="list-style-type: none"> • There is limited information available to managers. • Traditional Owners were involved in: turtle tracking in wake of 2010-11 extreme weather events; Raine Island CC adaptation work; Wuthathi TUMRA climate change considerations. The extent to which 'traditional knowledge' was drawn on in this is not clear. • TUMRAs are being used as a tool to engage on climate change and how to build understanding of the impacts of climate change. • Engagement with Wuthathi on climate change has been integrated into the Wuthathi TUMRA Implementation Plan. • Climate change workshops have been held on Wuthathi and Woppaburra countries to assist development of Wuthathi and Woppaburra Traditional Owner Climate Change Action Plans for Sea Country. • Engagement is underway with Raine Island Traditional Owners seeking to determine the current knowledge of Raine Island and discussing potential management options. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop 	limited	improving
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding climate change	2	<ul style="list-style-type: none"> • Limited consideration in management plans covering historic heritage sites 	<ul style="list-style-type: none"> • Raine Island Management Plan 		
PR13 Relevant standards are identified and being met regarding climate change	3	<ul style="list-style-type: none"> • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan contains a series of actions and targets relating to: <ul style="list-style-type: none"> ○ enhancing ecosystem resilience ○ adaptation of industries and communities ○ action on climate change ○ strategic science 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan • Draft Great Barrier Reef Strategic Assessment Report 	adequate	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> ○ effective communication ○ building stewardship. • Recommendations re enhanced climate change action are included in the Draft Great Barrier Reef Strategic Assessment Report. • Standards and thresholds relevant to climate change to guide action at a local level need development (they exist in relation to climate change mitigation at global level but are not necessarily accepted or acted upon). • Standards and objectives that were included in State Planning Policies and Coastal Management plans are no longer operative or much more general in scope. 			
PR14 Targets have been established to benchmark management performance for climate change	2	<ul style="list-style-type: none"> • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan contains a series of actions and targets relating to: <ul style="list-style-type: none"> ○ enhancing ecosystem resilience ○ adaptation of industries and communities ○ action on climate change ○ strategic science ○ effective communication and ○ building stewardship. • Recommendations re enhanced climate change action are included in the Draft Great Barrier Reef Strategic Assessment Report. • The Biodiversity Conservation Strategy also contains targets around actions relating to management of climate change issues. • Standards and objectives that were included in State Planning Policies and Coastal Management plans are no longer operative or much more general in scope. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • Great Barrier Reef Climate Change Adaptation Strategy and Action Plan • Draft Great Barrier Reef Strategic Assessment Report • Great Barrier Reef Biodiversity Conservation Strategy 2013 	adequate	stable
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for climate change	3	<ul style="list-style-type: none"> • Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 was largely positive. • Climate Change Adaptation: Outcomes from the Great Barrier Reef Climate Change Action Plan 2007–2012 documents many activities undertaken in accordance with the Action Plan. • Uncertainty about forward commitments of Australian and Queensland Government policies and programs to address climate change. 	<ul style="list-style-type: none"> • Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 • GBRMPA Management Effectiveness Workshop 	limited	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
OP2 Implementation of management documents and/or programs relevant to climate change have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> The Mid-Term Review of the Great Barrier Reef Climate Change Action Plan 2007-2012 and delivery program indicates progress generally in accordance with specified timeframes. Delivery of projects has been comprehensive, addressing all four objectives of the Action Plan. The Action Plan has served as a framework for adaptive program planning and delivery – with annual adjustment to the portfolio of projects to respond to emerging knowledge and changing conditions. The integration of climate change throughout the GBRMPA's core business is occurring generally through building capacity for other groups to understand the implications of climate change. Through the Action Plan, the concepts of risk and resilience have been cemented and have strongly influenced the Corporate Plan. This new focus of the Corporate Plan is expected to drive further integration of climate change throughout the operations of the GBRMPA. 	<ul style="list-style-type: none"> Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 GBRMPA Management Effectiveness Workshop 	limited	improving
OP3 The results (in OP1 above) have achieved their stated management objectives for climate change	2	<ul style="list-style-type: none"> The publication Climate Change Adaptation: Outcomes from the Great Barrier Reef Climate Change Action Plan 2007-2012 and the mid-term review of the climate change action plan and delivery program both indicate that a large number of relevant actions have been underway and are having desired outcomes in relation to influencing the way management activities consider and incorporate climate change and extreme weather considerations. Examples include the development of incident response plans, working in coordination with commercial fisheries and Queensland Government to determine the most appropriate local management actions to put in place after major extreme weather events, and actively working to understand impacts on the social and economic wellbeing of commercial fishers and tourism operators. However achievement of objectives in relation to climate change adaptation will be a long-term process and many other policies and trajectories in other sectors have the result of exacerbating climate change and climate change impacts. 	<ul style="list-style-type: none"> Climate Change Adaptation: Outcomes from the Great Barrier Reef Climate Change Action Plan 2007-2012 (http://hdl.handle.net/11017/1139) 	limited	improving
OP4 To date, products or services have been produced in accordance with the stated management objectives for	4	<ul style="list-style-type: none"> Products and services have generally been delivered in accordance with the objectives of the Great Barrier Reef Climate Change Action Plan. Examples are provided under evidence. 	<ul style="list-style-type: none"> Climate Change Adaptation: Outcomes from the Great Barrier Reef Climate Change Action Plan 2007-2012 (http://hdl.handle.net/11017/1139) 	adequate	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
climate change			<ul style="list-style-type: none"> • http://elibrary.gbrmpa.gov.au/jspui/index.jsp • Mapping reef health using Google Earth: supporting management responses to climate change incidents (project bulletin) http://hdl.handle.net/11017/156 • Raine Island adaptive management to conserve marine turtles http://hdl.handle.net/11017/489 • A changing climate for the seabirds and shorebirds of the Great Barrier Reef (project bulletin) http://hdl.handle.net/11017/529 • Climate change adaptation principles: bringing adaptation to life in the marine biodiversity and resources setting http://hdl.handle.net/11017/201 • Climate change vulnerability assessment: Queensland marine aquarium supply industry, 2010 http://hdl.handle.net/11017/476 • Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop (http://hdl.handle.net/11017/522) • Great Barrier Reef tourism industry and stakeholder climate change survey 2010 (project bulletin) http://hdl.handle.net/11017/153 • Tourism operators responding to climate change case study series (project bulletin) http://hdl.handle.net/11017/531 • Lady Elliot Island climate change trail signage: thematic interpretation of a unique Commonwealth Island under threat (project bulletin) http://hdl.handle.net/11017/155 • SeaRead Issue 37: 2011 http://hdl.handle.net/11017/919 • Special Climate Change Supplement • Climate change and the Reef: children's art competition (project bulletin) http://hdl.handle.net/11017/145 		
OP5 Effective knowledge management systems regarding climate change are in place within agencies	4	<ul style="list-style-type: none"> • Outcomes report from the first climate change action plan, mid program audit, wide range of publications arising from the program, many of which are available on the GBRMPA website • A public eLibrary has been established on the GBRMPA 	<ul style="list-style-type: none"> • Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 • GBRMPA Management Effectiveness Workshop 	adequate	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>corporate website and all the agency's recent climate change related publications have been uploaded to this repository.</p> <ul style="list-style-type: none"> A GBRMPA science library (internal only) has also been established in the bibliographic platform RefWorks – this enables storage and use of a wide range of climate change related publications from a range of sources. 			
OP6 Effective systems are in place to share knowledge on climate change with the community	3	<ul style="list-style-type: none"> CCAP 1 outcomes report, mid program audit, publications and website Outcomes report from the first climate change action plan, mid program audit, wide range of publications arising from the program, many of which are available on the GBRMPA website A public eLibrary has been established on the GBRMPA corporate website and all the agency's recent climate change related publications have been uploaded to this repository. Climate change information can be difficult to locate on Queensland Government sites. Queensland Government website for Queensland Climate Change Centre of Excellence lists 13 publications in 2010, 18 in 2011, five in 2012 and none in 2013. The Climate Commission (which had a strong community engagement focus) has recently been disbanded (but re-convened as a Climate Council with private funding support). 	<ul style="list-style-type: none"> Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 GBRMPA Management Effectiveness Workshop Queensland Climate Change Centre of Excellence - http://www.ehp.qld.gov.au/climatechange/centre/whatsciencetelling.html Qld Climate Change Centre of Excellence http://www.longpaddock.qld.gov.au/about/publications/index.html 	adequate	stable
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing climate change and moving towards the attainment of the desired outcomes.	2	<ul style="list-style-type: none"> Mid-term Review and Report on Outcomes of the Great Barrier Reef Climate Change Action Plan 2007-2012 indicate considerable progress towards plan objectives but impact on outcomes in relation to climate change impacts on the Great Barrier Reef is limited. Two major factors will dictate the future health of the Great Barrier Reef: the rate and extent of climate change, and the resilience of the Reef ecosystem to climate change. The outlook for the Reef is poor, and addressing climate change is a local, national and global challenge. The world-leading management regime in place for the Reef, including the explicit and active focus on climate change risks and adaptation, positions the Great Barrier Reef to be able to cope with climate change better than most reef systems around 	<ul style="list-style-type: none"> Mid-term review of the Great Barrier Reef Climate Change Action Plan 2007-2012 GBRMPA Management Effectiveness Workshop 	limited	declining

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>the world.</p> <ul style="list-style-type: none"> Great Barrier Reef Marine Park Regulations 88Qa specifies consideration of potential impacts on the environment (from activities that require a permit). This regulation would include the consideration of emissions from the activity (if permitted) however it is not explicit and therefore the ability for the GBRMPA to effectively address climate change in permit assessments is limited (policy and guidelines may be the solution (see RPS report outcomes) There is still a significant need for managers to develop consistent and integrated adaptive management processes that incorporate future projections into decision making. The current Resilience Decision Framework project is an example of a decision support system incorporating resilience and climate change projections. Uncertainty about forward commitments of Australian and Queensland government policies and programs to address climate change 			
OC2 The outputs relating to climate change are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	1	<ul style="list-style-type: none"> Considerable progress has been made as detailed above – however until global emissions start to decrease the major risk to the Great Barrier Reef ecosystem will continue to be climate change impacts. Under current scenarios these impacts are forecast to become more frequent and severe and eclipse all other pressures affecting the Great Barrier Reef World Heritage Area. Mitigating greenhouse gas emissions (GHG) is a key response to the climate change threat, however this is a local, national and global challenge 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	limited	declining
OC3 the outputs (refer OP1 and 3) for climate change are reducing the major risks and the threats to the Great Barrier Reef	1	<ul style="list-style-type: none"> Some risks have reduced but to what extent Too early for most results to be evidence The risks to the Great Barrier Reef (and other coral reef ecosystems) from climate change have been highlighted in relevant national and international documents relating to climate change. However real change in climate policy at a national and international level to produce change in GHG emissions that are needed to reduce risks to the Great Barrier Reef are not evident. Climate change programs have also been influencing how local Reef users and stakeholders think. For example, feedback from 	<ul style="list-style-type: none"> CC Adaptation Outcomes report - http://hdl.handle.net/11017/1139 	limited	stable

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		interviews with key stakeholders on the recent trawl adaptation projects indicated that the climate workshops encouraged fishers to think about the ecosystem and the biophysical processes that underpin the resources they value.			
OC4 Use of the Great Barrier Reef relating to climate change is demonstrably environmentally sustainable	1	<ul style="list-style-type: none"> Pressures that impact on the resilience of the Reef exacerbate the impacts of climate change and extreme weather. Future predictions of climate change dominate most aspects of the Great Barrier Reef's outlook over the next few decades. The extent and persistence of the damage to the ecosystem will depend to a large degree on the amount of change in the world's climate and on the resilience of the Great Barrier Reef ecosystem in the immediate future. Rapid expansion of coal and coal seam gas mining in the adjacent coastal zone and export through the Great Barrier Reef is acting to exacerbate rather than mitigate climate change. Some Reef-dependent industries are taking positive action in relation to climate change (mitigation and/or adaptation) 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	limited	stable
OC5 Use of the Great Barrier Reef relating to climate change is demonstrably economically sustainable	1	<ul style="list-style-type: none"> Increasing atmospheric CO2 concentrations primarily from fossil fuel use will ultimately jeopardize the established tourism and fishing industries. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	limited	stable
OC6 Use of the Great Barrier Reef relating to climate change is demonstrably socially sustainable enhancing understanding and/or enjoyment	N/A				
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address climate change	3	<ul style="list-style-type: none"> Eye on the Reef program Reef Guardians program QSIA climate change partnership and tourism industry partnerships Research partnerships A number of education tools have been developed to specifically target this threat. <ul style="list-style-type: none"> Revamped climate change display in Reef HQ Aquarium and new energy use reduction display. GBRMPA Science Teaching Units (available online) specifically focus on this threat through multiple year levels. These education documents are available 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop Eye on the Reef - http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/eye-on-the-reef Reef Guardians - http://www.gbrmpa.gov.au/our-partners/reef-guardians QSIA partnership - http://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC0QFjAA&url=http%2F%2Fwww.gbrmpa.gov.au%2F_data%2Fassets%2Fpdf_file%2F0013%2F13072_per%2FPBulletinQSIA_GBRMPA.pdf&ei=wbRUq- 	adequate	improving

Component of management of climate change	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>publically.</p> <ul style="list-style-type: none"> ○ Annual events such as the Future Leaders Eco Challenge focus on this threat. ○ Reefbeat education series refers to this threat. ○ Reef Guardian Schools action plans specify projects in schools in relation to this threat. <ul style="list-style-type: none"> ● Changes in Queensland Coastal Planning arrangements and changes to State Planning Policies may reduce community awareness of and collaborative action to address climate change 	<p>rFNCIkgWK-oDYBQ&usq=AFQjCNH-rdATB4iQ_zxS917gmEAmdlpRQA&sig2=vsY3OvuudzZRIZiMWT3JwA&bvm=bv.59026428,d.dGj</p>		

Table 31 Calculation of grades for coastal development

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to coastal development are understood by managers	3	<ul style="list-style-type: none"> Values of the Great Barrier Reef relevant to coastal development are clearly articulated in the <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> document, the Great Barrier Reef Strategic Assessment, the Great Barrier Reef Coastal Zone Strategic Assessment and the Scientific Consensus Statement. Forty per cent of the Great Barrier Reef coastal zone is in the protected area estate. Queensland ecosystem/habitat (for regional ecosystems and threatened species) and area based (for protected areas) mapping for matters of State Environmental Significance identifies locations where environmental values of significance can be expected to be located. 	<ul style="list-style-type: none"> The Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems Vulnerability Assessments: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/coastal-ecosystems MPA Great Barrier Reef Region Strategic Assessment Report Queensland Great Barrier Reef Coastal Zone Strategic Assessment Scientific Consensus Statement Queensland State Planning Policy: http://www.dsdp.qld.gov.au/resources/policy/state-planning/state-planning-policy.pdf 	Adequate	Improving
CO2 The current condition and trend of values relevant to coastal development are known by managers	3	<ul style="list-style-type: none"> The Great Barrier Reef Coastal Zone Strategic Assessment and the Great Barrier Reef Strategic Assessment considers the condition and trend of the values relevant to coastal development Coastal Ecosystems Assessment Framework 2012 – This framework allows for a identifying the natural state, current modified state and the pressures and threats through current land use for a specific defined area. <i>The Informing the Outlook for Great Barrier Reef coastal ecosystems reports on the coastal land use changes and their impact on water quality, habitats and inshore biodiversity in the Marine Park. It shows how sensitive and complex coastal ecosystems have changed over many decades, the impact on coral cover, and priority actions needed to halt the decline.</i> 	<ul style="list-style-type: none"> The Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems Vulnerability Assessments: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/coastal-ecosystems MPA Great Barrier Reef Region Strategic Assessment Queensland Coastal Zone Strategic Assessment Scientific Consensus Statement Coastal Ecosystems Assessment Framework 2012 	Limited	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
CO3 Impacts (direct, indirect and cumulative) associated with coastal development are understood by managers.	3	<ul style="list-style-type: none"> Generalised impacts associated with coastal development are summarised at a broad scale in the Strategic Assessment documents. The Informing the Outlook for Great Barrier Reef coastal ecosystems is a technical report on the current status of the catchment and the threats it faces. Vulnerability assessments have also been developed for coastal ecosystems to identify priority areas and ways to reduce threats. However, information about the condition and trend of values associated with coastal development is not usually available at a scale suitable for development assessment. This necessitates reliance of authorities on proponent-driven assessment of values. Cumulative impacts are not well understood and techniques for CIA not yet robust or generally in use by development assessment authorities. 	<ul style="list-style-type: none"> The Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems Vulnerability Assessments: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/coastal-ecosystems Great Barrier Reef Strategic Assessment Queensland Coastal Strategic Assessment Scientific Consensus Statement 	Limited	Stable
CO4 The broader (national and international) level influences relevant to coastal development are understood by managers.	4	<ul style="list-style-type: none"> Strategic Assessment Process and UNESCO World Heritage Committee and Advisory Body processes relating to the Great Barrier Reef have focused attention on the elaboration of attributes underpinning the outstanding universal value of the Great Barrier Reef and MNES and the relationship with coastal development. Current and potential impacts of global and regional changes to population and industry growth in coastal areas are well understood by managers. State Party report to World Heritage Committee reflects thorough understanding of national and international influences. Queensland State-level planning and development decision-makers are aware of national and international dimensions of their decisions. 	<ul style="list-style-type: none"> Queensland-Commonwealth 'assessment' bilateral agreement under the EPBC Act. MPA Great Barrier Reef Region Strategic Assessment Report and Qld Coastal Zone Strategic Assessment State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 Queensland State Planning Policy 	Adequate	Improving
CO5 The stakeholders relevant	4	<ul style="list-style-type: none"> The GBRMPA has a Catchment and Coastal Ecosystem Reef Advisory Committee. A key role for the RACs is to 	<ul style="list-style-type: none"> RAC's: http://www.gbrmpa.gov.au/about-us/reef-advisory-committee 	Adequate	Stable

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
to coastal development are well known by managers.		<p>advise the GBRMPA in relation to actions that can be taken to address the risks to the Great Barrier Reef Marine Park identified in the Great Barrier Reef Outlook Report 2009.</p> <ul style="list-style-type: none"> • Major advances in stewardship and Reef Guardian programs since 2009 • Local Marine Advisory Committees provide contact with stakeholder groups at regional level • Extensive ongoing engagement with industry (fisheries, defence, tourism, etc.) • Reef Guardian Schools • Reef Check • Seagrass-Watch • Regional Offices (GBRMPA CPG) • Great Barrier Reef Ministerial Council 	<ul style="list-style-type: none"> • Our Partners: http://www.gbrmpa.gov.au/our-partners 		
PLANNING					
PL1 There is a planning system in place that effectively addresses coastal development	2	<ul style="list-style-type: none"> • Coastal development is addressed in the Queensland planning system through regulation, statutory state planning instruments and local planning instruments. • Additionally, environmental impacts are addressed through project-by-project assessment and decision making under other legislation such as the Environment Protection Act and State Development and Public Works Organisation Act. • The Queensland State Planning Policy (SPP) includes policies relating to biodiversity (including wetlands and MNES), coastal hazards and the coastal environment. • The Coastal Environment policy requires that in their planning and development decisions, local government: <ol style="list-style-type: none"> (1) facilitate the protection of coastal processes and coastal resources (2) maintain or enhance the scenic amenity of important natural coastal landscapes, views and vistas (3) facilitate consolidation of coastal settlements 	<ul style="list-style-type: none"> • Australian and Queensland governments statutory land use planning and development laws • Queensland State Planning Policy Dec 2013 • Queensland SPP Guidelines http://www.dsdip.qld.gov.au/about-planning/state-planning-policy-guidance-material.html • Biodiversity Conservation Strategy • Regional NRM plans • Reef Plan • Reef Report Card 	Limited	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> The Queensland SPP is supported by guidance material that contains much of the detailed assessment requirements that was included in the superseded Coastal SPP. The Reef Water Quality Protection Plan which was commenced in 2003, and in particular the program of associated actions undertaken since then have begun to have a positive impact as demonstrated by the 2011 Reef Report Card. The Biodiversity Conservation Strategy and NRM plans include actions for addressing issues associated with remediating impacted coastal ecosystems, however these documents are not intended to provide a planning system to address coastal development. 			
<p>PL2 The planning system for coastal development addresses the major factors influencing the Great Barrier Reef Region's values.</p>	2	<ul style="list-style-type: none"> Reef Plan and its associated actions are directed at improving rural land management with the objective of addressing the major factors (catchment water quality) affecting the Great Barrier Reef Region's values. The Queensland SPP requires planning schemes to facilitate the protection of coastal processes and coastal resources, and facilitate the consolidation of coastal settlements. Guidelines provide details about how these policies can be incorporated into planning schemes, including model assessment codes that show how the relevant values are to be addressed. 	<ul style="list-style-type: none"> Queensland State Planning Policy Dec 2013 Great Barrier Reef Water Quality Improvement Plan (Reef Plan) and supporting programs 	Adequate	Improving
<p>PL3 Actions for implementation regarding coastal development are clearly identified within the plan</p>	2	<ul style="list-style-type: none"> The <i>Sustainable Planning Act 2009</i> (SPA) requires councils to incorporate into planning schemes the requirements of State planning instruments, including the Queensland SPP. SPA sets the statutory requirements for assessing development proposals against the Queensland SPP. Reef Plan actions are substantially resourced to address the primary land use activities in coastal catchments impacting on Great Barrier Reef values. Coastal Ecosystems Assessment Framework defines each coastal ecosystem and documents the vulnerabilities 	<ul style="list-style-type: none"> Queensland State Planning Policy and guidelines Reef Plan and associated actions Coastal Ecosystems Assessment Framework 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
		to known pressures, identifying present management tools and appropriate and practical management actions that could be taken to mitigate risk and enhance coastal ecosystem resilience.			
PL4 Clear, measurable and appropriate objectives for management of coastal development have been documented	2	<ul style="list-style-type: none"> The Queensland SPP sets a clear objective for protection of matters of environmental significance – they are to be valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological integrity. Policy requirements generally apply the same 'avoid, minimise and offset', impacts applied in decision-making under the EPBC Act. Queensland Environment Protection (Water) Policy provides environmental values and water quality objectives for Queensland waters to guide development decision making. Coastal Ecosystems Assessment Framework defines each coastal ecosystem and documents the vulnerabilities to known pressures identifying present management tools and appropriate and practical management actions that could be taken to mitigate risk and enhance coastal ecosystem resilience. Reef Plan directly deals with catchment water quality health and contains targets and actions. In doing so it is addressing the most significant land use impact on Great Barrier Reef ecosystems. 	<ul style="list-style-type: none"> Queensland State Planning Policy Dec 2013 Queensland and Australian Government mapping of areas of environmental significance. Queensland EPP (Water) <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> Coastal Ecosystems Assessment Framework Reef Plan 	Adequate	Improving
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to coastal development	2	<ul style="list-style-type: none"> Reef Report Card provides regular assessments of changes in catchment water quality Regional ecosystem, essential habitat and wetland mapping is regularly reviewed and republished (2-5 year cycle) which is used to measure the change in extent of these environmental values 	<ul style="list-style-type: none"> Reef Report Card SLATS and Wetland Mapping Great Barrier Reef CZ Strategic Assessment Qld SoE reports 	Adequate	Improving
PL6 The main stakeholders &/or the local community are effectively engaged in planning to address coastal development	3	<ul style="list-style-type: none"> The draft SPP underwent a statutory consultation period of 40 business days, from 26 April 2013. During this time, over 320 submissions were received. The feedback and recommendations made in these submissions were used to develop the final SPP. Draft local planning schemes, impact assessable 	<ul style="list-style-type: none"> Sustainable Planning Act 2009 Environment Protection Act 1994 State Development and Public Works Organisation Act 1971 Economic Development Act 2012 Reef Plan Reef Trust and BMP initiatives 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>development proposals and projects subject to EIS processes all subject to statutory public consultation.</p> <ul style="list-style-type: none"> • Reef catchments agricultural land managers are directly consulted and provided with support to achieve improved land management practices through Reef Plan initiatives funded by the Reef Trust (Australian Government) and Best Management Practice (Queensland) programs. • The GBRMPA works with local governments through the Reef Guardian Councils to effectively manage Great Barrier Reef coastal ecosystems. 			
PL7 Sufficient policy currently exists to effectively address coastal development	2	<ul style="list-style-type: none"> • Queensland's SPP includes a wide range of planning and development policies that have statutory support under SPA that aim to minimise impacts on the natural environment in the Great Barrier Reef coastal zone, region and elsewhere. These include: <ul style="list-style-type: none"> ○ biodiversity conservation ○ coastal protection, including settlement pattern, coastal dependent use and public access to the coast ○ water quality • Development triggered for State assessment under SPA are assessed against the State Development Assessment Provisions which include model codes dealing with coastal protection, protection of wetlands in Great Barrier Reef catchments, aquaculture, fisheries resources, water resources and native vegetation clearing. • The <i>Informing the Outlook for Great Barrier Reef coastal ecosystems document</i> provides a strong foundation for addressing coastal ecosystems. However this has yet to be translated into policy. • The MPA has policies in place in relation to development within its jurisdiction: <ul style="list-style-type: none"> ○ The Structures Policy ○ Dredging and Spoil Disposal Policy ○ Environmental Impact Management Policy ○ Sewage Discharges From Marine Outfalls To The Great Barrier Reef Marine Park ○ Position Statement on Aquaculture within the Great Barrier Reef Marine Park 	<ul style="list-style-type: none"> • Queensland SPP • Queensland SPP Guidelines http://www.dsdip.qld.gov.au/about-planning/state-planning-policy-guidance-material.html • State Development Assessment Provisions • Sustainable Planning Act • Informing the Outlook for Great Barrier Reef coastal ecosystems 	Adequate	Improving
PL8 There is	2	<ul style="list-style-type: none"> • The Queensland SPP, State development assessment 	<ul style="list-style-type: none"> • Queensland SPP 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
consistency across jurisdictions when planning for coastal development		<p>provisions and Environment Protection (Water) policy, underpinned by statutory requirements (SPA, Environment Protection Act and SDPWO Act) and supported by mapping of areas of environmental significance (both Queensland and Australian governments) provides consistency for planning and development decision-makers</p> <ul style="list-style-type: none"> • EPBC Act assessment bilateral agreement now includes the Great Barrier Reef MP MNES 'trigger' and Australian and Queensland governments now working towards approvals . • Australian and Queensland governments development outcome policies aligned; significant impacts to be avoided, or minimised and offset 	<ul style="list-style-type: none"> • Queensland SDAP • SPA, EP Act and SDPWO Act statutory requirements • Revised 'assessment' bilateral agreement under the EPBC Act • Australian Government–Queensland Government MoU proposing a one-stop-shop dealing with development that may significantly impact on MNES (proposed 'approvals' bilateral agreement under the EPBC Act) 		
PL9 Plans relevant to coastal development provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	2	<ul style="list-style-type: none"> • SPP and SDAP requirements are that significant impacts on important environmental values are avoided, or minimised and offset. • Areas of significant environment values are broadly identified through high quality mapping published by the Australian and Queensland governments. • Site based assessments used to determine if mapped/predicted values are present and whether biodiversity policy outcomes are required to be achieved • Alternate planning and development regimes (EP Act, SDPWO Act, Economic Development (ED) Act) utilise site assessment to determine presence/absence of important environmental values and the 'avoid, or minimise and offset' significant impacts then applied. • Local planning schemes, the Queensland SPP and development schemes in State development areas identify suitable locations for different activities and policies to support their assessment. 	<ul style="list-style-type: none"> • Queensland SPP and SDAP policy requirements • Australian and Queensland governments mapping of matters of environmental significance • Statutory requirements of SPA, SDPWO Act, EP Act and ED Act 	Adequate	Improving
INPUTS					
IN1 Financial	2	<ul style="list-style-type: none"> • There has been staffing reductions in agencies and local 	<ul style="list-style-type: none"> • SPP 	Adequate	Stable

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
resources are adequate and prioritised to meet management objectives to address coastal development		government reflecting a cyclical reduction in development, a move to a compliance focus, rather than an assessment focus, better assessment tools, streamlined processes and budget constraints.	<ul style="list-style-type: none"> SDAP provisions Mapping tools 		
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address coastal development	2	<ul style="list-style-type: none"> Resourcing, although reduced in Australian Government and Queensland Government agencies, remains adequate to meet assessment and compliance demands. Establishment of integrated policy and standard assessment criteria has provided a more consistent achievement of State policy outcomes. Integrated assessment under Queensland's State Assessment and Referral Agency approach has created efficiencies in processing applications. 	<ul style="list-style-type: none"> Statutory assessment and decision-making timelines continue to be generally met (SARA KPIs) 	Adequate	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address coastal development	2	<ul style="list-style-type: none"> Long-term competent team in the MPA, Queensland Government and Australian Government, Larger local councils have adequate expertise to undertake planning and assess development impacts. Smaller coastal councils often lack expertise. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address coastal development	3	<ul style="list-style-type: none"> The Great Barrier Reef Coastal Ecosystems Assessment Framework has developed a framework for collecting and collating the data, which was developed with the help of experts and piloted in some of the Great Barrier Reef basins The Strategic Assessment, the SCS, Outlook Report 2009, vulnerability assessments, Draft Status of habitats and species document, Great Barrier Reef Marine Park Authority 2012, <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i>, have all compiled latest information and made it accessible to managers Mapping of terrestrial environmental values of significance (including freshwater aquatic) is generally adequate in terms of spatial coverage and scale. This mapping is accessible but only provides a 'trigger' for more detailed assessment at the development site scale 	<ul style="list-style-type: none"> Australian and Queensland governments mapping of matters of environmental significance Marine habitat mapping (where available) 	Adequate (terrestrial) Limited (inshore)	Improving Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Regional ecosystem and wetlands data is of high reliability but species habitat data relies on a sightings database (apart from a small number of modelled habitats) as well as being reliant on limited records (particularly for fauna). Inshore habitat mapping is very patchy and is not readily available. Significant work is required to establish a comprehensive coverage (work in progress). 			
IN5 The necessary socio-economic information is currently available to address coastal development	3	<ul style="list-style-type: none"> Government Statistician, Queensland Treasury and Trade, provides population, projections and other demographic and socio-economic data over time for regional areas of Queensland, enabling measurement of socio-economic implications of coastal development. Socio-economic data and impacts of development on the coastal ecosystems is considered in the Informing the Outlook report. 	<ul style="list-style-type: none"> The Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems Great Barrier Reef Coastal Zone Strategic Assessment 	Adequate	Stable
IN6 The necessary Indigenous heritage information is currently available to address coastal development	2	<ul style="list-style-type: none"> Coastal planning processes have included engagement with Traditional Owners. This is improving, but knowledge and communication of knowledge is still lacking. 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	Adequate	Improving
IN7 The necessary historic heritage information is currently available to address coastal development	3	<ul style="list-style-type: none"> Location data about heritage places (including known shipwrecks) of Queensland and National significance is readily available for planning authorities to use. Queensland SPP and SDAP provide policy and development assessment codes/provisions to protect these values 	<ul style="list-style-type: none"> SPP SDAP MNES mapping Queensland Heritage Place mapping 	Adequate	Improving
IN8 There are additional sources of non-government input (for example volunteers) contributing to address coastal development	3	<ul style="list-style-type: none"> Regional NRM Bodies, Seagrass Watch, Coast care groups, Seachange Taskforce contribute to addressing coastal development issues A range of pro-development bodies exist including, regional development associations, Urban Development Institute of Australia (UDIA), Chambers of Commerce, Local Government Association of Queensland 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	Adequate	Stable
PROCESSES					
PR1 The main	3	<ul style="list-style-type: none"> Statutory requirements to engage the community when 	<ul style="list-style-type: none"> SPA 	Very High	Stable

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
stakeholders and/or industry(ies) are effectively engaged in the ongoing management of coastal development		<p>State or local planning instruments are prepared and when impact assessable development (under SPA) or EIS level development (under SPA, EP Act and SDPWO Act) is proposed</p> <ul style="list-style-type: none"> • EPBC Act also requires public engagement when proposals are referred. 	<ul style="list-style-type: none"> • EP Act • SDPWO Act • EPBC Act 		
PR2 The local community is effectively engaged in the ongoing management of coastal development	3	<ul style="list-style-type: none"> • Statutory requirements to engage the community when State or local planning instruments are prepared and when impact assessable development (under SPA) or EIS level development (under SPA, EP Act and SDPWO Act) is proposed • EPBC Act also requires public engagement when proposals are referred. • Public consultation was undertaken for the Queensland SPP • GBRMPA expanded its Local Marine Advisory Committees and Reef Advisory Committees. Local Government has also pushed for improved coastal management through its Seachange Taskforce which has produced a number of policy and advice materials 	<ul style="list-style-type: none"> • SPA • EP Act • SDPWO Act • EPBC Act 	Very High	Stable
PR3 There is a sound governance system in place to address coastal development	2	<ul style="list-style-type: none"> • Long established statutory governance arrangements are in place at the National, State and local level to manage land use planning and development. • State and local governance arrangements are integrated (through SPA). • State policy requirements are enunciated via statutory mechanisms (SPP and SDAP). • National and State governance arrangements are partially integrated (assessment bilateral agreement) with the expectation of full integration through the proposed approvals bilateral agreement. 	<ul style="list-style-type: none"> • Queensland State Planning Policy Dec 2013 • SDAP • Australian Government–Queensland Government assessment bilateral agreement • SPA • EP Act • SDPWO Act • EPBC Act • Australian Government–Queensland Government MoU supporting proposed approvals bilateral agreement 	High	Improving
PR4 There is effective performance monitoring, including regular assessment of appropriateness	2	<ul style="list-style-type: none"> • Priority actions for improving the condition of coastal ecosystems are included in the <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i>, however these could be improved with targets and timeframes. • The revised Reef Plan has performance monitoring 	<ul style="list-style-type: none"> • The Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems • Reef Plan 2013 	Limited	Stable

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
and effectiveness of tools, to gauge progress towards the objective(s) for coastal development		<ul style="list-style-type: none"> Regular updates of areas of environmental significance mapping provide a performance monitoring mechanism in the terrestrial environment. Lack of inshore ecosystem mapping means general monitoring of impacts not possible. Monitoring generally restricted to the change in extent of areas of significance. No capacity at this stage to assess change in condition, other than by using imprecise surrogates (for example tenure and land use). 	<ul style="list-style-type: none"> SoE reporting 		
PR5 Appropriate training is available to the managing agencies to address coastal development	2	<ul style="list-style-type: none"> Limited training available, particularly for local government planning and assessment staff. 	<ul style="list-style-type: none"> No State sponsored training has been provided to EHP or DSDIP regional or local government staff since 2012. 	Limited	Deteriorating
PR6 Management of coastal development is consistently implemented across the relevant jurisdictions	3	<ul style="list-style-type: none"> There is good cooperation between jurisdictions with the Reef Plan Inter-governmental arrangements between the Australian Government and Queensland Government have significantly improved through enhancement of the assessment bilateral agreement and a commitment by the governments to work towards an approvals bilateral agreement. Too early to judge how effectively the policies of the Queensland State Planning Policy will be implemented, particularly by local government.. 	<ul style="list-style-type: none"> Inter-governmental programs under Reef Plan Revised assessment bilateral agreement under the EPBC Australian Government–Queensland Government MoU to prepare an approvals bilateral agreement 	Adequate	Improving
PR7 There are effective processes applied to resolve differing views/ conflicts regarding coastal development	2	<ul style="list-style-type: none"> Statutory mechanisms provide reasonable public input to development decision-making processes, including access to decision review processes. Review processes not available under all laws (for example SDPWO Act) 	<ul style="list-style-type: none"> SPA (merits review for impact assessable and EIS triggered development) EP Act (merits review for resource ERAs triggering EIS requirements) EPBC Act decisions (JR requirement only.) 	Limited	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with coastal development are	2	<ul style="list-style-type: none"> Statutory development assessment processes require assessment of impacts, generally based on ESD principles. SPP and EPBC requirements aim to ensure significant impacts on environmental values of State significance are 	<ul style="list-style-type: none"> SPA & SPP EP Act and EPPs/SDAP SDPWO Act and supporting guidelines EPBC Act and supporting standards and guidelines 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
appropriately considered.		<p>avoided, or minimised and offset.</p> <ul style="list-style-type: none"> Techniques for adequately assessing cumulative impacts are undeveloped – an area that requires more work to establish an appropriate assessment framework. 			
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding coastal development	3	<ul style="list-style-type: none"> Refer to IN4 Excellent information is contained in the <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> Report, but it is too early to assess if the information is used in making decisions 	<ul style="list-style-type: none"> Refer to IN4 Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems 	Adequate	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding coastal development	3	<ul style="list-style-type: none"> Government Statistician, Queensland Treasury and Trade, provides socio-economic data over time for regional areas of Queensland. Socio-economic issues are taken account of in permit decisions and available information was used in RAP process Economic information for key industries but frequent lack of social information Linkage to socio-economic data to management of coastal ecosystems is less developed then for issues such as tourism and fishing 	<ul style="list-style-type: none"> Relevant legislation 	Adequate	Stable
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding coastal development	2	<ul style="list-style-type: none"> There is a need to better develop and integrate Traditional ecological knowledge and stakeholder knowledge into management of coastal ecosystems. Indigenous knowledge is taken account of in permit decisions where relevance is obvious but not routinely addressed in planning and management of coastal ecosystems 	<ul style="list-style-type: none"> GBRMPA Management Effectiveness Workshop 	Limited	Stable
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding	3	<ul style="list-style-type: none"> Location data about heritage places (including known shipwrecks) of Queensland and National significance is readily available for planning authorities to use. Queensland SPP and SDAP provide policy and development assessment codes/provisions to protect these values 	<ul style="list-style-type: none"> SPP SDAP MNES mapping Queensland Heritage Place mapping 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
coastal development					
PR13 Relevant standards are identified and being met regarding coastal development	2	<ul style="list-style-type: none"> The SPP provides specific policy requirements for coastal development SPP is supported by a statutory requirement for policies to be implemented and detailed guidance about how policy outcomes can be achieved State development assessment subject to the requirements of SDAP EP Act provides a broad range of assessment requirements supplemented by specific issue EPPs (for example, water quality) Assessment (and proposed approvals) bilateral agreement establishes common standards of assessment. 	<ul style="list-style-type: none"> SPP SDAP SPA SP Act EPPs EPBC Act Australian Government–Queensland Government assessment bilateral agreement Australian Government–Queensland Government MoU to establish an approvals bilateral agreement 	Adequate	Improving
PR14 Targets have been established to benchmark management performance for coastal development	2	<ul style="list-style-type: none"> SPP provides an overall benchmark (i.e. health and resilience of biodiversity is maintained or enhanced to support ecological integrity) Assessments of extent of ecosystems and habitat provides an indication change over time While less than ideal, assessment of condition of areas of extent based on tenure and land use provides an indication of change in condition 	<ul style="list-style-type: none"> SPP Great Barrier Reef Region and Coastal Zone Strategic Assessments SoE 	Limited	Improving
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for coastal development	2	<ul style="list-style-type: none"> Reef Plan related actions aimed at improving the management of agricultural land are being actively implemented Most recent Reef WQ Report Card indicates (for the first time) improvement The SPP establishes clear policies to be included in planning schemes and achieved through development decisions – guidance is available to councils on how the policies can be integrated into their planning schemes. The GBRMPA has completed the <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> and the Vulnerability Assessments (associated with Climate 	<ul style="list-style-type: none"> Reef Plan Report Card 2011 (released in 2013) Reef Plan 2013 State Planning Policy and guidelines Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems Coastal Ecosystem Assessment Framework 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
		Change and the Great Barrier Reef: A vulnerability Assessment) and the Coastal Ecosystem Assessment Framework			
OP2 Implementation of management documents and/or programs relevant to coastal development have progressed in accordance with timeframes specified in those documents	2	<ul style="list-style-type: none"> For the SPP it is too early to assess Progressive reports on progress of Reef Plan actions since establishment in 2003 show reasonable progress has been made 	<ul style="list-style-type: none"> Reef Plan 3013 	Adequate	No clear trend
OP3 The results (in OP1 above) have achieved their stated management objectives for coastal development	2	<ul style="list-style-type: none"> Reef Plan actions beginning to show success in relation to the number of agricultural landholders adopting BMP Reef Report Card 2011 (released in 2013) shows improvements being achieved Too early to determine the effectiveness of the SPP 	<ul style="list-style-type: none"> Reef Plan 2013 Ref Report Card 2011 	Adequate	No clear trend
OP4 To date, products or services have been produced in accordance with the stated management objectives for coastal development	2	<ul style="list-style-type: none"> SPP, associated guidelines and mapping has been released Interim and Draft referral guidelines on the outstanding universal value of the Great Barrier Reef World Heritage Area for proponents of actions have been developed Outputs such as the <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> report 	<ul style="list-style-type: none"> SPP SPP interactive mapping tool (MSES) SPRAT predictive mapping tool (MNES) 	Adequate	Improving
OP5 Effective knowledge management systems regarding coastal development are in place within agencies	2	<ul style="list-style-type: none"> The Statewide Landcover and Trees Study (SLATS) Report monitors annual land cover change. The most recent report was released in 2012 for the 2009-2010 year. Queensland Wetlands Mapping has been released progressively since 2010 – all Great Barrier Reef catchments now mapped Essential habitat mapping for threatened species is available Queensland Government MSES and Australian Government SPRAT MNES mapping tools available – integrates base data provided by above data The Queensland Land Use Mapping Program (QLUMP) 	<ul style="list-style-type: none"> Publicly available mapping systems that support Australian Government and Queensland Government statutory planning and development assessment. DSITIA. 2012. Land use summary 1999–2009: Great Barrier Reef catchments. Queensland Department of Science, Information Technology, Innovation and the Arts, Brisbane Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>released the 2009 land use data, which includes a 1999-2009 land use change data set for the Great Barrier Reef catchments.</p> <ul style="list-style-type: none"> The <i>Informing the outlook for Great Barrier Reef coastal ecosystems</i> provides a standardised methodology for the collection, collation and validation of coastal ecosystem information, and documents where connectivity has been lost. There is currently no knowledge management system to capture permitted use information in the Marine Park. 			
OP6 Effective systems are in place to share knowledge on coastal development with the community	2	<ul style="list-style-type: none"> Reef Plan Paddock to Reef Monitoring Program Reef Plan Report Card SLATs Report QLUMP report There is no integrated coastal development mapping – most local governments provide web-based access to local planning scheme zoning and other relevant information (including biodiversity overlays) Australian Government and Queensland Government mapping of areas of environmental significance is available on-line 	<ul style="list-style-type: none"> Australian Government and Queensland Government on-line mapping tools Local government on-line access to planning schemes Regional ecosystem, wetlands and QLUMP mapping available on line 	Adequate	Improving
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing coastal development and moving towards the attainment of the desired outcomes.	2	<ul style="list-style-type: none"> SPP and supporting material/mapping provides adequate policy and decision support tools to ensure effective management of coastal development. Too early to determine degree and effectiveness of policy take up in planning and development decision-making. Revised assessment bilateral agreement and proposed approvals bilateral agreement will require that more attention is paid by State and local authorities to the impact their decision have on MNES. 	<ul style="list-style-type: none"> SPP and supporting guidelines and mapping Revised assessment bilateral agreement Proposed approvals bilateral agreement. 	Adequate	Improving
OC2 The outputs relating to coastal development are on	2	<ul style="list-style-type: none"> Past land use practices has led to degradation of coastal ecosystems and water quality, and very marked declines in inshore biodiversity 	<ul style="list-style-type: none"> Reef Plan action program Reef WQ Report Card 2011 Wastewater treatment plant improvements (tightening of 	Adequate	Improving

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
track to ensure the values of the Great Barrier Reef are protected (refer CO1)		<ul style="list-style-type: none"> • Actions to address the major impacting factor on reef health within the capacity of the Queensland Government to address (diffuse rural pollution) are now showing signs of being effective. • Controls over other forms of land use (urban, industrial, port and tourism) mean new impacts are minimal and ongoing impact from past decisions are being reduced. 	<ul style="list-style-type: none"> • licencing conditions) • Vegetation clearing controls • Previous Coastal SPP and new integrated SPP 		
OC3 the outputs (refer OP1 and 3) for coastal development are reducing the major risks and the threats to the Great Barrier Reef	2	<ul style="list-style-type: none"> • Coastal development contributes minimally to climate change • The other significant impact (poor catchment water quality) results from historic agricultural development and ongoing agricultural land management practices. These are being addressed through the Reef Plan action program. Improvements will only be achieved gradually. • Other forms of coastal development have only localised impacts and these have now been adequately addressed. 	<ul style="list-style-type: none"> • Science consensus statement • Reef Plan action program • Reef WQ Report Card • SPP • ERA licence conditions 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to coastal development is demonstrably environmentally sustainable	2	<ul style="list-style-type: none"> • Past development and land use practices, primarily agricultural development, have led to degradation of coastal ecosystems and water quality, and very marked declines in inshore biodiversity. • Decline in water quality, coral cover, etc. suggest that agricultural land management practices associated with coastal development is not environmentally sustainable. • Other forms of coastal development are well regulated 	<ul style="list-style-type: none"> • Informing the Outlook for Great Barrier Reef coastal ecosystems http://www.gbrmpa.gov.au/outlook-for-the-reef/great-barrier-reef-coastal-ecosystems Scientific consensus statement • BMP take up by rural land managers • Reef WQ Report Card 2011 	Adequate	Stable
OC5 Use of the Great Barrier Reef relating to coastal development is demonstrably economically sustainable	2	<ul style="list-style-type: none"> • Much of the economic drivers for Queensland occur along the coastal strip with increasing population growth (off a small base in the Great Barrier Reef Region) • Population growth is driven by national and international economic cycles (resource and tourism sectors primarily) 	<ul style="list-style-type: none"> • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	No clear trend
OC6 Use of the Great Barrier Reef relating to coastal development is demonstrably socially sustainable enhancing	3	<ul style="list-style-type: none"> • Increasing numbers of people are accessing the Reef for recreational and personal enjoyment • Some of the coastal development is detracting from the personal enjoyment, but are proving additional income to other sectors 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	No clear trend

Component of management of coastal development	Rating	Justification	Evidence/sources	Confidence	Trend
understanding and/or enjoyment		<ul style="list-style-type: none"> • Significant coastal development, particularly in relation to port development, is being driven by the mining boom. • Associated population pressures from fly-in-fly-out mine workers is leading to increased boating use, expanded impact areas and attitudes of new users 			
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address coastal development	2	<ul style="list-style-type: none"> • Many examples of partnerships • Reef Guardian program • LMACs and RACs • Eye on the Reef program • Existing liaison arrangements and specialist staff within the GBRMPA to manage these relationships 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • LMAC and RAC reports 	Adequate	Stable

Table 32 Calculation of grades for land-based run-off

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to land-based run-off are understood by managers	4	<ul style="list-style-type: none"> • The values of the Great Barrier Reef relevant to land-based run-off are well understood and documented. • The Scientific Consensus Statement (SCS) summarises the evidence that increased loads of suspended sediments, nutrients (nitrogen and phosphorus) and pesticides from land-based run-off all pose a high risk to some parts of the Great Barrier Reef. • The SCS states that while the diffuse run-off from agricultural lands pose broadscale major impacts on the GBR, point source discharges and diffuse run-off from urban and industrial areas provide localised impacts of minor significance. • The Great Barrier Reef Strategic Assessment Report, including the Mackay-Whitsundays Water Quality demonstration case, and the Technical Reports underpinning other demonstration case studies in the Region (dugong, coral, Princess Charlotte Bay, Cairns and Keppel Bay) also summarises the values. • The up-dated Reef Plan 2013 includes the latest information from new catchment modelling so that targets are linked to load reductions expected using best management practices. • Information from the Marine Monitoring Program which monitors water quality and the health of key marine ecosystems such as coral reefs and seagrass in the inshore Great Barrier Reef lagoon, is integrated into metrics that describe inshore marine water quality, seagrass and coral condition and trends in condition assessments are used to evaluate progress towards the Reef Plan 2020 goal for the marine environment as part of the Report Card. 	<ul style="list-style-type: none"> • Strategic Assessment Reports and Technical Reports • 2013 Scientific Consensus Statement (PDF, 808 KB) <p>Summary of evidence to support the Scientific Consensus Statement 2013</p> <ol style="list-style-type: none"> 1. Marine and coastal ecosystem impacts (http://www.reefplan.qld.gov.au/about/scientific-consensus-statement/ecosystem-impacts.aspx) 2. Resilience of Great Barrier Reef marine ecosystems and drivers of change (http://www.reefplan.qld.gov.au/about/scientific-consensus-statement/resilience-of-marine-ecosystems.aspx) 3. Relative risks to the Great Barrier Reef from degraded water quality (http://www.reefplan.qld.gov.au/about/scientific-consensus-statement/water-quality-risks.aspx) 4. Sources of sediment, nutrients, pesticides and other pollutants in the Great Barrier Reef catchment (http://www.reefplan.qld.gov.au/about/scientific-consensus-statement/sources-of-pollutants.aspx) 5. The water quality and economic benefits of agricultural management practices <ul style="list-style-type: none"> • Reef Plan Report Card: http://www.reefplan.qld.gov.au/measuring-success/report-cards/report-card-2011.aspx • Marine Monitoring Program Science Reports: http://www.gbrmpa.gov.au/resources-and- 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
			<p>publications/publications/annual-reef-rescue-marine-monitoring-science-report</p> <ul style="list-style-type: none"> Marine Monitoring Program Synthesis Reports: http://www.gbrmpa.gov.au/resources-and-publications/publications/annual-reef-rescue-marine-monitoring-program-report Reef Rescue Research and Development (http://www.reefrescueresearch.com.au/) NERP (http://www.nerptropical.edu.au/research) Seagrass monitoring http://research.jcu.edu.au/research/tropwater/publications/technical-reports Environmental values - Environmental Protection (Water) Policy 2009 http://www.ehp.qld.gov.au/water/policy/index.html 		
CO2 The current condition and trend of values relevant to land-based run-off are known by managers	4	<ul style="list-style-type: none"> Condition and trend of values such as annual average sediment load, total nitrogen load, dissolved nitrogen and pesticide loads to land-based run-off are measured through the Paddock to Reef Monitoring and modelling programme, which includes the Marine Monitoring Program and measuring the actions of land managers aimed at reducing land-based run-off. The SCS outlines the most recent estimates and sources of land-based run-off. 	<ul style="list-style-type: none"> Scientific Consensus statement Report Card 2011-Great Barrier Reef 'Informing the Outlook for Great Barrier Reef Coastal Ecosystems: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0006/28257/Informing-the-Outlook-for-Great-Barrier-Reef-coastal-ecosystems.pdf D'eath et al 2012¹³ Paddock to Reef (http://www.reefplan.qld.gov.au/measuring-success/paddock-to-reef.aspx) 	Adequate	Improving
CO3 Impacts (direct, indirect and cumulative) associated with land-based run-off are understood by managers.	4	<ul style="list-style-type: none"> The direct impacts of land-based run-off on the Great Barrier Reef are relatively well understood, and are summarised in the Strategic Assessment, the SCS statement and the Reef Plan. The indirect and cumulative impacts are starting to be identified, but are less well understood. For example, the relationship between increased nutrient loads and COTS outbreaks has been shown. The impacts of increased freshwater inflows during flood events with 	<ul style="list-style-type: none"> 2013 Scientific Consensus Statement Reef Water Quality Protection Plan 2013 (http://www.reefplan.qld.gov.au/about.aspx) Reef Plan strategies (http://www.reefplan.qld.gov.au/implementation/strategies.aspx) Reef Rescue R+D 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>concomitant increases in nutrients, sediments, pesticides as well as mine discharges are also acknowledged.</p> <ul style="list-style-type: none"> The SCS reports on qualitative and semi-qualitative assessment to estimate the relative risk of water quality to the Great Barrier Reef ecosystem health. This work examines the impacts of components of land-based run-off (for example, nitrogen, suspended sediments, etc.) on key values (such as seagrass beds and COTS outbreaks). The SCS also summarises the impact of multiple stressors such as low salinity, high nutrient loads and pesticides experienced during flood events on reef ecosystems. A comprehensive assessment of the coastal ecosystems which play such a fundamental role in the water quality impacting on the Great Barrier Reef has been undertaken. See report 'Informing the Outlook for Great Barrier Reef Coastal Ecosystems'. The report identifies that the footprint of urban expansion in the Great Barrier Reef catchment, while small, has generally doubled in areas south of Cooktown in the last decade. 	<p>((http://www.reefscueresearch.com.au/)</p> <ul style="list-style-type: none"> COTS R+D looking at COTS outbreaks and locations NERP program has looked at the effect of sediment and pollutants on corals and seagrass (http://www.nerptropical.edu.au/project/vulnerability-seagrass-habitats-to-flood-plume-impacts) NERP research (http://www.nerptropical.edu.au/program/water-quality-great-barrier-reef-and-torres-strait) 		
CO4 The broader (national and international) level influences relevant to land-based run-off are understood by managers.	4	<ul style="list-style-type: none"> Strategic Assessment Process and UNESCO World Heritage Committee and Advisory Body processes relating to the Great Barrier Reef have focused attention on the elaboration of attributes underpinning the outstanding universal value (OUV) of the Great Barrier Reef and MNES, and considers (among other things) the impact of land-based run-off on the OUV. State Party report to World Heritage Committee reflects thorough understanding of national and international influences. 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Climate change vulnerability assessment 2007 State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Stable
CO5 The stakeholders relevant to land-based run-off are well known by managers.	4	<ul style="list-style-type: none"> Achieving the goals and targets of Reef Plan relies on partnerships across all levels of government, industry, community groups, research organisations and landholders. The Partnership Committee consists of stakeholders, including industry groups, conservation organisations, regional NRM bodies and government officials with an independent chair. There is also an Independent Science Panel, Intergovernmental Operational Committee and a number of smaller advisory groups that support specific parts of the program. Various research organisations participate in the on-ground monitoring activities and Reef related research through Paddock to Reef and NERP, including AIMS, JCU, CSIRO and UQ. The Catchment and Coastal Reef Advisory Committee advises the GBRMPA in relation to actions that can be taken to address the risks to the Great 	<ul style="list-style-type: none"> Reef Water Quality Protection Plan 2013 (http://www.reefplan.qld.gov.au/about.aspx) RAC's: http://www.gbrmpa.gov.au/about-us/reef-advisory-committee Our Partners: http://www.gbrmpa.gov.au/our-partners 	Adequate	Stable

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Barrier Reef Marine Park identified in the Great Barrier Reef Outlook Report 2009 and subsequent studies.</p> <ul style="list-style-type: none"> • The Reef Guardian Farmers and Graziers Program, launched in 2011 is being developed and expanded to recognise good land and water stewards. It works with them and their industries to encourage and enable stewardship by others connected to the Reef. • Local Marine Advisory Committees provide contact with stakeholder groups at regional level • Through updating the regional WQIPs LGAs, scientists, modellers and other relevant regional stakeholders are being engaged in the process. • Systems Repair contracts between community groups and organisations and the Australian Government are in place to fund restoration and rehabilitation of coastal and riparian ecosystems. • Regional NRM bodies and involved with the delivery of funding on ground and engagement with the landholders. • Reef Guardian Schools • Reef Check • Seagrass-Watch • Regional Offices (GBRMPA CPG) 			
PLANNING					
PL1 There is a planning system in place that effectively addresses land-based run-off	4	<ul style="list-style-type: none"> • The Reef Plan 2013 is a collaborative program of coordinated projects and partnerships designed to improve the quality of water in the Great Barrier Reef through improved land management in reef catchments. <ul style="list-style-type: none"> ○ joint Australian and Queensland Government initiative that specifically focuses on non-point-source pollution. ○ sets ambitious but achievable targets for water quality and land management improvement, and identifies actions to improve the quality of water entering the Reef. ○ was updated in 2013 and details specific actions and deliverables to be completed by 2018. • Water Quality Improvement Plans have been funded by the Australian Government to be updated by three of the six reef catchment NRM bodies. These look at integrating existing actions and developing a strategic plan for future investment. • Coastal Ecosystems Assessment Framework: allows for a detective type approach, identifying the natural state, current modified state and the pressures and threats through current land use for a specific defined area. To 	<ul style="list-style-type: none"> • Queensland Wetland Program, Wetland Info website • http://www.epa.qld.gov.au/wetlandinfo/site/index.html • http://www.reefplan.qld.gov.au/resources/assets/reef-plan-2009.pdf • Coastal Ecosystems Assessment Framework • http://www.gbrmpa.gov.au/_data/assets/pdf_file/0003/28254/Coastal-Ecosystems-Assessment-Framework.pdf • Water quality guidelines for the Great Barrier Reef Marine ecosystems: • http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/water-quality-in-the-great-barrier-reef/water-quality-guidelines-for-the-great-barrier-reef • GBMP Act and Regulations – prohibit discharge of waste (s38DD) and pollution (s38DE). • Reef 2050 Plan (Reef Rescue: www.nrm.gov.au and 	Adequate	

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>ensure the methodology provides a robust and relevant framework for assessment, it was developed in partnership with the Queensland Department of Environment and Heritage Protection (EHP) and the Queensland Wetlands Program.</p> <ul style="list-style-type: none"> Water quality guidelines for the Great Barrier Reef marine ecosystems. The Great Barrier Reef Marine Park Authority has prepared Water Quality Guidelines for the Great Barrier Reef Marine Park (2010) with trigger levels for specific pollutants. If levels are outside the guidelines it is a prompt for managers to take action. Permitting system for marine outfalls/sewage treatment plants is in place. Water Quality must follow the Guidelines above and is assessed in accordance with the Great Barrier Reef Marine Park Regulations 1983 (88Q and 88R). 	<p>http://www.environment.gov.au/cleaner-environment/clean-water.html)</p> <ul style="list-style-type: none"> Water Quality Improvement Plans (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system2-2013-14-approved.pdf) 		
<p>PL2 The planning system for land-based run-off addresses the major factors influencing the Great Barrier Reef Region's values.</p>	<p>4</p>	<ul style="list-style-type: none"> The Reef Plan addresses the major pressures affecting non-point source pollutants. The establishment of Reef Plan in 2003 and the update in 2009 was supported by a body of scientific evidence showing a decline in reef water quality. To ensure that new knowledge was integrated into the implementation of management actions, an updated Scientific Consensus Statement was released to inform Reef Plan 2013. Reef Plan 2013 scope has expanded to include some work on protection and rehabilitation of coastal ecosystems and pollutants from urban environments, funded by the Australian Government. One of the projects is focusing on water quality improvement planning in urban environments along the Queensland coast. In response to the findings of the Outlook Report 2009, and to enable the assessment and prioritisation of issues for better management of coastal ecosystems, the Great Barrier Reef Marine Park Authority (GBRMPA) developed the Coastal Ecosystems Assessment Framework. The aim of this framework is to assess the ecological functions, the risks to these functions and the cumulative impacts at work across the catchment that are affecting the long-term health of the Great Barrier Reef in a holistic way. 	<ul style="list-style-type: none"> Reef Water Quality Protection Plan 2013 (http://www.reefplan.qld.gov.au/about.aspx) Coastal Ecosystems Assessment Framework http://www.gbrmpa.gov.au/_data/assets/pdf_file/0003/28254/Coastal-Ecosystems-Assessment-Framework.pdf Scientific Consensus Statement Systems Repair projects (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system1-2013-14-approved.pdf) Water Quality Improvement Plans (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system2-2013-14-approved.pdf) MERI strategy (http://www.nrm.gov.au/funding/meri/index.html) Reef Rescue Investment Prioritisation (http://www.nrm.gov.au/funding/reef-rescue/pubs/reef-rescue-priorities.pdf) Reef Rescue Toolbox (attachm,ent) 	<p>Adequate</p>	<p>Improving</p>
<p>PL3 Actions for implementation regarding land-based run-off are clearly identified within the plan</p>	<p>4</p>	<ul style="list-style-type: none"> The establishment of Reef Plan in 2003 and updated in 2009 and again in 2013 was supported by a body of scientific evidence showing a decline in reef water quality. Actions are clearly outlined in the Plan with accountable agencies named. To ensure that new knowledge was integrated into the implementation of management actions, an updated Scientific Consensus 	<ul style="list-style-type: none"> Reef Rescue guidelines (http://www.nrm.gov.au/funding/reef-rescue/pubs/reef-rescue-guidelines.pdf) Reef 2050 Plan (Reef Rescue: www.nrm.gov.au and http://www.environment.gov.au/cleaner- 	<p>Adequate</p>	<p>Improving</p>

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Statement was released to inform Reef Plan 2013. It was prepared by an independent panel of scientists with expertise in Great Barrier Reef Water Quality and reviewed by the Reef Plan Independent Science Panel.</p> <ul style="list-style-type: none"> Water quality improvement plans outline actions and priorities for investment and will assist in the prioritisation of on-ground funding within the regions in the future. Healthy Water Management Plans are a legislative tool that implements water quality actions. Environmental Values and Water Quality Objectives have been developed for Townsville and Mackay-Whitsundays in the last year or two. Several are under development now. 	<p>environment/clean-water.html)</p> <ul style="list-style-type: none"> Reef Rescue Investment Prioritisation (http://www.nrm.gov.au/funding/reef-rescue/pubs/reef-rescue-priorities.pdf) Reef Rescue Toolbox (attachment) Sustainable Environment MERI Plan (http://www.nrm.gov.au/funding/meri/pubs/sus-env-meri-plan.pdf) 		
<p>PL4 Clear, measurable and appropriate objectives for management of land-based run-off have been documented</p>	<p>4</p>	<ul style="list-style-type: none"> Reef Plan sets ambitious targets for improved water quality and land management practices and identifies actions to improve the quality of water entering the Reef. The 2013 update details specific actions and deliverables to be completed by 2018 when Reef Plan will be reviewed. WQIPs will provide regionally specific targets for land-based run-off reductions, which will assist in the prioritising of on-ground funding. 	<ul style="list-style-type: none"> Reef Water Quality Protection Plan 2013 (http://www.reefplan.qld.gov.au/about.aspx) Healthy Waters Management Plans (HWMPs) and Water Quality Improvement Plans (WQIPs) Scheduled HWMPs - http://www.ehp.qld.gov.au/water/policy/schedule1/index.html Individual WQIPs can be found at: Burnett-Baffle WQIP (http://www.bmrg.org.au/information.php/2/79), Mackay-Whitsunday WQIP (http://reefcatchments.com.au/), Burdekin WQIP (http://www.bdnrm.org.au/bwqip), Ross-Black Basins (Townsville) WQIP (http://www.creektocoral.org/cci/index.html), Tully WQIP (http://www.terrain.org.au/programs/water/water-quality.html), Barron/Trinity Inlet (http://www.terrain.org.au/programs/water/water-quality.html), Douglas WQIP 	<p>Adequate</p>	<p>Improving</p>
<p>PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to land-based run-off</p>	<p>4</p>	<ul style="list-style-type: none"> Paddock to Reef modelling and monitoring program measures the land-based run-off from farms, within the catchments (river monitoring) and measures appropriate indicators in the marine environment. One component of this program is the Marine Monitoring Program, which is a water quality and ecosystem health long-term monitoring program in the Great Barrier Reef lagoon that was established to track the effectiveness of the RWQPP. Objectives are: Marine biological monitoring: 	<ul style="list-style-type: none"> Paddock to Reef (http://www.reefplan.qld.gov.au/measuring-success/paddock-to-reef.aspx) Monitoring and evaluation strategy (http://www.reefplan.qld.gov.au/implementation/assets/reef-plan-monitoring-eval-strategy.pdf) – strategy for the next 5 years is being developed. Sustainable Environment MERI Plan (http://www.nrm.gov.au/funding/meri/pubs/sus-env-meri-plan.pdf) 	<p>Adequate</p>	<p>Improving</p>

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> ○ Measure trends (spatial and temporal) in the status of inshore coral reefs and seagrass to determine ecosystem health. ○ Ascertain whether the resilience of inshore coral reefs is maintained with the implementation of Reef Plan catchment management actions. Water quality monitoring: ○ Measure trends (spatial and temporal) in the concentrations of pollutants in the inshore marine environment. ○ Correlate marine pollutant concentrations with pollutant delivery at river mouths (will require modelling). ● These objectives are currently being updated through the review of the Marine Monitoring Program. ● Each project which involves the management of land-based run-off is required to undertake effective project monitoring, evaluation, reporting and improvement. Systems Repair projects are also required to undertake ecological monitoring at project sites. 	<p>http://www.nrm.gov.au/funding/meri/pubs/sus-env-meri-plan.pdf)</p> <ul style="list-style-type: none"> ● MERI strategy(http://www.nrm.gov.au/funding/meri/index.html) ● Biodiversity Fund MERI plan (http://www.environment.gov.au/cleanenergyfuture/biodiversity-fund/meri/pubs/bf-meri-program-plan.pdf) 		
<p>PL6 The main stakeholders and/or the local community are effectively engaged in planning to address land-based run-off</p>	<p>4</p>	<ul style="list-style-type: none"> ● There are many actions taking place to protect areas identified as matters of national significance and high ecological significance and to help restore their function: <ul style="list-style-type: none"> ● National Landcare programme supports communities, farmers and other land managers with funding to protect Australia's natural environment and sustainability. ● The goal of the joint Australian and Queensland governments' Reef Water Quality Protection Plan is to ensure that by 2020 the quality of water entering the Great Barrier Reef has no detrimental impact on its health and resilience. Many of the Reef Plan actions and deliverables require a partnership approach across organisations and the community. ● Regional NRM bodies are delivering water quality grants to landholders in their region to assist with implementing best management practices to improve the quality of water entering the Great Barrier Reef . ● Industry partners are working in partnership with NRM bodies and landholders to assist in the delivery of extension and training to implement best management practices to improve the quality of water entering the Great Barrier Reef. Community groups and NRM bodies are undertaking revegetation and restoration of key riparian, wetland and coastal ecosystems to improve the quality of water entering the Reef. ● Various relevant stakeholders are engaged at a regional level to 	<ul style="list-style-type: none"> ● Systems Repair (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system1-2013-14-approved.pdf) ● Water Quality grants (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-quality-2013-14-approved.pdf) ● Water quality partnerships (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-partnership-2013-14-approved.pdf) ● Water quality improvement plans (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system2-2013-14-approved.pdf) ● Reef catchments NRM regional plans and regional baseline funding (http://www.nrm.gov.au/funding/regional/index.html) 	<p>Adequate</p>	<p>Improving</p>

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>develop and update regional WQIPs which outline priorities and actions to address land-based run-off.</p> <ul style="list-style-type: none"> • As a requirement of regional baseline funding through the Australian Government, NRM bodies are expected to effectively engage stakeholders in planning activities. • The Reef Guardian Farmers and Graziers Program, launched in 2011 is being developed and expanded to recognise good land and water stewards. It works with them and their industries to encourage and enable stewardship by others connected to the Reef. • The Reef Guardian Farmers and Graziers program is consistent with grazing, cane, banana and other industry best management practice programs. 			
PL7 Sufficient policy currently exists to effectively address land-based run-off	4	<ul style="list-style-type: none"> • The Queensland Environmental Protection (Water) Policy 2009 (EPP Water) commenced on 28 August 2009 and replaces the original policy first released in 1997. • The GBRMPA is guided by the following policy : <ul style="list-style-type: none"> ○ sewage discharges ○ Reef water quality guidelines ○ Reef Plan ○ Position Statement on Aquaculture within the Great Barrier Reef Marine Park (which includes water quality aspects) • National Water Quality Management Strategy • WQIPs aligned with The Framework for Marine and Estuarine Water Quality Protection • Australia's Biodiversity Conservation Strategy 2010–2030: 	<ul style="list-style-type: none"> • (http://www.legislation.qld.gov.au/Acts_SLs/Acts_SL_E.htm) • Australia's Biodiversity Conservation Strategy 2010–2030: www.environment.gov.au/biodiversity/publications/strategy-2010-30/index.html • (http://www.environment.gov.au/topics/water/water-quality/national-water-quality-management-strategy) • (http://www.environment.gov.au/resource/framework-marine-and-estuarine-water-quality-protection-reference-document) • (http://www.reefplan.qld.gov.au/implementation/strategies.aspx) 	Adequate	Improving
PL8 There is consistency across jurisdictions when planning for land-based run-off	4	<ul style="list-style-type: none"> • Reef Plan was developed to coordinate an effective cross-jurisdictional approach to addressing water quality issues facing the Great Barrier Reef, as a result of diffuse-source agricultural pollution. • The Paddock to Reef program, funded jointly by the Australian and Queensland Governments, is a collaboration involving industry, regional natural resource management organisations, research organisations and government. The Paddock to Reef Program integrates cross-jurisdictional information on management practices, catchment indicators, catchment water quality and the ecological health of the Great Barrier Reef. • There are still inconsistencies in the planning systems when it comes to waste/pollution that is generated outside the Great Barrier Reef Region (for 	<ul style="list-style-type: none"> • regional natural resource management plans, issues for the region and contact information: www.nrm.gov.au/about/nrm/regions/index.html • Reef Alliance (http://qff.org.au/wp-content/uploads/2011/10/Reef-Rescue_Impact-Statement_2011.pdf) 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>example, in creeks or from mainland) and washes into the Marine Park, especially for industrial waste.</p> <ul style="list-style-type: none"> Reef 2050 Plan is being developed in close collaboration with partners and the Queensland Government. Australian Government funded WQIP development and updating is to be consistent with the National Water Quality Management Strategy and Healthy Water Management Plans. <ul style="list-style-type: none"> GBRMPA and Queensland Government are involved to ensure consistency in the development of WQIPs as well. <p>Decisions and initiatives are developed in collaboration with partners to ensure as much consistency as possible. The Reef Alliance provides advice and coordinates collaboration between regions and industries to improve the quality of water entering the Great Barrier Reef.</p>			
PL9 Plans relevant to land-based run-off provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	2	<ul style="list-style-type: none"> There is no integrated policy/strategy to provide certainty about what uses may occur along the Great Barrier Reef coast. However, the draft Great Barrier Reef strategic assessment and program report considers many of these issues. Within the Great Barrier Reef Region the Zoning Plan provides some guidance on what activities can occur where – some of these activities have associated water quality aspects to them, for example, structures with an allowance for the discharge of waste with a permit. This is allowed in all zones except Preservation Zones (which are a very small part of the Marine Park). Situations where cumulative impacts are likely to be unacceptable are not well managed. For example, individual outfalls may be required to report on their discharge quality, but cumulative water quality impacts are not measured. Any overall decrease in water quality (from a number of stressors) is not measured and therefore not incorporated into reactive management where systems and conditions are evaluated and adapted to achieve the best environmental outcomes 	<ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment GBRMPA Zoning plan 	Adequate	Stable
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address land-based run-off	4	<ul style="list-style-type: none"> There are major programs dedicated to improving water quality entering the Great Barrier Reef, including the Reef Rescue package and the Reef Water Quality Protection Plan. Investment is targeted within and between NRM regions. The Reef Rescue Research & Development (R&D) program is an important part of Reef Rescue, and has included 18 research projects. Over \$9 million was invested between May 2011 and June 2013, with results informing 	<ul style="list-style-type: none"> Australian Government Projects: (http://www.nrm.gov.au/funding/approved/2013-14/index.html#reef-2013-14 and http://www.environment.gov.au/topics/marine/great-barrier-reef/protecting-reef) Further investments: Reef 2050 Plan and Reef Trust (http://www.environment.gov.au/cleaner- 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>prioritisation of on-ground actions to reduce sediment, nutrient and pesticide loads entering the Great Barrier Reef.</p> <ul style="list-style-type: none"> Further investments of \$40M have been announced by the Australian Government which includes the establishment of a Reef Trust to address water quality issues. 	<p>environment/clean-water.html)</p> <ul style="list-style-type: none"> Reef Rescue Package Projects: http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/water-quality-in-the-great-barrier-reef 		
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address land-based run-off	3	<ul style="list-style-type: none"> There are human resources supporting Reef Plan through the Secretariat and in various Queensland agencies. Staff resources within the GBRMPA have not changed significantly, despite the significant increase in the amount of work in implementing, monitoring and reporting on Reef Plan and associated programs. Significant levels of resources are directed towards work, which aims to improve the quality of water entering the Great Barrier Reef at a Federal level. Continuation of funding has ensured that staff in industries and regional bodies can continue to deliver services, which were established in the last phase of Reef Rescue. 	<ul style="list-style-type: none"> DSEWPac's Annual Report (appendices indicate staff levels http://www.environment.gov.au/system/files/resources/63db8a54-bfcb-429e-93b4-e5efe21a356e/files/dsewpac-annual-report-12-13new.pdf) 	Adequate	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address land-based run-off		<ul style="list-style-type: none"> Regional bodies offer training to staff and through application process, organisations are assessed on their capacity and expertise prior to awarding funding. The Australian and Queensland governments have suitably trained staff 	<ul style="list-style-type: none"> RR R+D newsletter (http://rrrc.cmail1.com/t/ViewEmail/j/4844A666BB109072/1B7EB3412092CD18F6A1C87C670A6B9F) Investment prioritisation (http://www.nrm.gov.au/funding/reef-rescue/pubs/reef-rescue-priorities.pdf) 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address land-based run-off	3	<ul style="list-style-type: none"> The Reef Rescue Marine Monitoring Program monitors and reports on water quality and the health of key marine ecosystems such as coral reefs and seagrass in the inshore Great Barrier Reef lagoon. Information from the Marine Monitoring Program is integrated into metrics that describe inshore marine water quality, seagrass and coral condition and trends in condition assessments are used to evaluate progress towards the Reef Plan 2020 goal for the marine environment as part of the Report Card. The overall objective of <i>Reef Rescue R&D</i> was to improve understanding of the link between land management practices and environmental impacts, and to improve water quality across the Great Barrier Reef by supporting a reduction in the amount of nutrients, chemicals and sediments reaching the Reef from agricultural lands. However, because the Great Barrier Reef is a large, spatially and temporally heterogeneous ecosystem and a long time-lag is expected before 	<ul style="list-style-type: none"> Reef Rescue R+D (http://www.reefrescueresearch.com.au/) NERP program has looked at the effect of sediment and pollutants on corals and seagrass (http://www.nerptropical.edu.au/project/vulnerability-seagrass-habitats-to-flood-plume-impacts) NERP research (http://www.nerptropical.edu.au/program/water-quality-great-barrier-reef-and-torres-strait) Paddock to Reef (http://www.reefplan.qld.gov.au/measuring-success/paddock-to-reef.aspx) and http://www.reefplan.qld.gov.au/measuring-success/case- 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		management responses translate into measureable changes in marine water quality and ecosystem function, more intensive monitoring coupled with modelling of the marine environment is required.	studies/case-studies.aspx		
IN5 The necessary socio-economic information is currently available to address land-based run-off	3	<ul style="list-style-type: none"> Some socio-economic mapping has been carried out with respect to the ecosystem services provided by coastal ecosystems which includes water quality. RRRD039 Integrated assessment of Best Management Practices cost-effectiveness and decision support for regions and landholders Socio-economic long-term monitoring program (SELTMP) Department of the Environment - National Environmental Research Program - Tropical Ecosystems Hub - Socio-economic systems and reef resilience (\$706,000 over six years) This project focuses on relationships between socio-economic systems and the Great Barrier Reef. It comprises three interrelated activities which seek to improve our understanding of (a) resident and tourist views about the relative 'value' of key ecosystem services that are provided by the Reef; (b) tourist views about the relative value of key attributes of reef health, and the likely consequence (for example fewer visits, less expenditure) of deterioration in reef health; and (c) the extent to which variations in beef prices, the exchange rate and other socio-economic variables (in conjunction with biophysical variables) influence water quality in the Great Barrier Reef lagoon. 	<ul style="list-style-type: none"> RRRD010 (http://www.reefrescueresearch.com.au/research/all-projects/29-rrrd010-factors-affecting-adoption-of-land-management-practices-that-have-water-quality-benefits-in-the-qbr-catchments-evaluation-scenarios-for-cane-farming.html) RRRD039 (http://www.reefrescueresearch.com.au/research/all-projects/21-rrrd039-integrated-assessment-of-best-management-practices-cost-effectiveness-and-decision-support-for-regions-and-landholders.html) Socio-economic systems and reef resilience (http://research.jcu.edu.au/portfolio/natalie.stoeckl) 	Adequate	Improving
IN6 The necessary Indigenous heritage information is currently available to address land-based run-off	3	<ul style="list-style-type: none"> As part of the WQIP planning process, development of NRM regional plans and the delivery of NRM regional baseline funding, Traditional Owners are also being engaged. Two Systems Repair grants are managed by Indigenous groups and NRM regional bodies often have Traditional Owners on their Boards to aid in management decisions. 	<ul style="list-style-type: none"> Reef Rescue Systems Repair and urban water quality on-ground and planning grants, application forms Systems Repair (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system1-2013-14-approved.pdf) Water quality improvement plans (http://www.nrm.gov.au/funding/approved/2013-14/pubs/reef-system2-2013-14-approved.pdf) NRM regional delivery (http://www.nrm.gov.au/funding/regional/index.html) 	Adequate	Stable
IN7 The necessary historic heritage information is	n/a				

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
currently available to address land-based run-off					
IN8 There are additional sources of non-government input (for example volunteers) contributing to address land-based run-off	4	<ul style="list-style-type: none"> Through the water quality grants and partnerships, significant contributions are provided by industry and landholders, with industry investing \$1.60 (in kind labour, farmer equipment and machinery work) for every \$1 grant money received. Contributions are made from other organisations, such as LGAs, for Systems Repair and WQIP grants. The Marine Monitoring Program is a collaborative effort across government and four partner organisations. The Marine Monitoring Program relies on local community members to conduct pesticide sampling. In addition, the monitoring provider organisations contribute a significant proportion of in-kind funds to the Program. The Reef Guardian Farmers and Graziers Program, launched in 2011 is being expanded to recognise good land and water stewards. It works with them and their industries to encourage and enable stewardship by others connected to the Reef. 		Adequate	Improving
PROCESSES					
PR1 The main stakeholders &/or industry(ies) are effectively engaged in the ongoing management of land-based run-off	3	<ul style="list-style-type: none"> Water Quality Grants and Partnerships engage the relevant stakeholders who actively work with the industries to implement best management practices and improve the quality of water entering the Great Barrier Reef. The Paddock to Reef program, funded jointly by the Australian and Queensland Governments, is a collaboration involving industry, regional natural resource management organisations, research organisations and government. The actions identified under Reef Plan require a partnership approach between many organisations and the community. The Marine Monitoring Program is a collaborative effort across government and four partner organisations. The Marine Monitoring Program providers are engaged in promoting the implications of the monitoring results for management efforts and the local community. 	<ul style="list-style-type: none"> Healthy Waters Management Plans (HWMPs) and Water Quality Improvement Plans (WQIPs) http://www.ehp.qld.gov.au/water/policy/water_quality_improvement_plans.html Scheduled HWMPs - http://www.ehp.qld.gov.au/water/policy/schedule1/index.html Individual WQIPs can be found at: Burnett-Baffle WQIP (http://www.bmrg.org.au/information.php/2/79), Mackay-Whitsunday WQIP (http://reefcatchments.com.au/), Burdekin WQIP (http://www.bdtm.org.au/bwqip), Ross-Black Basins (Townsville) WQIP (http://www.creektocoral.org/ccl/index.html), Tully WQIP (http://www.terrain.org.au/programs/water/water- 	Adequate	Improving
PR2 The local community is	3	<ul style="list-style-type: none"> Local NRM regions and/or Councils (for example, Townsville urban area) 	<ul style="list-style-type: none"> Healthy Waters Management Plans (HWMPs) and Water 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
effectively engaged in the ongoing management of land-based run-off		<p>have ongoing programs reporting to community and holding various forums about land-based run-off.</p> <ul style="list-style-type: none"> Funding for review and revamps of Wet Tropics, Mackay Whitsunday and Burnett Mary Water Quality Improvement Plans has been provided. This will include support for public involvement in the development/review of the plans. Healthy Water Management Plans are a legislative tool that implements water actions and also includes key aspects of the process to develop Environmental Values (EVs) which includes appropriate consultation with the community and consideration of social and economic impacts of protecting the EVs. A number have been developed in the last year or two. Several are under development now. Reef Rescue delivery workshops are advising the community about outcomes of science consensus statement. The Australian Government funded WQIP updates require extensive stakeholder engagement and involvement. Regions are planning community forums as well. The Marine Monitoring Program relies on local community members to conduct pesticide sampling. The Marine Monitoring Program providers are engaged in promoting the implications of the monitoring results for management efforts and the local community. The Reef Guardian Farmers and Graziers Program, launched in 2011 is being expanded to recognise good land and water stewards. It works with them and their industries to encourage and enable stewardship by others connected to the Reef. Cane and grazing BMPs – Development of the Best Management Practice (BMP) programs for sugarcane and grazing is almost complete. The Grazing BMP program is a voluntary, industry-led process which helps graziers to identify improved practices which can help increase the long-term profitability of their enterprise. Canegrowers is developing the SmartCane BMP which will be a world-class best practice system for sugarcane growing. 	<p>Quality Improvement Plans (WQIPs)</p> <ul style="list-style-type: none"> http://www.ehp.qld.gov.au/water/policy/water_quality_improvement_plans.html Scheduled HWMPs - http://www.ehp.qld.gov.au/water/policy/schedule1/index.html Individual WQIPs can be found at: Burnett-Baffle WQIP (http://www.bmrg.org.au/information.php/2/79), Mackay-Whitsunday WQIP (http://reefcatchments.com.au/), Burdekin WQIP (http://www.bdnrm.org.au/bwqip), Ross-Black Basins (Townsville) WQIP (http://www.creektocoral.org/cci/index.html), Tully WQIP (http://www.terrain.org.au/programs/water/water-quality.html), Barron/Trinity Inlet (http://www.terrain.org.au/programs/water/water-quality.html), Douglas WQIP The announcements about funding, together with case studies explaining partnerships http://www.nrm.gov.au/about/key-investments/reef-rescue.html For more information, visit the Grazing BMP website (http://www.bmpgrazing.com.au/#&panel1-1) or Canegrowers website.(http://www.canegrowers.com.au/page/Industry_Centre/bmp/) Regional delivery (http://www.nrm.gov.au/funding/regional/index.html) 		
PR3 There is a sound governance system in place to address land-based run-off	3	<ul style="list-style-type: none"> Complex arrangements have delivered real progress in terms of a coordinated government effort Reef Plan provides an integrated approach to water quality improvement. There are still inconsistencies in the governance systems when it comes to waste/pollution that is generated outside the Great Barrier Reef (for example, in creeks or from mainland) and washes into the Marine Park; especially for industrial waste. 	<ul style="list-style-type: none"> Reef Plan 2013 (http://www.reefplan.qld.gov.au/about/committees.aspx) http://www.reefplan.qld.gov.au/about/whos-involved.aspx 	Adequate	Stable

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for land-based run-off	3	<ul style="list-style-type: none"> MERI processes are in place for all contracts with the Australian Government. Reef Plan has clear water quality targets, and catchment and land management targets. Three priority work areas have been established to improve water quality outcomes: prioritising investment and knowledge, responding to the challenge, and evaluating performance. Lead organisations are responsible for coordinating implementation and reporting progress to ensure actions are completed and milestones met. The Paddock to Reef program, an integral component of Reef Plan, is a collaboration involving industry, regional natural resource management organisations, research organisations and government. The Paddock to Reef Program involves monitoring and modelling which integrates information on management practices, catchment indicators, catchment water quality and the ecological health of the Great Barrier Reef. The data produced from this program is published as Report Cards, which clearly indicate progress towards achieving the targets. The Reef Rescue Marine Monitoring Program monitors and reports on water quality and the health of key marine ecosystems such as coral reefs and seagrass in the inshore Great Barrier Reef lagoon. The Marine Monitoring Program has a MERI plan that ensures activities are appropriate and adequate. Information from the Marine Monitoring Program is integrated into metrics that describe inshore marine water quality, seagrass and coral condition and trends in condition assessments are used to evaluate progress towards the Reef Plan 2020 goal for the marine environment as part of the Report Card. 	<ul style="list-style-type: none"> Sustainable Environment MERI Plan (http://www.nrm.gov.au/funding/meri/pubs/sus-env-meri-plan.pdf) MERI strategy (http://www.nrm.gov.au/funding/meri/index.html) Biodiversity Fund MERI plan (http://www.environment.gov.au/cleanenergyfuture/biodiversity-fund/meri/pubs/bf-meri-program-plan.pdf) 	Adequate	Improving
PR5 Appropriate training is available to the managing agencies to address land-based run-off	3	<ul style="list-style-type: none"> Technical experts are engaged when needed and staff often have a technical background 	<ul style="list-style-type: none"> Reef Alliance provides consistency of implementation across the regions (http://qff.org.au/wp-content/uploads/2011/10/Reef-Rescue_Impact-Statement_2011.pdf) 	Adequate	Improving
PR6 Management of land-based run-off is consistently implemented across the relevant		<ul style="list-style-type: none"> The Reef Plan is an intergovernmental agreement involving numerous partners to improve the quality of water entering the Great Barrier Reef, The Paddock to Reef program, an integral component of Reef Plan, is a collaboration involving industry, regional natural resource management 	<ul style="list-style-type: none"> Reef Plan 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
jurisdictions		<p>organisations, research organisations and government. The Paddock to Reef Program integrates information on management practices, catchment indicators, catchment water quality and the ecological health of the Great Barrier Reef.</p> <ul style="list-style-type: none"> • Cross-regional collaboration and communication is common – the Reef Alliance ensures consistent communication and collaboration between regional bodies and industries. 			
PR7 There are effective processes applied to resolve differing views/ conflicts regarding land-based run-off	3	<ul style="list-style-type: none"> • Review rights exist for all permit applications, and there are public comment periods for applications and policy. • LMACs and RACs have been involved in Reef Plan development and implementation 	<ul style="list-style-type: none"> • LMAC and RAC Reports • Relevant legislation 	Adequate	Improving
PR8 Impacts (direct, indirect and cumulative) of activities associated with land-based run-off are appropriately considered.	3	<ul style="list-style-type: none"> • Scientific Consensus Statement has been utilised to make management decisions. • Reef Rescue Research and Development has informed prioritisation of management actions. • Information from the Marine Monitoring Program is integrated into metrics that describe inshore marine water quality, seagrass and coral condition and trends in condition assessments are used to evaluate progress towards the Reef Plan 2020 goal for the marine environment as part of the Report Card. • Outcomes from NERP projects delivering information on cumulative and interactive effects are incorporated into policy and reports 	<ul style="list-style-type: none"> • GBRMPA's draft program report for the strategic assessment – cumulative impact assessment policy • Reef Rescue R+D (http://www.reefrescueresearch.com.au/) • NERP program has looked at the effect of sediment and pollutants on corals and seagrass (http://www.nerptropical.edu.au/project/vulnerability-seagrass-habitats-to-flood-plume-impacts) • NERP research (http://www.nerptropical.edu.au/program/water-quality-great-barrier-reef-and-torres-strait) • Paddock to Reef (http://www.reefplan.qld.gov.au/measuring-success/paddock-to-reef.aspx) and http://www.reefplan.qld.gov.au/measuring-success/case-studies/case-studies.aspx 	Adequate	Improving
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding	4	<ul style="list-style-type: none"> • Reef Plan and the Marine Monitoring Program are reviewed as part of the adaptive management cycle to ensure the best available information is generated and applied appropriately to make management decisions. • The SCS provided further information for the review of the Reef Plan • Coastal assessment framework is improving the delivery of science to decision making 	<ul style="list-style-type: none"> • Reef Rescue R+D (http://www.reefrescueresearch.com.au/) • NERP program has looked at the effect of sediment and pollutants on corals and seagrass (http://www.nerptropical.edu.au/project/vulnerability-seagrass-habitats-to-flood-plume-impacts) • NERP research 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
land-based run-off		<ul style="list-style-type: none"> The Reef Rescue Research & Development (R&D) program is an important part of Reef Rescue, and has included 18 research projects. Over \$9 million was invested between May 2011 and June 2013, with results informing prioritisation of on-ground actions to reduce sediment, nutrient and pesticide loads entering the Great Barrier Reef. All of the projects have generated technical reports of the research findings. The Reef and Rainforest Research Centre (RRRC) has also prepared an overall final program report that summarises the key findings and future directions for <i>Reef Rescue R&D</i>. To facilitate uptake of <i>Reef Rescue R&D</i> results, five regional science forums were resourced through Reef Rescue to bring researchers, managers and research users together to review the research outcomes, and discuss how to progress these outcomes into practical on-ground benefits. Regional forums were held in Mackay, Rockhampton, Cairns, Bundaberg and Townsville during September and October, 2013 coordinated by the RRRC in collaboration with regional NRM groups. NERP programme does research on the impacts of poor water quality on various species 	<p>(http://www.nerptropical.edu.au/program/water-quality-great-barrier-reef-and-torres-strait)</p> <ul style="list-style-type: none"> Paddock to Reef (http://www.reefplan.qld.gov.au/measuring-success/paddock-to-reef.aspx) and http://www.reefplan.qld.gov.au/measuring-success/case-studies/case-studies.aspx 		
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding land-based run-off	3	<ul style="list-style-type: none"> The design of a socio-economic long-term monitoring program (SELTMP) is being implemented through the NERP – (Project 10.1.) Results of this project, together with results from NERP Project 10.2, and results from a new visitor survey installed in Reef HQ will help deliver PR11, as these monitoring tools will enable managers to understand people's values and perceptions in relation to catchment run-off. There are no guidelines for the application of social or economic impact in decision-making processes under the GBRMP Act, EPBC Act or possibly Queensland legislation. Various Reef Rescue R+D projects look at the socio-economic benefits of implementing best management practices and the results are utilised in investment prioritisation and on ground extension and training. 	<ul style="list-style-type: none"> The economic and social impacts of protecting environmental values in Great Barrier Reef catchment waterways and the reef lagoon Deloitte Economics (2013) Economic Contribution of the Great Barrier Reef, Great Barrier Reef Marine Park Authority¹⁹ Socio-economic systems and reef resilience (http://research.jcu.edu.au/portfolio/natalie.stoeckl) Reef Rescue R+D (http://www.reefrescueresearch.com.au/research/all-projects.html) 	Adequate	Improving
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management	NA				

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
decisions regarding land-based run-off					
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding land-based run-off	NA				
PR13 Relevant standards are identified and being met regarding land-based run-off	3	<ul style="list-style-type: none"> Reef Plan has clear water quality targets, and catchment and land management targets. Three priority work areas have been established to improve water quality outcomes: prioritising investment and knowledge, responding to the challenge, and evaluating performance. The Reef Rescue Marine Monitoring Program monitors and reports on water quality and the health of key marine ecosystems such as coral reefs and seagrass in the inshore Great Barrier Reef lagoon. The Marine Monitoring Program results are assessed against the Water Quality Guidelines for the Great Barrier Reef Marine Park. Information from the Marine Monitoring Program is integrated into metrics that describe inshore marine water quality, seagrass and coral condition and trends in condition assessments are used to evaluate progress towards the Reef Plan 2020 goal for the marine environment as part of the Report Card. WQIP updates will result in regionally based water quality targets 	<ul style="list-style-type: none"> Reef Plan 	Adequate	Improving
PR14 Targets have been established to benchmark management performance for land-based run-off	4	<ul style="list-style-type: none"> Reef Plan 2013 provides a long-term goal: <i>To ensure that by 2020 the quality of water entering the Reef from broadscale land use has no detrimental impact on the health and resilience of the Great Barrier Reef.</i> Water quality and land and catchment management targets are set. WQIP updates will result in regionally based water quality targets. 	<ul style="list-style-type: none"> Water quality targets set for 2018 <ul style="list-style-type: none"> At least a 50 per cent reduction in anthropogenic end-of-catchment dissolved inorganic nitrogen loads in priority areas. At least a 20 per cent reduction in anthropogenic end-of-catchment loads of sediment and particulate nutrients in priority areas. At least a 60 per cent reduction in end-of-catchment pesticide loads in priority areas. Land and catchment management targets (2018) <ul style="list-style-type: none"> 90 per cent of sugarcane, horticulture, cropping and grazing lands are managed using best management practice systems (soil, nutrient and pesticides) in 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
			<p>priority areas.</p> <ul style="list-style-type: none"> • Minimum 70 per cent late dry season groundcover on grazing lands. • The extent of riparian vegetation is increased. • There is no net loss of the extent, and an improvement in the ecological processes and environmental values, of natural wetlands. 		
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for land-based run-off	3	<ul style="list-style-type: none"> • Reef Plan well on track, Reef Rescue 1 (2008-2013), \$200 million committed, activities delivered and being acquitted. Results are indicating that targets have been met or exceeded after the five years of investment. 	<ul style="list-style-type: none"> • Report Cards – 2009, 2010, 2011 • Caring for our Country 2008-2013 – Reef Rescue targets (http://www.nrm.gov.au/about/caring/priorities/coastal.html) • Caring for our Country Achievements Report (http://www.nrm.gov.au/about/caring/achievements-report/pubs/achieve-report-cecah.pdf) 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to land-based run-off have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> • Work in progress to implement Reef Plan objectives and targets • Implementation Plans are guiding the current Reef Plan 2013 implementation, with clearly set out timeframes, deliverables and accountable agencies. • Reef Rescue phase one was finalised in time for the commitment to provide further funding to improve the quality of water entering the Great Barrier Reef. 	<ul style="list-style-type: none"> • Reef Plan 	Adequate	Improving
OP3 The results (in OP1 above) have achieved their stated management objectives for land-based run-off	3	<ul style="list-style-type: none"> • The Great Barrier Reef Report Card 2011 shows solid progress towards key targets including land management practice, with 34 per cent of sugarcane growers, 17 per cent of graziers and 25 per cent of horticulture producers adopting improved management practices. • As a result, nitrogen levels have reduced by seven per cent, pesticides by 15 per cent and sediment by six per cent. Dissolved nitrogen, the key pollutant of concern due to its influence on crown-of-thorns starfish outbreaks, also reduced by 13 per cent. • This represents very good progress towards the five-year Reef Rescue targets for soluble nutrients (84 per cent achievement of pro-rata target), pesticides (97 per cent achievement of pro-rata target), particulate nutrients 	<ul style="list-style-type: none"> • Report Cards – 2009, 2010, 2011 • Caring for our Country 2008-2013 – Reef Rescue targets (http://www.nrm.gov.au/about/caring/priorities/coastal.html) • Caring for our Country Achievements Report (http://www.nrm.gov.au/about/caring/achievements-report/pubs/achieve-report-cecah.pdf) 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>(87 per cent achievement of pro-rata target) and sediment (93 per cent achievement of pro-rata target).</p> <ul style="list-style-type: none"> Improvements are being made to the quality of water entering the Reef, however there will be significant time lags between land management practice change and seeing improved condition of the Reef. 			
OP4 To date, products or services have been produced in accordance with the stated management objectives for land-based run-off	3	<ul style="list-style-type: none"> Reef Report Cards have been delayed but a combined publication in 2012-13 will bring the results up to date. Coastal Ecosystems Assessment Framework completed 'Informing the Outlook for Great Barrier Reef Coastal Ecosystems finalised RSP Project – Further basin assessments as part of the coastal ecosystem assessment framework –May 2013. <i>Reef Rescue R&D</i> results on track 	<ul style="list-style-type: none"> Report Cards – 2009, 2010, 2011 Caring for our Country 2008-2013 – Reef Rescue targets (http://www.nrm.gov.au/about/caring/priorities/coastal.html) Caring for our Country Achievements Report (http://www.nrm.gov.au/about/caring/achievements-report/pubs/achieve-report-cecah.pdf) 	Adequate	Improving
OP5 Effective knowledge management systems regarding land-based run-off are in place within agencies	3	<ul style="list-style-type: none"> To facilitate uptake of <i>Reef Rescue R&D</i> results, five regional science forums were resourced through Reef Rescue to bring researchers, managers and research users together to review the research outcomes, and discuss how to progress these outcomes into practical on-ground benefits. Regional forums were held in Mackay, Rockhampton, Cairns, Bundaberg and Townsville during 2013, coordinated by the RRRC in collaboration with regional NRM groups. The facilitation of knowledge transfer will continue throughout the next phase of water quality grants. 	<ul style="list-style-type: none"> Report Cards – 2009, 2010, 2011 Caring for our Country 2008-2013 – Reef Rescue targets (http://www.nrm.gov.au/about/caring/priorities/coastal.html) Caring for our Country Achievements Report (http://www.nrm.gov.au/about/caring/achievements-report/pubs/achieve-report-cecah.pdf) 	Adequate	Improving
OP6 Effective systems are in place to share knowledge on land-based run-off with the community	3	<ul style="list-style-type: none"> To facilitate uptake of <i>Reef Rescue R&D</i> results, five regional science forums were resourced through Reef Rescue to bring researchers, managers and research users together to review the research outcomes, and discuss how to progress these outcomes into practical on-ground benefits. Regional forums were held in Mackay, Rockhampton, Cairns, Bundaberg and Townsville during 2013, coordinated by the RRRC in collaboration with regional NRM groups. Yearly Reef Rescue forums are held which are open for all to attend. Reef Guardians program. At a regional level, the NRM regional bodies engage with their regional communities at field days, awareness raising events, media campaigns and workshops to generate interest in participating in the community. These are 	<ul style="list-style-type: none"> Reef Rescue awards (http://us6.campaign-archive2.com/?u=be9cc2409cc555bcb17498482a&id=2503fc3c5a&e=49b11afadf) 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>all fact based and involve the transfer of knowledge by experts.</p> <ul style="list-style-type: none"> • Reef Rescue awards have raised the profile of water quality issues in the communities • Industry Best management Practice programs assist in sharing knowledge of the best available practices to improve the quality of water exiting farms • Extension officers are funded through the Australian Government, Queensland Government and Industry in order to deliver these services. • Workshops and extension and training ensure knowledge is conveyed. 			
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing land-based run-off and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> • An Independent Audit of the Reef Water Quality Protection Plan 2009 (Reef Plan) was undertaken in late 2010 and early 2011. The audit found that progress was positive overall and the partners involved in the program felt positive, engaged and committed. • The audit found there had been positive progress in implementing the 11 actions, particularly given the short time frames since Reef Plan 2009 was formally endorsed and the significant number of people involved in the program. • The audit, however, also highlighted some areas for improvement and the Australian and Queensland governments are committed to continually improving the program. Further audits will be undertaken as necessary to assess progress with implementing Reef Plan. 	<ul style="list-style-type: none"> • Report Cards 	Adequate	Improving
OC2 The outputs relating to land-based run-off are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	2	<ul style="list-style-type: none"> • The Great Barrier Reef Report Card 2011 shows solid progress towards key targets including land management practice, with 34 per cent of sugarcane growers, 17 per cent of graziers and 25 per cent of horticulture producers adopting improved management practices. • As a result, nitrogen levels have reduced by seven per cent, pesticides by 15 per cent and sediment by six per cent. Dissolved nitrogen, the key pollutant of concern due to its influence on crown-of-thorns starfish outbreaks, also reduced by 13 per cent. • While these results are promising, the long term cumulative effects of land-based run-off is one of the major risks to the reef and it is likely to be decades before the full benefits of these initiatives are seen. • 	<ul style="list-style-type: none"> • Reef Plan Report Card 	Adequate	Improving
OC3 the outputs (refer OP1 and 3) for land-based run-off	3	<ul style="list-style-type: none"> • Each review of Reef Plan aims to improve the prioritisation of investments aimed at improving water quality and ecosystem health. 	<ul style="list-style-type: none"> • Reef Plan Report Card 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
are reducing the major risks and the threats to the Great Barrier Reef		<ul style="list-style-type: none"> The Great Barrier Reef Report Card 2011 shows solid progress towards key targets including land management practice, with 34 per cent of sugarcane growers, 17 per cent of graziers and 25 per cent of horticulture producers adopting improved management practices. As a result, nitrogen levels have reduced by seven per cent, pesticides by 15 per cent and sediment by six per cent. Dissolved nitrogen, the key pollutant of concern due to its influence on crown-of-thorns starfish outbreaks, also reduced by 13 per cent. This represents very good progress towards the five-year Reef Rescue targets for soluble nutrients (84 per cent achievement of pro-rata target), pesticides (97 per cent achievement of pro-rata target), particulate nutrients (87 per cent achievement of pro-rata target) and sediment (93 per cent achievement of pro-rata target). 			
OC4 Use of the Great Barrier Reef relating to land-based run-off is demonstrably environmentally sustainable	2	<ul style="list-style-type: none"> Water quality is still seen as a major issue in the protection of the Reef and there is no evidence to confirm that current conditions are sustainable. 	<ul style="list-style-type: none"> Scientific Consensus Statement (Brodie et al) 	Adequate	Improving
OC5 Use of the Great Barrier Reef relating to land-based run-off is demonstrably economically sustainable	2	<ul style="list-style-type: none"> The Reef contributes \$5.4 billion to the Australian economy and supports significant regional employment through tourism, fishing and other industries. The beef, cane and horticulture industries in Reef catchments contribute approximately \$3.7 billion a year in gross value of production and also support significant regional employment. JCU work shows that water quality (clarity) is an issue for tourism 	<ul style="list-style-type: none"> The economic and social impacts of protecting environmental values in Great Barrier Reef catchment waterways and the reef lagoon Economic contribution of the Great Barrier Reef March 2013 (PDF - 1314KB) 	Adequate	Improving
OC6 Use of the Great Barrier Reef relating to land-based run-off is demonstrably socially sustainable enhancing understanding and/or enjoyment	3	<ul style="list-style-type: none"> High level of volunteer activity and community understanding of monitoring and education activities through Reef Guardian programs and GBRMPA education and communication products Community enjoyment may have decreased due to decline in water quality 	<ul style="list-style-type: none"> The economic and social impacts of protecting environmental values in Great Barrier Reef catchment waterways and the reef lagoon Economic contribution of the Great Barrier Reef March 2013 (PDF - 1314KB) State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Improving
OC7 The relevant managing agencies	3	<ul style="list-style-type: none"> GBRMPA, Australian and Queensland governments have strong relationships with stakeholders involved in managing land-based run-off, developed 	<ul style="list-style-type: none"> Reef Plan 2013 	Adequate	Improving

Component of management of land-based run-off	Rating	Justification	Evidence/sources	Confidence	Trend
have developed effective partnerships with local communities and/or stakeholders to address land-based run-off		through the Reef Plan 2013 and previous phase of Reef Rescue. <ul style="list-style-type: none"> • These partnerships are effective and ensure that all are focused on the best possible outcomes for the Reef. There has been significant progress in the past 10 years and this will continue to be built upon going forward. 	<ul style="list-style-type: none"> • Cane and grazing BMPs 		

Table 33 Calculation of grades for biodiversity values

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to protecting biodiversity values are understood by managers	4	<ul style="list-style-type: none"> The biodiversity and associated values of the Great Barrier Reef (GBR) are well understood and documented as would be expected for one of the best-studied coral reef ecosystems in the world. The Great Barrier Reef Region Strategic Assessment (GBRSA) Report Chapter 4 provides a comprehensive summary of these values and an extensive compilation of relevant literature. Knowledge of some aspects of outstanding universal value such as aesthetics and geomorphological values that are also relevant to protecting biodiversity values has improved through recent studies. Some habitats (for example, soft bottom communities) and species groups (bryozoans, plankton and others) are less well studied. Knowledge is better for commercially important species and species of conservation or management concern (marine turtles, crown-of-thorns starfish). Documentation of values related to Matters of National Environmental Significance (MNES) has substantially improved as a result of the GBRSA process which documents 62 key values and 20 key environmental processes. Knowledge of the spatial distribution of values and our ability to map values is an identified gap. 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapter 4. Lucas et al. 1997 Biogeographic zoning undertaken in association with the Representatives Areas Program Great Barrier Reef Biodiversity Conservation Strategy, 2013 Whiteway et al. (2013) <i>Geological and Geomorphological features of Outstanding Universal Value in the Great Barrier Reef World Heritage Area</i>. Technical Report Prepared for the Department of Sustainability, Environment, Water, Population and Communities. Context (2013) <i>Defining the Aesthetic Values of the Great Barrier Reef</i>. Report prepared for DSEWPaC. Numerous plans and programs (for example site management plans) that document values Values and attributes table underpinning MNES Great Barrier Reef Biodiversity Strategy Vulnerability Assessments document knowledge gaps in understanding that limit ability to make evidence-based decisions about the management of the GBR 	Adequate	Improving
CO2 The current condition and trend of values relevant to protecting biodiversity values are known by managers	3	<ul style="list-style-type: none"> The sheer scale of the ecosystem means monitoring has focused on a few key habitats and species or groups of species, generally those that are iconic (such as coral reefs, seabirds), 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapters 5, 6 and 7 Climate change vulnerability assessment 2007 Great Barrier Reef Biodiversity Strategy & Vulnerability 	Adequate	Improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>commercially important (such as seagrass meadows, coral trout) or threatened (such as dugongs, marine turtles). Long-term monitoring programs exist for some species (for example, marine turtles, dugong, seagrass). AIMS long-term monitoring program has provided consistent data on coral cover, coral bleaching, crown-of-thorns starfish numbers, major fish species and benthic organisms.</p> <ul style="list-style-type: none"> • Knowledge gaps remain for many groups and species (for example, population estimates for shorebirds). The GBRSA report indicates that confidence in knowledge of condition and trend of values was generally limited with only about a quarter of the assessments based on adequate high quality evidence and, on average, about a quarter of the assessments based on very limited evidence. Evidence of condition was generally stronger than the evidence for trend (although the reverse is true of terrestrial habitats that support the Reef. • Information is lacking for many environmental processes, particularly ecological processes. • Vulnerability assessments completed for climate change, coastal ecosystems, water quality, seagrass, shorebirds, sharks and rays, inshore dolphins, threadfin salmon, grey mackerel, dwarf minke whale, sawfish, sea snakes, seabirds, shorebirds and underway for snapper, dugong, marine turtles, humpback whale, coral reefs, islands, lagoon floor, estuaries and open water • Integrated Monitoring Framework for the Great Barrier Reef World Heritage Area provides a blueprint for more effective, targeted and integrated monitoring to inform knowledge of status and trend in values of the Reef. • Improved understanding of regional differences in biodiversity status as a result of recent studies 	<p>Assessments indicate that there is limited knowledge of status and trend information needed to properly assess ecosystem health (for example sharks and rays, inshore dolphin)</p> <ul style="list-style-type: none"> • De'ath et al 2012 The 27-year decline of coral cover on the Great Barrier Reef and its causes <i>PNAS</i> www.pnas.org/cgi/doi/10.1073/pnas.1208909109 • Pears, R.J., Morison, A.K., Jebreen, E.J., Dunning, M.C., Pitcher, C.R., Courtney, A.J., Houlden, B. and Jacobsen, I.P. 2012, <i>Ecological risk assessment of the East Coast Otter Trawl Fishery in the Great Barrier Reef Marine Park: Data report</i>, Great Barrier Reef Marine Park Authority, Townsville. • Great Barrier Reef Marine Park Authority 2012, <i>Informing the outlook for Great Barrier Reef coastal ecosystems</i>, Great Barrier Reef Marine Park Authority, Townsville. • Hedge et al. (2013) <i>Integrated monitoring framework for the Great Barrier Reef World Heritage Area</i>. Great Barrier Reef Marine Park Authority, Townsville. 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Knowledge of status and trend of coastal ecosystems significantly improved through the 2012 report on <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i>. Reductions in numbers of managers (especially field managers) since Outlook Report 2009 has reduced knowledge base amongst managers 			
CO3 Impacts (direct, indirect and cumulative) associated with protecting biodiversity values are understood by managers.	3	<ul style="list-style-type: none"> Direct impacts on the Great Barrier Reef of major concern (declining, water quality, climate change, impacts of extractive use, COTS) have been well studied for a considerable time but some indirect impacts are only now beginning to be understood (for example, there is emerging evidence that poor water quality resulting from floods and extreme weather events in the summers of 2009 to 2011 have created conditions which has resulted in COTS numbers increasing at some locations in the Reef). Ecological risk assessment completed for East Coast otter trawl fishery Consequential and cumulative impacts less well understood but are now receiving increased attention, especially as part of Strategic Assessment process. Impacts are compounding, focused inshore in the southern two-thirds of the Region. The impacts affecting the Great Barrier Reef do not act in isolation. Many of those of most concern are land-based in origin, arising from activities undertaken in the southern two-thirds of the catchment. Combined with inshore activities, it means the zone of most intensive impact is the inshore area in the southern two-thirds of the Region. Improved understanding of cumulative impacts on elements of biodiversity identified as a need in <i>Great Barrier Reef Biodiversity Conservation Strategy 2013</i> The Cumulative Impact and Structured Decision Making Framework (CISDM) provides a structured and scalable approach to understanding, estimating and responding to cumulative impacts using qualitative and probabilistic models. It has 	<ul style="list-style-type: none"> Great Barrier Reef Biodiversity Conservation Strategy, 2013 Great Barrier Reef Region Strategic Assessment Report Chapter 6.8 De'ath et al 2012 The 27-year decline of coral cover on the Great Barrier Reef and its causes <i>PNAS</i> www.pnas.org/cgi/doi/10.1073/pnas.1208909109 Great Barrier Reef Coastal Strategic Assessment Chapter 5.5 and Appendix H. Grech, A., Coles, R., and Marsh, H. (2011) A broad-scale assessment of the risk to coastal seagrasses from cumulative threats. <i>Marine Policy</i>, 35 (5). pp. 560-567 Great Barrier Reef Marine Park Authority 2012, <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i>, Great Barrier Reef Marine Park Authority, Townsville. Reef Rescue Monitoring Reports http://www.gbrmpa.gov.au/resources-and-publications/publications/annual-reef-rescue-marine-monitoring-science-report Guidelines for Hydrodynamic Modelling (of Dredge Spoil) National Assessment Guidelines for Dredging 2009 GBRMPA draft program report proposed cumulative impact assessment policy 	Limited	Improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>been piloted on two ecosystems (coral reef and seagrass) and one species (dugong) but would be applicable to other systems, species and scales.</p> <ul style="list-style-type: none"> Recent data indicating 50 per cent decline in coral cover and relative contribution of causal factors (cyclones, COTS and bleaching) indicative of extent of cumulative and consequential impacts 2012 report on coastal ecosystems prepared by GBRMPA has identified significance and extent to cumulative impacts on coastal ecosystems and the Great Barrier Reef Region. The Great Barrier Reef Coastal Strategic Assessment contains only a rudimentary assessment of cumulative impacts. Addressing cumulative impacts from all sources of impacts lacks guidance and is not applied consistently to all situations. 			
CO4 The broader (national and international) level influences relevant to protecting biodiversity values are understood by managers.	4	<ul style="list-style-type: none"> Strategic Assessment Process and UNESCO World Heritage Committee and Advisory Body processes relating to the Great Barrier Reef have focused attention on the elaboration of attributes underpinning the outstanding universal value of the Great Barrier Reef and MNES. Current and potential impacts of global and regional changes to climate are well understood by managers State Party report to World Heritage Committee reflects thorough understanding of national and international influences. 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report Chapters 3.4, 3.5, 3.8, 3.12, 3.13 Climate change vulnerability assessment 2007 State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Stable
CO5 The stakeholders relevant to protecting biodiversity values are well known by managers.	4	<ul style="list-style-type: none"> The GBRMPA has four Reef Advisory Committees (RACs): Catchment and Coastal; Ecosystem; Indigenous; and Tourism and Recreation. A key role for the RACs is to advise the GBRMPA in relation to actions that can be taken to address the risks to the Great Barrier Reef Marine Park identified in the Great Barrier Reef Outlook Report 2009 and subsequent studies. The Ecosystem RAC is especially relevant to matters relating to biodiversity. Major advances in stewardship and Reef Guardian 	<ul style="list-style-type: none"> RAC's: http://www.gbrmpa.gov.au/about-us/reef-advisory-committee Our Partners: http://www.gbrmpa.gov.au/our-partners 	Adequate	Stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>programs since 2009.</p> <ul style="list-style-type: none"> • Indigenous Women's Gathering was held in September 2012 to better understand female roles in land and sea management • Local Marine Advisory Committees provide contact with stakeholder groups at regional level • Considerable coordination and engagement between governments (for example, day-to-day management (DDM) program, other GBRMPA Sections addressing the remaining impacts of fishing) • Extensive ongoing engagement with industry (fisheries, defence, tourism, etc.) • Reef Guardian Schools • Reef Check • Eye on the Reef • Various community groups • Seagrass-Watch • Regional GBRMPA Offices • Great Barrier Reef Ministerial Council 			
PLANNING					
PL1 There is a planning system in place that effectively addresses protecting biodiversity values	4	<ul style="list-style-type: none"> • The 25-Year Strategic Plan for the Great Barrier Reef World Heritage Area provides an underpinning basis for integrated management of the region but the five-yearly planning objectives and annual reviews of implementation envisaged in the original plan have not eventuated. • Great Barrier Reef Biodiversity Conservation Strategy 2013 addresses gap identified in Outlook Report 2009 (but note that targets in the plan tend to be process and output focused and should be complemented by additional outcome-focused targets) • Vulnerability assessments will support effective planning by providing specific guidance on habitats and species requiring particular consideration. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • 25 Year Strategic Plan for the GBR • Great Barrier Reef Biodiversity Conservation Strategy 2013 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • Impact of replacement of State Planning Policy 3/11: Coastal Protection by the Coastal Protection State Planning Regulatory Provisions and transfer of responsibility from Department of Environment and Heritage Protection to State Development, Infrastructure and Planning uncertain but is likely to negatively affect integrated planning for biodiversity in the coastal zone. Relevant parts of Regional Coastal Management plans are also suspended by the Coastal Protection State Planning Regulatory Provisions. • Legislative changes in 2009 aim to better integrate the <i>Great Barrier Reef Marine Park Act 1975</i> (GBRMP Act) and Great Barrier Reef Marine Park Regulations 1983 with the national environment law—the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act), so that a single environmental impact assessment system applies to the Marine Park. • The Australian and Queensland governments have signed an MoU and developed a draft Bilateral Assessment Agreement to establish accreditation of Queensland environmental assessment processes and to ensure an integrated and coordinated approach for actions requiring approval from both the Commonwealth Environment Minister (under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>) and the State of Queensland. The impact of these arrangements in relation to development approvals in the coastal zone, especially in the southern inshore Great Barrier Reef Region where development impacts on Great Barrier Reef biodiversity have been most significant is not yet understood. • Zoning Plan for Great Barrier Reef is primarily about protecting biodiversity values • Reef Water Quality Protection Plan (Reef Plan) 			

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>provides a co-ordinated and collaborative approach to addressing non-point source water quality impacts in the Reef.</p> <ul style="list-style-type: none"> GBRMPA Plans of Management address biodiversity issues in high tourism areas. 			
<p>PL2 The planning system for protecting biodiversity values addresses the major factors influencing the Great Barrier Reef Region's values.</p>	<p>3</p>	<ul style="list-style-type: none"> In conjunction with the Biodiversity Conservation Strategy, comprehensive Vulnerability Assessments (VAs) have been developed identifying those elements of biodiversity that need specific attention as well as actions to address them. Twelve VAs have been completed to date (including seagrass, shorebirds, sharks and rays, inshore dolphins) and others are currently being developed. There are a further nine VAs nearing completion. These VA's go a long way towards addressing comments in Outlook Report 2009 assessment that there was a need for a comprehensive risk assessment across the full range of risks Progress in completion of other identified vulnerability assessments has been slow (none completed in 2013) Some plans are silent on specific actions necessary to protect biodiversity (for example, the Zoning Plan only really manages extractive uses such as fishing). Certainty around where large developments may go (a major pressure) is not provided for in the Zoning Plan. Plans of Management are also only really designed to manage tourism and recreation in specific areas. Site Planning is often reactive rather than proactive when it comes to protecting biodiversity (for example, a site plan for the Keppels has not been developed; yet commercial aquarium fishermen through ProVision Reef have agreed voluntarily to stop collecting corals there due to the impacts from coral bleaching). Trawl plan includes requirements for TED's for 	<ul style="list-style-type: none"> Great Barrier Reef Biodiversity Conservation Strategy Vulnerability assessments – see http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-2013/vulnerability-assessments Great Barrier Reef Coastal Zone Strategic Assessment Draft Report 2013 	<p>Adequate</p>	<p>Improving</p>

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Turtles, BRD's for other bycatch/fish</p> <ul style="list-style-type: none"> • TUMRAs to recognise traditional take of turtle and dugong. • Threatened species listed under EPBC and species recovery plans • Planning systems address individual threats but does not adequately address consequential or cumulative risks. • Queensland planning processes do not explicitly require consideration of MNES • Issues of scale and connectivity not comprehensively understood but information in Coastal Outlook assessment represents progress on this • Planning does not yet address major threats of climate change and in particular coastal planning developments may increase pressure on the southern inshore areas of the Great Barrier Reef as mining and other developments increase populations and pressures in this region. 			
<p>PL3 Actions for implementation regarding protecting biodiversity values are clearly identified within relevant plans</p>	<p>3</p>	<ul style="list-style-type: none"> • <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> identifies actions at broad level. Tangible, on-ground actions from vulnerability assessments need to be built into the action plan arising from the Biodiversity Conservation Strategy. • Lack of a comprehensive plan to address degradation of biodiversity, especially in the southern inshore region of the Great Barrier Reef where impacts have been greatest. • NERP Project: Prioritizing management actions for Great Barrier Reef islands • Recovery Planning for listed species in the Great Barrier Reef is driven by Commonwealth Department of Environment. • <i>Commonwealth Cleaner Environment Plan</i> 	<ul style="list-style-type: none"> • Great Barrier Reef Biodiversity Conservation Strategy, 2013 • Development of multi-species Recovery Plan for three listed species of sawfish and river sharks (including spartooth shark) under development by the Commonwealth Department of Environment • Commonwealth Department of Environment Cleaner Environment Plan http://www.environment.gov.au/cleaner-environment/index.html 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>establishes a \$5million Turtle and Dugong Protection Plan</p>			
<p>PL4 Clear, measurable and appropriate objectives for management of protecting biodiversity values have been documented</p>	3	<ul style="list-style-type: none"> • <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> identifies objectives at broad level but targets in the plan tend to be process and output focused and should be complemented by additional outcome focused targets to match to the objectives of the plan • Lack of a comprehensive plan to address degradation of biodiversity, especially in the southern inshore region of the Great Barrier Reef where impacts have been greatest 	<ul style="list-style-type: none"> • Great Barrier Reef Biodiversity Conservation Strategy, 2013 • Commonwealth Department of Environment Cleaner Environment Plan http://www.environment.gov.au/cleaner-environment/index.html 		
<p>PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to protecting biodiversity values</p>	3	<ul style="list-style-type: none"> • AIMS long-term monitoring program (LTMP) for the Great Barrier Reef has been maintained at 47 reefs since 1993. • Reef Rescue Maine Monitoring Program at 28 inshore reefs • Many individual monitoring programs maintained in the Great Barrier Reef by government and academic research partners and non-government groups. • Integrated monitoring framework for the Great Barrier Reef is under development. 	<ul style="list-style-type: none"> • AIMS Long Term Monitoring Program http://www.aims.gov.au/docs/research/monitoring/reef/reef-monitoring.html • http://www.aims.gov.au/docs/research/water-quality/inshore-reefs/monitoring-inshore-reefs.html • Hedge et al. (2013) Integrated monitoring framework for the Great Barrier Reef World Heritage Area. Great Barrier Reef Marine Park Authority, Townsville 		
<p>PL6 The main stakeholders &/or the local community are effectively engaged in planning to address biodiversity</p>	4	<ul style="list-style-type: none"> • AIMS, CSIRO and university-based researchers are significantly engaged in research, monitoring and planning for management of biodiversity in the Great Barrier Reef • Integrated monitoring program is addressing needs for biodiversity assessment and monitoring • Strategic Assessment Stakeholder Engagement Strategy has involved a large amount of stakeholder consultation to identify what values are important to stakeholders, what they see as the biggest risks/impacts to the Reef and the effectiveness of GBRMPA's management arrangements. 	<ul style="list-style-type: none"> • Great Barrier Reef Biodiversity Conservation Strategy 2013 • GBRMPA Management Effectiveness Workshop • RAP Program • Draft Great Barrier Reef Strategic Assessment Report 2013 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • In the review of the Zoning Plan and the Representative Areas Program, stakeholders and local communities were highly engaged in the planning process. However, many plans deal with aspects of biodiversity (for example, species protection) but avoid the broader context of biodiversity (including dealing with connectivity issues). • There are a wide range of other consultative processes that engage communities/stakeholders in planning issues – RACs, LMACs, specific consultation whenever a new policy or plan is being developed (for example, public consultation periods for the biodiversity strategy) • Strategic Assessment Stakeholder Engagement Strategy has involved a large amount of stakeholder consultation to identify what values are important to stakeholders, what they see as the biggest risks/impacts to the Reef and how effective GBRMPA’s management arrangements are. 			
PL7 Sufficient policy currently exists to effectively address biodiversity	3	<ul style="list-style-type: none"> • <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> identifies objectives at broad level • GBRMPA has a number of policies, position statements, strategies and guidelines to address protecting biodiversity values. • GBRMPA has developed four major strategies (biodiversity, climate change adaptation, heritage, recreation management) relevant to protecting biodiversity values • GBRMPA has developed 12 strategies, 10 position statements and six guidelines – most directly relevant to protecting biodiversity values, conservation and management • All State Planning Policies (SPP) are under review • It is difficult to identify all relevant Queensland Government policies relevant to management of the coastal zone and coastal impacts on the Great 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report Chapter 3. • http://www.gbrmpa.gov.au/zoning-permits-and-plans/legislation-regulations-and-policies/policies-and-position-statements • Great Barrier Reef Coastal Zone Strategic Assessment Draft Report 2013 • Queensland Draft Coastal Management Plan 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Barrier Reef World Heritage Area – the Great Barrier Reef Coastal Zone Strategic Assessment Draft Report 2013 does not present a consolidated list of such policies.</p> <ul style="list-style-type: none"> • A draft Queensland Coastal Management Plan that contains two proposed policies on nature conservation has been recently closed for comment but pre-existing regional coastal management plans have been rescinded. 			
<p>PL8 There is consistency across jurisdictions when planning for biodiversity</p>	<p>4</p>	<ul style="list-style-type: none"> • Zoning and management plans between Queensland and Commonwealth are consistent and Field Management Program is agreed across relevant agencies and jurisdictions. • The Great Barrier Reef Intergovernmental Agreement 2009 provides the framework for the Australian and Queensland governments to work together to protect the Great Barrier Reef. • Great Barrier Reef Ministerial Forum established, met once in 2011 and has subsequently met annually – provides mechanism for coordination on key issues and in particular to provide a forum for joint policy development and coordination in relation to issues affecting the protection, conservation, management and use of the Great Barrier Reef ecosystem as encompassed by the Great Barrier Reef World Heritage Area. • Integration with Commonwealth Department of Environment and EPBC has improved. • Management of issues such as coastal land use impacts on water quality that have major implications for biodiversity have been integrated across jurisdictions. • 2009-2014 Queensland Declared Fish Habitat Area network strategy recognises a need to improve the profile of declared FHAs in government, and ensuring recognition and consideration of declared FHAs in planning and other initiatives (including marine park zoning and 	<ul style="list-style-type: none"> • Great Barrier Reef Intergovernmental Agreement and Ministerial Forum http://www.environment.gov.au/node/18027 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>national park declarations) and the need to form new partnerships to enhance declared FHA management. Current arrangements place responsibility for declared FHAs with the Department of National Parks, Recreation, Sport and Racing, however, development applications in declared FHAs are processed by Fisheries Queensland.</p> <ul style="list-style-type: none"> Recent changes in coastal planning arrangements in Queensland are likely to have implications for biodiversity management in inshore areas along the Queensland coast, especially in developed areas and could impact significantly on consistency across jurisdictions. 			
<p>PL9 Plans relevant to protecting biodiversity values provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.</p>	<p>2</p>	<ul style="list-style-type: none"> Preservation zones, and dugong protection areas provide restrictions on activities that may impact on areas of particular biodiversity significance. Zoning provides areas of protection for a representative sample of biogeographic regions and habitats but zones are established on the basis of addressing the full range of values and allowable uses of the Great Barrier Reef not just biodiversity. Zoning does not provide explicit guidance on where many activities not directly regulated by the zoning plan can be carried out. Permit assessment processes take potential impacts of activities on biodiversity into account but in many cases lack of site-specific knowledge about species distributions and important sites for biodiversity will hinder ability to properly reflect biodiversity concerns in permit assessment. Vulnerability assessments that have been completed will assist to some extent but many of these assessments acknowledge the limitations of available knowledge. Actions to address these knowledge gaps and better address issues of biodiversity management are contained in the <i>Biodiversity Conservation</i> 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/about-the-reef/biodiversity/draft-biodiversity-conservation-strategy/vulnerability-assessments Great Barrier Reef Biodiversity Conservation Strategy, 2012 GBRMP Zoning Plans http://www.gbrmpa.gov.au/zoning-permits-and-plans 		

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		Strategy 2013 but are yet to be fully implemented			
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address biodiversity	3	<ul style="list-style-type: none"> • Significant financial resources being allocated to addressing major threatening processes impacting on biodiversity such as water quality • Reallocation of Great Barrier Reef Marine Park effort in areas relevant to ecosystem and species management has enabled increased focus on work such as Biodiversity Conservation Strategy and vulnerability assessments. However, resources for implementation of actions from this work are yet to be identified. • Significant additional financial resources are being allocated to addressing COTS outbreaks but the adequacy of these resources to impact significantly on the infestation is yet to be assessed. • Considerable financial resources are allocated to improving biodiversity knowledge and increasing understanding of factors impacting on biodiversity and ecosystem processes through institutions such as AIMS, National Ecosystem Research Program, Regional NRM bodies, Great Barrier Reef Foundation and other Australian and Queensland government programs. • Capacity of FMP to address biodiversity management and natural resource management issues in marine and island environments is very limited and decreasing with closure of bases but increasing demands. • Funding for key programs such as the Reef Rescue Indigenous Land and Sea Country Partnership Program requires improvement of onward funding in order to achieve biodiversity conservation outcomes. • Management of funding arising from offset 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report Chapter 3.11.5 • Commonwealth Department of Environment Cleaner Environment Plan http://www.environment.gov.au/cleaner-environment/index.html • NERP Marine Biodiversity Hub http://www.nerpmarine.edu.au/node/719 • AIMS http://www.aims.gov.au/docs/publications/strategic-directions.html • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 	adequate	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>arrangements is not clear. It should not be used to replace core funding.</p> <ul style="list-style-type: none"> GBRMPA budget including the field management component is \$53.95 million –approximately 1 per cent of the estimated economic contribution of the Great Barrier Reef of \$5.8 billion 			
<p>IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address biodiversity</p>	3	<ul style="list-style-type: none"> Reallocation of Marine Park effort in areas relevant to ecosystem and species management has enabled increased focus on work such as Biodiversity Conservation Strategy, and vulnerability assessments. Capacity of FMP to address biodiversity management and natural resource management issues in marine and island environments is very limited and decreasing with closure of bases but increasing demands. Capacity in Queensland Government agencies related to coastal and marine management has declined over the last two years – for example, Queensland Government Department of Environment and Heritage Protection (207 staff were made redundant or retrenched in 2012-13), National Parks, Recreation, Sport and Racing (113 staff were made redundant in 2012-13) and Agriculture, Fisheries and Forestry (329 staff were made redundant or retrenched in 2012-13). However, it is not known how many redundant/retrenched staff worked in areas relevant to the management of the Great Barrier Reef. 	<ul style="list-style-type: none"> Field Management Program Review GBRMPA Management Effectiveness Workshop 		
<p>IN3 The right skill sets and expertise are currently available to the managing organisations to address biodiversity</p>	3	<ul style="list-style-type: none"> Skill sets within GBRMPA for biophysical science are adequate for planning and management tasks that they undertake and there is extensive collaboration with relevant scientists in AIMS, universities and CSIRO. Social science capacity within GBRMPA is more limited but there is emerging collaboration with 	<ul style="list-style-type: none"> 2012-13 Annual Reports of the Queensland Government Departments of Environment and Heritage Protection, National Parks, Recreation, Sport and Racing and Agriculture, Fisheries and Forestry 	limited	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>universities and CSIRO in this area.</p> <ul style="list-style-type: none"> • Agencies generally do have the right expertise/skill sets reflected in position descriptions • There has been some loss of relevant expertise sets as a result of downsizing, especially in the middle management, planning and technical ranks in the relevant Queensland Government Departments of Environment and Heritage Protection (207 staff were made redundant or retrenched in 2012-13), National Parks, Recreation, Sport and Racing (113 staff were made redundant in 2012-13) and Agriculture, Fisheries and Forestry (329 staff were made redundant or retrenched in 2012-13). It is not known how many redundant/retrenched staff worked in areas relevant to the management of the Great Barrier Reef. 			
IN4 The necessary biophysical information is currently available to address biodiversity	3	<ul style="list-style-type: none"> • Knowledge gaps remain for many groups and species (for example, population estimates for shorebirds). The GBRSA report indicates that confidence in knowledge of condition and trend of values was generally limited with only about a quarter of the assessments based on adequate high quality evidence and, on average, about a quarter of the assessments based on very limited evidence. Evidence of condition was generally stronger than the evidence for trend (although the reverse is true of terrestrial habitats that support the Reef). • Vulnerability assessments completed or underway for key species and habitats • Documentation of status of habitats and species in the Great Barrier Reef Strategic Assessment Draft Report • The GBRMPA's 2012, <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i>, report have compiled the latest information and made it accessible to managers but key gaps exist (for 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report Chapters 5, 6 and 7 • Whiteway et al. (2013) <i>Geological and Geomorphological features of Outstanding Universal Value in the Great Barrier Reef World Heritage Area</i>. Technical Report Prepared for the Department of Sustainability, Environment, Water, Population and Communities. • <i>Climate change vulnerability assessment 2007</i> • <i>Great Barrier Reef Biodiversity Strategy 2013 & Vulnerability Assessments</i> • Sinclair Knight Merz (2013) <i>Improved dredge material management for the Great Barrier Reef Region</i>. Great Barrier Reef Marine Park Authority, Townsville. • Numerous scientific papers and reports 	adequate	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>example, connectivity, trophic interactions, deep water, far north Great Barrier Reef)</p> <ul style="list-style-type: none"> • Great Barrier Reef continues to be focus of major, multi-institution research efforts so knowledge is consistently accumulating • Non-charismatic or taxa of no apparent economic value are poorly known • Poor knowledge of ecological processes, for example, groundwater inflows, sink/source, implications of deepwater upwellings, planktonic/larval movements • Problem of shifting baselines remains but there is now greater awareness of this issue • Significant loss on knowledge and expertise in relevant State agencies as a result of downsizing • Little knowledge of habitats and communities below 100m depth but this has improved as a result of the studies undertaken in association with the Strategic Assessment process. 			
IN5 The necessary socio-economic information is currently available to address biodiversity	3	<ul style="list-style-type: none"> • Some economic information for key industries but apparent lack of social information • GBRMPA has appointed manager for socio-economic issues and current and planned projects have begun to address this area • work programmes underway to address this issue but results are yet to be delivered and integrated into management • need to better develop and integrate Traditional Ecological Knowledge and stakeholder knowledge into management and conservation of biodiversity recognised in <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> • SELMTMP program has significantly improved availability of relevant social information 	<ul style="list-style-type: none"> • Context (2013) Defining the Aesthetic Values of the Great Barrier Reef. Report prepared for DSEWPaC. • <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> • Current NERP projects of particular relevance to improved management of the GBRWHA are: <ul style="list-style-type: none"> ○ Project 10.1 'Social and economic long-term monitoring programme (SELTMP)' ○ Project 10.2 'Socio-economic systems and reef resilience' • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ • .Anthony, K.R.N., Dambacher, J.M., Walshe, T. and Beeden, R. (2013) A framework for understanding cumulative impacts, supporting environmental decisions and informing resilience-based management of the Great Barrier Reef World Heritage Area. Australian Institute of 	limited	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
			<p>Marine Science, Townsville; CSIRO, Hobart ; NERP Decisions Hub, University of Melbourne and Great Barrier Reef Marine Park Authority, Townsville.</p>		
<p>IN6 The necessary Indigenous heritage information is currently available to address biodiversity</p>	<p>2</p>	<ul style="list-style-type: none"> • In December 2008, the Australian Government under the Caring for our Country initiative, committed \$10 million over five years towards the Reef Rescue Land and Sea Country Indigenous Partnerships Program. The program actively engages Aboriginal and Torres Strait Islander communities in the management and protection of the Reef's marine resources and cultural diversity through: <ul style="list-style-type: none"> ○ the expansion of Traditional Use of Marine Resources Agreements (TUMRAs) across the Great Barrier Reef Catchment ○ strengthening communications and knowledge sharing ○ enhancing compliance ○ engaging with communities. • The Australian Government has committed to over \$8M over five years for the continuation of the Reef Rescue Land and Sea Country Indigenous Partnerships Program 2013-2018. • Building community capacity through Grants and sponsorship opportunities. Commitment of \$930,000 to Indigenous organisations and Traditional Owners across Queensland to manage marine turtles, dugongs and sea-country. • Land and Sea Country Indigenous Partnerships Program and TUMRAs provide the mechanism for Traditional Owners to apply their knowledge to biodiversity management in their land and sea country. • Working on Country funding of over \$320 million will be available over five years from July 2013 to 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • Working on Country program http://www.environment.gov.au/indigenous/workingoncountry/ 	<p>limited</p>	<p>improving</p>

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>support Indigenous rangers. This should sustain programs in the Great Barrier Reef region and build the knowledge base for management.</p> <ul style="list-style-type: none"> • Given the high level of short-term funding and low level of secured long-term funding, the GRBMPA's capacity to build an understanding of cultural heritage and improve its management of Indigenous heritage is limited. The relationships built with Traditional Owners to date have taken many years and a lot of investment. Staff turnover within this area will not be readily fixed with different staff and will need to be built back up again if these programs are not continued and Reef Rescue staff leave in 2013. • move beyond just a focus on development of TUMRAs to broader engagement • Some Biodiversity management through Reef Rescue Programs • Aside from turtle and dugong, there is very little information about how traditional communities use marine resources and documenting or applying their knowledge of non-charismatic biodiversity 			
IN7 The necessary historic heritage information is currently available to address biodiversity	N/A				
IN8 There are additional sources of non-government input (for example volunteers) contributing to address biodiversity	4	<ul style="list-style-type: none"> • Much of the information on biodiversity comes from researchers outside GBRMPA (for example, AIMS, universities, CSIRO) • NRM groups have programs addressing biodiversity conservation and have volunteer networks which help achieve outcomes • Many volunteer groups are involved in monitoring and field management related to biodiversity issues (for example, Reef Check, Eye on the Reef, OUCH, etc, Seagrass- and Mangrove-Watch, Tangaroa Blue marine debris program) • Reef Guardian program is growing in scope and activity 	<ul style="list-style-type: none"> • Eco Barge – based in the Whitsundays is a volunteer service, which aims to reduce debris in the Marine Parks to help protect biodiversity. • Volunteer groups and events include: <ul style="list-style-type: none"> ○ Reef Check ○ Eye on the reef ○ CapReef ○ Reef Guardian Schools ○ NGO's on RACs ○ Numerous Traditional Owner groups ○ LMACs ○ fisheries working groups ○ Mackay turtle watch 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Offsets and the proposed net benefits policies under Queensland's and GBRMPA's draft program reports may provide an avenue for input in the future but the effectiveness of such programs cannot yet be measured. 	<ul style="list-style-type: none"> Bowen –Queens beach turtle watch OUCH Beach clean-up days Research stations National Environmental Offsets policy GBRMPA's draft program report Queensland's draft program report. 		
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of biodiversity	4	<ul style="list-style-type: none"> Engaging communities and fostering stewardship is one of three principal strategies in the <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> While previous engagement with industries in the Great Barrier Reef has been extensive, it has not been focused explicitly on biodiversity issues (although biodiversity concerns underpin many other issues) Mining industry has not been extensively engaged but consequential impacts of mining and associated developments are likely to have significant impacts on biodiversity. Tourism industry extensively engaged through programs such as Eye on the Reef RACs, LMACS TUMRA liaison officers 	<ul style="list-style-type: none"> Expert advice sought on biodiversity matters through the Ecosystems Reef Advisory Committee, Indigenous RAC, Catchment and Coastal RAC, and the Tourism and Recreation RAC. All appropriate managing agencies are involved in protecting biodiversity values management for the GBR, for example EHP, NPRSR, Department of Environment, DAFF, AMSA, etc. Industries are engaged in planning processes for protecting biodiversity values throughout the Great Barrier Reef (eg. through commitments in the 25 Year Strategic Plan) Reef Guardians program 	adequate	stable
PR2 The local community is effectively engaged in the ongoing management of biodiversity	3	<ul style="list-style-type: none"> Engaging communities and fostering stewardship is one of three principal strategies in the <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> Many volunteer groups are involved in monitoring and field management related to biodiversity issues (for example, Reef Check, Eye on the Reef, OUCH etc., Seagrass- and Mangrove-Watch) but need to recognise that these groups are not representative of the whole community. Need to consider mechanisms for broader 	<ul style="list-style-type: none"> <i>Great Barrier Reef Biodiversity Conservation Strategy, 2013</i> Great Barrier Reef Strategic Assessment Draft Report 2013 Chapter 2.11 http://www.gbrmpa.gov.au/our-partners/reef-guardians http://www.gbrmpa.gov.au/our-partners/local-marine-advisory-committees 	adequate	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>community engagement. especially reef users who are not aligned to current programs</p> <ul style="list-style-type: none"> • Reef Guardian program has grown substantially in scope and activity • 12 LMACS along Queensland Coast • Four Regional GBRMPA offices and DNPRSR offices in major coastal regional centres • Thirty-five Future Leaders Eco Challenges (FLECs) involving over 1500 students were held in the Great Barrier Reef Catchment, enabling students and teachers to participate in local environmental projects within their school or community. Students had an opportunity to take part in activities that are aimed at improving catchments, water quality, sustainability and reef health. • Improvements in public reporting capacity for shipping and pollution incidents, and marine wildlife strandings, via mobile phone applications. 			
PR3 There is a sound governance system in place to address biodiversity	3	<ul style="list-style-type: none"> • EPBC Act and GBRMP Act provide strong legislative basis for biodiversity management and control of potential impacts on MNES • The Great Barrier Reef Intergovernmental Agreement 2009 provides the framework for the Australian and Queensland governments to work together to protect the Great Barrier Reef • Great Barrier Reef Ministerial Forum established, met first in 2011 and annually since then – provides mechanism for coordination on key issues and in particular to provide a forum for joint policy development and coordination in relation to issues affecting the protection, conservation, management and use of the Great Barrier Reef ecosystem as encompassed by the Great Barrier Reef World Heritage Area. The GBRMPA has four Reef Advisory Committees (RACs): Catchment and Coastal; Ecosystem; Indigenous; and Tourism and Recreation. A key role for the RACs is to 	<ul style="list-style-type: none"> • Allan, D., et al. (2013). A method for risk analysis across governance systems: a Great Barrier Reef case study. <i>Environmental Research Letters</i> 8(1): 015037. • Grech, A., et al. (2013). Guiding principles for the improved governance of port and shipping impacts in the Great Barrier Reef. <i>Marine Pollution Bulletin</i> 75(1–2): 8-20. • Day and Dobbs 2013 Effective governance of a large and complex cross-jurisdictional marine protected area: Australia’s Great Barrier Reef • Independent Review of the Port of Gladstone - Report on findings (PDF - 2.54 MB) 	adequate	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>advise the GBRMPA in relation to actions that can be taken to address the risks to the Great Barrier Reef Marine Park identified in the Great Barrier Reef Outlook Report 2009.</p> <ul style="list-style-type: none"> • Local Marine Advisory Committees provide contact with stakeholder groups at regional level • Extensive ongoing engagement with industry (fisheries, defence, tourism, etc.) • Zoning and management plans between Queensland and Australian governments are consistent and Field Management Program is agreed across relevant agencies and jurisdictions • Management of issues such as coastal land use impacts on water quality, that have major implications for biodiversity have been integrated across jurisdictions. • Framework announced for 'one stop shop' environmental approvals. The Australian Government is committed to delivering a 'one stop shop' for environmental approvals that will accredit state planning systems under national environmental law, to create a single environmental assessment and approval process. • Recent changes in coastal planning arrangements in Queensland are likely to have implications for biodiversity management in inshore areas along the Queensland coast, especially in developed areas. Some concerns expressed in studies that suggest that governance around major developments may not be as strong as in other areas of Marine Park management. • There is a need for a review of cross-jurisdictional mechanisms required to address protecting biodiversity values measures in areas such as planning, coastal development and fisheries management in order to restore ecosystem health to the southern Great Barrier Reef inshore zone. 			
PR4 There is effective performance	4	<ul style="list-style-type: none"> • Significant recent progress in completing status 	<ul style="list-style-type: none"> • Great Barrier Reef Strategic Assessment Draft Report 2013 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for biodiversity		and trend and vulnerability assessments for many key species and habitats <ul style="list-style-type: none"> • Outlook Report process now firmly entrenched within management system and good evidence that the 2009 assessment has been used to both assess progress towards objectives and to plan additional management actions where required • AIMS LTMP results are informing planning and management • Strategic Assessment process has resulted in a number of significant initiatives and studies that will support monitoring and performance review related to biodiversity management (for example, a management framework based on outcomes and targets, integrated monitoring program, cumulative impacts assessment) • Undertaken in 2013 in response to UNESCOs concerns – an assessment of management effectiveness was undertaken as a central component of the strategic assessment reports, and the independent review(s) were made publically available. • Feedback on appropriateness and effectiveness of GBRMPA tools was sought from stakeholders during consultation on the strategic assessment, and formed part of the assessment of management effectiveness. 	and Draft Program Report 2013 <ul style="list-style-type: none"> • Hockings et al (2013) Assessment of Management Effectiveness for the Strategic Assessment of the Great Barrier Reef Region. UniQuest Report to the Great barrier Reef Marine Park Authority • AIMS LTMP • Vulnerability assessments 		
PR5 Appropriate training is available to the managing agencies to address biodiversity	2	<ul style="list-style-type: none"> • Base training of staff is good • Limited on-the-job training for field staff in biodiversity management issues • Some staff participate in workshops, conferences, and steering committee meetings at GBRMPA. Processes involved in developing programs such as cumulative impact assessment and integrated monitoring will help build staff capacity. 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop 	Limited	stable
PR6 Management of biodiversity is consistently implemented across the relevant jurisdictions	3	<ul style="list-style-type: none"> • As for the Outlook Report 2009 assessment there are still many examples of consistency (for example, joint permitting under the IGA), 	<ul style="list-style-type: none"> • GBRMPA Management Effectiveness Workshop • Draft Great Barrier Reef Strategic Assessment Report 2013 	limited	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>complementary zoning between State and Commonwealth Marine Parks, defence environmental planning, shipping planning) but examples also exist of a lack of consistency (for example, Queensland Fish Habitat Zone and GBRMPA Habitat Protection Zone)</p> <ul style="list-style-type: none"> the WorldHeritage Committee concerns around coastal development in the Great Barrier Reef World Heritage Area provide an example of where differences in management objectives might become more manifest in the near future given the concerns around the poor condition of the southern inshore Great Barrier Reef and coastal development and economic development objectives in Queensland. Some uncertainty arising from review of Queensland State Planning Policies 			
PR7 There are effective processes applied to resolve differing views/ conflicts regarding biodiversity	4	<ul style="list-style-type: none"> Public consultation as part of Biodiversity Conservation Strategy process. Vulnerability Assessments peer reviewed both internally and externally by relevant experts. Extensive public consultation as part of Strategic Assessment process Public comment processes for permit applications expected to impact on other users. Governance arrangements between State and Commonwealth provide mechanism for conflict resolution LMACs and RACs provide forum for discussion of significant issues 	<ul style="list-style-type: none"> Great Barrier Reef Biodiversity Conservation Strategy 2013 Great Barrier Reef Strategic Assessment Draft Report 2013 Hockings et al (2013) Assessment of Management Effectiveness for the Strategic Assessment of the Great Barrier Reef Region. UniQuest Report to the Great Barrier Reef Marine Park Authority RIS and Review Rights processes as part of the Permit Application assessment are designed to incorporate conflict resolution elements Evaluation mechanisms for conflict resolution are lacking The number of applications open for public comment has increased since 2009 see GBRMPA public comment web page: http://www.gbrmpa.gov.au/about-us/consultation 	adequate	stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with biodiversity are appropriately considered.	3	<ul style="list-style-type: none"> Direct impacts generally well considered for developments within the Marine Park requiring a permit or other approval Plans of Management and Special Management Areas identify and address issues of biodiversity management 	<ul style="list-style-type: none"> GBRMP Regulations 1983 Regulation 88Q, 88R and 88S provide for consideration of biodiversity values and impacts on these values see examples of PoMs at http://www.gbrmpa.gov.au/zoning-permits-and-plans/plans-of-management/ and plans for Special Management Areas 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Cumulative impacts on biodiversity (spatial, temporal and interactive) are not well considered, but awareness of importance of cumulative impacts and shifting baselines is rising and policy is being developed as recommended in the draft Program Report. Cumulative impacts of many coastal developments poorly or not addressed as shown in Coastal Ecosystems Outlook Report No clear understanding of the extent of impact that is acceptable or how loss of biodiversity and ecosystem condition that is evident, especially in the southern inshore region of the Great Barrier Reef should be taken account of in development decisions (the need for setting outcomes and targets for Great Barrier Reef values is identified in the Strategic Assessment). 	<p>at http://www.gbrmpa.gov.au/zoning-permits-and-plans/special-management-areas</p> <ul style="list-style-type: none"> Great Barrier Reef Strategic Assessment Draft Report 2013 		
<p>PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding biodiversity</p>	4	<ul style="list-style-type: none"> Great Barrier Reef Biodiversity Conservation Strategy 2013 Vulnerability Assessments apply research and monitoring information to management decisions regarding biodiversity conservation. Extensive research is available through AIMS, CSIRO and universities and GBRMPA staff have good linkages to this research community. Information from this work has been integrated into various GBRMPA planning and strategy documents relating to biodiversity management. Outlook Report 2009 and ongoing Outlook reporting processes and the current Strategic assessment are drawing on this information. AIMS LTMP and Eye on the Reef program are providing extensive monitoring information to GBRMPA The Integrated "Eye on the Reef " program incorporates surveys by field staff with data collected by researchers, the tourist industry and stakeholder observations, to detect and assess 	<ul style="list-style-type: none"> Eye on the Reef - Development of a major data collection and storage system to observe, record and report on coral reef health. Analysis of the "Great Barrier Reef Seabird Atlas" identifying trends of declining seabird breeding in several seabird species. The analysis combined with research observations of poor breeding during warm water events has led to the development and implementation of a new seabird monitoring strategy targeting species and issues of greatest concern. National Environmental Research Program - The largest of the five NERP hubs, the Tropical Ecosystems Hub is addressing issues of concern for the management, conservation and sustainable use of the World Heritage listed Great Barrier Reef and its catchments. Land use impacts on Great Barrier Reef water quality and ecosystem condition 2013 Scientific Consensus Statement (http://www.reefplan.qld.gov.au/about/scientific-consensus-statement.aspx) 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>impacts from extreme weather events, warm water bleaching, flood plumes, crown-of-thorns starfish, ship and smaller vessel groundings and disease. The integrated database, mapping and reporting system is undergoing final testing and will enable a wide range of users to contribute to Great Barrier Reef management through:</p> <ul style="list-style-type: none"> ○ Reef Health status reporting ○ Reef-wide early warning system ○ Reef-wide and local incident response ○ Increased stewardship. <ul style="list-style-type: none"> ● NERP program is providing significant, management relevant research 			
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding biodiversity	3	<ul style="list-style-type: none"> ● One permanent GBRMPA position to address social and economic matters. ● Socio-economic issues are taken account of in permit decisions and available information was used in RAP process ● Economic information for key industries but frequent lack of social information ● Linkage of socio-economic data to management of biodiversity is less developed then for other issues such as tourism and fishing ● More social and economic information of relevance is being compiled with NERP funding by CSIRO and JCU ● Currently preparing guideline s for the inclusion of Social Impact Assessment to be included in all future EIAs. This includes associated on-going monitoring of impacts associated with new developments 	<ul style="list-style-type: none"> ● Green Pulse, SELTMP and socio-economic data from NERP projects ● The economic and social impacts of protecting environmental values in Great Barrier Reef catchment waterways and the reef lagoon http://www.fba.org.au/water_quality/downloads/WQIP-SE-assessment-final-report-22-March-2010.pdf ● Butler, J. R. A., et al. (in press) An analysis of trade-offs between multiple ecosystem services and stakeholders linked to land use and water quality management in the Great Barrier Reef, Australia. <i>Agriculture, Ecosystems & Environment</i> ● Stoeckl et al. (2011) The economic value of ecosystem services in the Great Barrier Reef: our state of knowledge 	limited	improving
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding biodiversity	2	<ul style="list-style-type: none"> ● Need to better develop and integrate Traditional Ecological Knowledge and stakeholder knowledge into management and conservation of biodiversity recognised in Draft Great Barrier Reef Biodiversity 	<ul style="list-style-type: none"> ● GBRMPA Management Effectiveness Workshop ● Working on Country program http://www.environment.gov.au/indigenous/workingoncountry/ 	limited	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Conservation Strategy, 2012</p> <ul style="list-style-type: none"> • Indigenous knowledge is taken account of in permit decisions where relevance is obvious but not routinely addressed in planning and management of biodiversity. • No projects in the NERP Tropical Ecosystems Hub are addressing the application of Indigenous knowledge in management of the Great Barrier Reef. • Land and Sea Country Indigenous Partnerships Program and TUMRAs provide the mechanism for Traditional Owners to apply their knowledge to biodiversity management in their land and sea country. • Integration of Traditional Ecological Knowledge is a recognised gap. There is no appropriate consultation process with Traditional Owners to re-establish the permissions relating to access and use of information (for example, intellectual property) and there is no cultural heritage information management system. 			
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding biodiversity		<ul style="list-style-type: none"> • N/A 			
PR13 Relevant standards are identified and being met regarding biodiversity	3	<ul style="list-style-type: none"> • Explicit desired outcomes and targets linked to current condition assessment are being established as part of the Strategic Assessment Program Report (Tables 3, 4 and 5) and through the identification of MNES and their relationship to the management programs of GBRMPA. • Desired outcomes and targets will need to be translated into on-ground/on-water management programs, activities and decisions. • Outlook Report 2009 set implicit standards for management in the development of the system for assessing existing protection and management of the Great Barrier Reef. Performance was variable, 	<ul style="list-style-type: none"> • Great Barrier Reef Strategic Assessment Draft Report 2013 • Great Barrier Reef Biodiversity Conservation Strategy, 2012 • Outlook Report 2009 • FMP Review • Brodie, J. and J. Waterhouse (2012) A critical review of environmental management of the 'not so Great' Barrier Reef. <i>Estuarine, Coastal and Shelf Science</i> 104–105(0): 1-22 	limited	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>being stronger for issues that were limited in complexity and geographic, social and jurisdictional scale such as research and management of defence activities.</p> <ul style="list-style-type: none"> Identified deficiencies in the FMP that impact on the capacity of field management to assist in the management of impacts affecting biodiversity appear not to have been addressed as field staff numbers and effective resources decline in the absence of a significant increase to funding 			
PR14 Targets have been established to benchmark management performance for biodiversity	3	<ul style="list-style-type: none"> Explicit desired outcomes and targets linked to current condition assessment are being established as part of the Strategic Assessment Program Report (Tables 3, 4 and 5) and through the identification of MNES and their relationship to the management programs of GBRMPA. Desired outcomes and targets will need to be translated into on-ground/on-water management programs, activities and decisions. Reef Plan sets targets to benchmark performance and reports against them. 	<ul style="list-style-type: none"> Draft Great Barrier Reef Strategic Assessment Report Great Barrier Reef Biodiversity Conservation Strategy 	adequate	improving
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for biodiversity	3	<ul style="list-style-type: none"> Too early to assess progress with the Great Barrier Reef Biodiversity Conservation Strategy, 2013 Associated biodiversity research programs through RRRRC and Tropical Ecosystems Hub broadly in accordance with work program EPBC fisheries accreditation timelines being met new zoning plan in place and being enforced Reef Water Quality Protection Plan audit report 2010 indicates substantial progress but with timeframes lagging in some areas 2011 Reef Plan Report Card showed continued positive progress towards targets. Reef Rescue programs largely on track and contracted. Engagement of landholders under 	<ul style="list-style-type: none"> Sapin V. (2013) Queensland Regional NRM Groups' Collective 2008 – 2013 Reef Rescue Coordination Final Report Brodie, J. and J. Waterhouse (2012) A critical review of environmental management of the 'not so Great' Barrier Reef. <i>Estuarine, Coastal and Shelf Science</i> 104–105(0): 1-22 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Reef Rescue 2008-2013 significantly exceeded targets</p> <ul style="list-style-type: none"> Brodie and Waterhouse (2013) acknowledge progress with implementation of programs relevant to protecting biodiversity values management, but indicate that it may be a case of “too little, too late” 			
<p>OP2 Implementation of management documents and/or programs relevant to protecting biodiversity values have progressed in accordance with timeframes specified in those documents</p>	3	<ul style="list-style-type: none"> Too early to assess progress with the Great Barrier Reef Biodiversity Conservation Strategy, 2013 Significant progress with status and trend and vulnerability assessments for key species and habitats Associated biodiversity research programs through RRRRC and Tropical Ecosystems Hub broadly in accordance with work program EPBC fisheries accreditation timelines being met RWQPP work program progressing largely in accordance with timeframes and proposed targets for uptake Rezoning program driven largely by concerns for biodiversity conservation 	<ul style="list-style-type: none"> Great Barrier Reef Biodiversity Conservation Strategy Great Barrier Reef Coastal Zone Strategic Assessment: Independent Review Report (PDF - 2.84 MB) Hockings et al 2013 Assessment of Management Effectiveness for the Strategic Assessment of the Great Barrier Reef Region Brodie and Waterhouse 2012. A critical review of environmental management of the ‘not so Great’ Barrier Reef 	adequate	improving
<p>OP3 The results (in OP1 above) have achieved their stated management objectives for biodiversity</p>	2	<ul style="list-style-type: none"> Objectives in terms of improved biodiversity status and improved resilience are yet to be seen Evidence of positive improvements in fish communities and reductions in COTS populations in re-zoned and more strictly protected areas of the Reef. Significant progress has been made with implementing Reef Plan actions and activities but significant changes in condition are yet to be seen and were impeded by extreme weather events in 2011-12. Scientific Consensus Statement 2013 concludes that “While current management interventions are starting to address water quality in the Great Barrier Reef, sustained and greater effort will be needed to achieve the ultimate goal of no 	<ul style="list-style-type: none"> Great Barrier Reef Report Card 2011 (http://www.reefplan.qld.gov.au/measuring-success/report-cards/report-card-2011.aspx) 2013 Scientific Consensus Statement (http://www.reefplan.qld.gov.au/about/scientific-consensus-statement.aspx) McCook et al 2010, Adaptive management of the Great Barrier Reef . . . limited good news for rezoning – PNAS Brodie, J. and J. Waterhouse (2012) A critical review of environmental management of the ‘not so Great’ Barrier Reef. <i>Estuarine, Coastal and Shelf Science</i> 104–105(0): 1-22 Reef Water Quality Protection Plan 2013 (http://www.reefplan.qld.gov.au/about.aspx) Reef Water Quality Protection Plan 2009 (PDF, 2.39 MB) (http://www.reefplan.qld.gov.au/resources/assets/reef-plan- 	limited	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>detrimental impact on the health and resilience of the Reef. In addition to continuous improvement, transformational changes in some farming technologies may be necessary to reach some targets".</p> <ul style="list-style-type: none"> • Brodie and Waterhouse (2012) acknowledge progress with implementation of programs relevant to protecting biodiversity values management, but indicate that it may be a case of "too little, too late" 	<p>2009.pdf) (now superseded)</p> <ul style="list-style-type: none"> • Great Barrier Reef First Report Card (http://www.reefplan.qld.gov.au/measuring-success/report-cards/first-report-card.aspx) • Great Barrier Reef Report Card 2010 (http://www.reefplan.qld.gov.au/measuring-success/report-cards/second-report-card.aspx) 		
<p>OP4 To date, products or services have been produced in accordance with the stated management objectives for biodiversity</p>	3	<ul style="list-style-type: none"> • Numerous policy statements and guidelines relevant to protecting biodiversity values management • Too early to assess progress with the Great Barrier Reef Biodiversity Conservation Strategy, 2013 • Significant progress with status and trend and vulnerability assessments for key species and habitats • Trawl Ecological Risk Assessments • Associated biodiversity research programs through RRRC and Tropical Ecosystems Hub broadly in accordance with work program • EPBC fisheries accreditation timelines being met • RWQPP work program progressing largely in accordance with timeframes and proposed targets for uptake 	<ul style="list-style-type: none"> • Great Barrier Reef Biodiversity Conservation Strategy, 2013 • Draft Great Barrier Reef Strategic Assessment Report • Great Barrier Reef Report Card 2011 (http://www.reefplan.qld.gov.au/measuring-success/report-cards/report-card-2011.aspx) 	adequate	improving
<p>OP5 Effective knowledge management systems regarding biodiversity are in place within agencies</p>	3	<ul style="list-style-type: none"> • Outlook Online Information and links to data sources related to biodiversity information. System Management of scientific information procedures are in place and are delivered at whole-of-GBRMPA database and citation management tool. • Tools to disseminate information about values and impacts on them are available, and undergoing development to improve service delivery – for example, the integrated Eye on the Reef program provides a centralised database for Reef health 	<ul style="list-style-type: none"> • Great Barrier Reef Outlook Online • DAFF eResearch Archive • http://www.ehp.qld.gov.au/wildlife/wildlife-online/ • e-Reefs 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>information; Reef Explorer is an interactive tool for displaying spatial information.</p> <ul style="list-style-type: none"> • Spatial information and datasets arising from research conducted on in the Marine Park are housed and managed by the GBRMPA Spatial Data Centre. Scientific programs are becoming increasingly spatial in focus and output, generating a variety of spatial datasets about the Region's values, its use and impacts. • Continued collaboration between the GBRMPA and its partners will help to identify and address gaps in spatial data and opportunities to share data and make it more 'discoverable' by others. • Department of Environment and Heritage Protection maintains database of biodiversity records from protected areas including islands within the Great Barrier Reef and adjacent coastal areas. • Queensland DAFF maintains eResearch archive of scientific and research publications and datasets including many items of relevance to biodiversity in the Great Barrier Reef. • Full integration and capacity to search across datasets yet to be achieved (especially with geo-referencing) 			
<p>OP6 Effective systems are in place to share knowledge on biodiversity with the community</p>	<p>4</p>	<ul style="list-style-type: none"> • Outlook Online • Communication through plain-English products summarising outcomes of scientific research is undertaken to some extent, but not systematically • e-Library (GBRMPA external website) provides access to publications • DAFF staff eResearch Archive • The non-scientific community is engaged via the GBRMPA's LMAs, magazines – for example Reef Beat, media releases, etc. • The scientific community is engaged in issues-specific workshops and forums and RACs by 	<ul style="list-style-type: none"> • Great Barrier Reef Outlook Online • DAFF eResearch Archive • http://www.ehp.qld.gov.au/wildlife/wildlife-online/ • e-Reefs 	<p>adequate</p>	<p>improving</p>

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>GBRMPA</p> <ul style="list-style-type: none"> • Eye on the Reef enables anyone who visits the Great Barrier Reef to contribute to its long-term protection. Eye on the Reef self-guided online and interactive training packages completed and available to the public. The Eye on the Reef program brings together five assessment and monitoring programs (Sightings network; Rapid Monitoring; Tourism Weekly Monitoring; Reef Health and Impact Surveys; Eyes and Ears Incident Reporting Network). The Reef Health and Impact Survey sub-program is run in partnership with the Queensland Parks and Wildlife Service. • Education at Reef HQ http://www.reefhq.com.au/education-at-reef-hq-aquarium • The Reef Videoconferencing program is Reef HQ Aquarium's outreach education program which informs people around the world about the Great Barrier Reef. • The Reef Guardian Schools initiative currently has 293 schools, over 114,900 students and 7280 teachers involved in building the Reef's resilience. • The Great Barrier Reef Marine Park Authority Science Teaching Units have been developed from the Key Focus Areas of the Great Barrier Reef Outlook Report 2009 and are linked to the Australian Science Curriculum. • The 2013 Reef Beat education series includes a curriculum-linked activity book and a poster. 			
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing biodiversity and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> • Significant increase in GBRMPA attention to biodiversity management evident in their programs leading up to and following Outlook Report 2009 and through the Strategic Assessment process • Greater attention being paid to managing MNES in the Great Barrier Reef. 	<ul style="list-style-type: none"> • There are a number of programs looking at the effects of zoning. Early indications are that zoning is working and preliminary research shows fish numbers and average size are increasing (for example James Cook University research in the Whitsunday Islands found numbers of both coral trout and stripey sea perch were more than 1.7 times 	adequate	improving

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • Revised zoning plan providing a stronger basis for biodiversity conservation in the Great Barrier Reef • Great Barrier Reef Biodiversity Conservation Strategy, 2013 provides a basis for a more coordinated program aimed at biodiversity management • Initiation of COTS program with increased funding • Preliminary biodiversity condition and trend assessments for Outlook 2014 show a mixed picture (nine species/habitats declining in most places, 11 stable and only two (crocodiles and whales) clearly improving) • Inshore biodiversity is under increasing pressure – trends for some species and habitats declining (for example corals, seagrass, dugongs, dolphins) • Cumulative impacts still not addressed well. • Water quality and coastal management –ongoing problems – see Brodie 2012 –changes in environmental governance, especially in relation to coastal planning and development in Queensland are likely to impede progress • Significant global or national action to mitigate climate change not evident 	<p>higher and average fish size was larger)</p> <ul style="list-style-type: none"> • Research conducted by the Australian Institute of Marine Science, on offshore reefs from Cairns to Gladstone, found coral trout is now about 50 per cent more abundant in Marine National Park (Green) Zones. 		
<p>OC2 The outputs relating to biodiversity are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)</p>	<p>2</p>	<ul style="list-style-type: none"> • Recent data indicating 50 per cent decline in coral cover and relative contribution of causal factors (cyclones, COTS and bleaching) indicative of extent of cumulative and consequential impacts • Recent report on coastal ecosystems prepared by GBRMPA has identified significance and extent to cumulative impacts on coastal ecosystems and the Great Barrier Reef Region. • Preliminary biodiversity condition and trend assessments for Outlook 2014 show a mixed picture (nine species/habitats declining in most places, 11 stable and only two (crocodiles and whales) clearly improving) • dugong numbers declining 	<ul style="list-style-type: none"> • Great Barrier Reef Biodiversity Strategy & Vulnerability Assessments • De'ath et al 2012 The 27–year decline of coral cover on the Great Barrier Reef and its causes <i>PNAS</i> www.pnas.org/cgi/doi/10.1073/pnas.1208909109 	<p>adequate</p>	<p>deteriorating</p>

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Green turtles at risk, but loggerhead numbers improving? Significant global or national action to mitigate climate change not evident 			
OC3 the outputs (refer OP1 and 3) for biodiversity are reducing the major risks and the threats to the Great Barrier Reef	3	<ul style="list-style-type: none"> Water quality and resilience enhancement efforts should improve prospects for biodiversity conservation especially inshore and southern regions of the Great Barrier Reef but may take many years to assess change in condition trend of biodiversity. The continuation of Reef Rescue funding until 2018 to support ongoing reductions in the amount of nutrients and sediments entering the Reef from the catchment will assist continued improvement in the Region's water quality. Other pressures from coastal development, ports and shipping, and climate change are increasing so overall impact on biodiversity conservation is uncertain COTS control program to be significantly expanded Compliance data shows a significant increase in illegal activity, especially in the recreational fishing sector but this may be the results of improved surveillance rather than a real increase in fishing infringements. 	<ul style="list-style-type: none"> Draft Great Barrier Reef Strategic Assessment Report 	limited	deteriorating
OC4 Use of the Great Barrier Reef relating to biodiversity is demonstrably environmentally sustainable	2	<ul style="list-style-type: none"> The health of the Great Barrier Reef is declining, particularly in inshore areas south of Cooktown, and management is not keeping pace with the cumulative impacts that are acting on the system. The causes of decline are known and the potential for restoration is strong provided we avoid a 'business as usual' approach. Without urgent and effective additional management intervention the Region's biodiversity values are likely to continue to deteriorate. Preliminary biodiversity condition and trend assessments for Outlook 2014 show a mixed 	<ul style="list-style-type: none"> Draft Great Barrier Reef Strategic Assessment Report Chapter 11 and Demonstration Cases Preliminary biodiversity condition and trend assessments for Outlook 2014 McCook, L.J. et al. (2010) Adaptive management of the Great Barrier Reef: a globally significant demonstration of the benefits of networks of marine reserves, <i>PNAS</i> 107(43): 18278-18285. De'ath et al 2012 The 27-year decline of coral cover on the Great Barrier Reef and its causes <i>PNAS</i> www.pnas.org/cgi/doi/10.1073/pnas.1208909109 	limited	deteriorating

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>picture (nine species/habitats declining in most places, 11 stable and only two (crocodiles and whales) clearly improving)</p> <ul style="list-style-type: none"> • The past decade of extreme weather events has taken its toll on the Reef. The frequency of cyclones and floods has reduced the capacity of the Reef ecosystem to recover from these and other disturbances such as outbreaks of crown-of-thorns starfish. Legacy issues, such as broadscale catchment clearing and commercial harvesting of iconic species, are still affecting the Reef. Some of these issues go back decades, even to the 1800s, and their impacts are likely to continue long into the future. • The impacts do not operate in isolation, but overlap and interact with each other. Their accumulation through time and over an ever-increasing area is diminishing the ecosystem's ability to bounce back. There is increasing evidence that both the ecosystem's resistance and its capacity to recover is being lost, although the extent of that loss varies considerably between ecosystem components (for example, dugong compared to some fishes) and between localities (for example, the inshore southern two-thirds of the Region compared to places offshore and further north). • Data show both improvements (humpback whales, fish in "green zones") but also significant declines (coral cover inshore and southern Great Barrier Reef, dugong, etc.) • Five of six species of turtles in Great Barrier Reef have declined • Draft status and trend assessment shows many more declines in species than stable or increasing species populations but status is uncertain for many groups because of a lack of data. 			
OC5 Use of the Great Barrier Reef relating	3	<ul style="list-style-type: none"> • Decline in condition in southern inshore Great 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Report 	adequate	stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
to biodiversity is demonstrably economically sustainable		<p>Barrier Reef may have long term effect on value of tourism and recreational use of the Reef.</p> <ul style="list-style-type: none"> • Tourism is major industry underpinned by biodiversity of Great Barrier Reef • Fisheries is major industry also underpinned by biodiversity • External market influences and costs of production are making some fisheries operating within the Great Barrier Reef unviable. • Recreational fishing on the other hand is an important contributor to economic sustainability of regional communities. 	<p>Chapter 5, 7 and 11 and Demonstration Cases</p> <ul style="list-style-type: none"> • Preliminary biodiversity condition and trend assessments for Outlook 2014 • Social and economic long-term monitoring programme (SELTMP) • Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 		
OC6 Use of the Great Barrier Reef relating to biodiversity is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> • Social sustainability in the long term will depend on environmental sustainability of the Great Barrier Reef and this is of concern especially in the southern inshore region adjacent to the major population centres along the coast. • Surveys show 75 per cent of local residents and 82 per cent of tourists rated satisfaction with their Great Barrier Reef experience as very high • Uptake of Reef Guardian program within community is indicative of community interest in and concern for the Reef • A significant move forward since Outlook Report 2009 has been a stronger focus on embedding GBRMPA key communication messages as part of exhibition development in the Great Barrier Reef Aquarium. This provides a community engagement/education opportunity that helps to distil often quite complex and scientific based information into thematic formats that are more easily understood. 	<ul style="list-style-type: none"> • Social and economic long-term monitoring programme (SELTMP) • Draft Great Barrier Reef Strategic Assessment Report Chapter 5, 7 and 11 and Demonstration Cases 	limited	stable
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address biodiversity	4	<ul style="list-style-type: none"> • Many examples of partnerships <ul style="list-style-type: none"> ○ Reef Guardian program ○ LMACs and RACs ○ Eye on the Reef program • Existing liaison arrangements and specialist staff 	<ul style="list-style-type: none"> • Draft Great Barrier Reef Strategic Assessment Report Chapters 3 and 8 and Demonstration Cases 	adequate	Stable

Component of management of biodiversity	Rating	Justification	Evidence/sources	Confidence	Trend
		within GBRMPA to manage these relationships <ul style="list-style-type: none"> • Reef Guardian School curriculum resources are designed to fit the Australian Curriculum, and reflect the key risks as outlined in Outlook Report 2009 • Partnerships with industry (AMPTO, QSIA) and research providers (AIMS, JCU, UQ, CSIRO) 			

Table 34 Calculation of grades for heritage (Indigenous)

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to Indigenous heritage are understood by managers	3	<ul style="list-style-type: none"> The Great Barrier Reef Strategic Assessment Report summaries the key values relevant to Indigenous Heritage Indigenous heritage is recognised to a limited extent in the Heritage Strategy Reef Rescue Land and Sea Country Indigenous Partnerships Program also recognised key issues relevant to the management of Indigenous heritage The Reef Rescue Land and Sea Country Indigenous Partnerships Program is consistent with the implementation of Article 10 of the Convention (sustainable use of biodiversity), with a focus on Article 10(c) (customary sustainable use) 	<ul style="list-style-type: none"> There are more than 70 Aboriginal and Torres Strait Islander Traditional Owner groups that have long continuing relationships with the Great Barrier Reef region and its natural resources. The groups that express connections to the Great Barrier Reef Marine Park are situated along the Queensland coast from the eastern Torres Strait Islands in the north to near Bundaberg in the south (See REEF ED website) Great Barrier Reef Strategic Assessment 	Adequate	Improving
CO2 The current condition and trend of values relevant to Indigenous heritage are known by managers	2	<ul style="list-style-type: none"> The Great Barrier Reef Strategic Assessment (Table 7.6) presents a summary of condition and trend for Indigenous heritage values. 	<ul style="list-style-type: none"> Chapter 4-7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified at http://www.reefhaveyoursay.com.au/draft-reports and associated demonstration cases and technical reports http://www.reefhaveyoursay.com.au/draft-reports and stakeholder engagement report Appendix 5 - Traditional Owner and Stakeholder Engagement - Report on Workshops and Surveys State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Limited	Improving
CO3 Impacts (direct, indirect and cumulative) associated with Indigenous heritage are understood by managers.	2	<ul style="list-style-type: none"> A summary of the impacts associated with Indigenous heritage is provided in the Great Barrier Reef Strategic Assessment. Some direct impacts (such as conflicting use, disturbance to cultural sites) are known to managers and managed through existing planning tools. 	<ul style="list-style-type: none"> Chapter 4-7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified at http://www.reefhaveyoursay.com.au/draft-reports 	Limited	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
			<p>and associated demonstration cases and technical reports http://www.reefhaveyoursay.com.au/draft-reports and stakeholder engagement report Appendix 5 - Traditional Owner and Stakeholder Engagement - Report on Workshops and Surveys State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013</p>		
<p>CO4 The broader (national and international) level influences relevant to Indigenous heritage are understood by managers.</p>	4	<ul style="list-style-type: none"> • The national and international influences relevant to Indigenous heritage are well known. • For example, there is a range of other Commonwealth and Queensland legislation relevant to management of the Region. Management is also guided by Australia's obligations under relevant international conventions. <ul style="list-style-type: none"> ○ <i>Environment Protection and Biodiversity Conservation Act 1999</i> regulates actions that have, will have or are likely to have, a significant impact on matters of national environmental significance. ○ <i>Native Title Act 1993</i> recognises and protects native title and includes a mechanism for determining claims to native title. ○ <i>Native Title (Queensland) Act 1993</i> ○ Convention concerning the Protection of the World Cultural and Natural Heritage, 1972 ○ Convention on Biological Diversity, 1992. • The role of Indigenous parties in the management of World Heritage Areas is also clearly articulated. 	<ul style="list-style-type: none"> • Chapter 4-7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified at http://www.reefhaveyoursay.com.au/draft-reports and associated demonstration cases and technical reports http://www.reefhaveyoursay.com.au/draft-reports and stakeholder engagement report Appendix 5 - Traditional Owner and Stakeholder Engagement - Report on Workshops and Surveys State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 • Mission Report --- Reactive Monitoring Mission to Great Barrier Reef (Australia), 6 to 14 March 2012 • State of the Environment Report 2011 www.environment.gov.au/soe/2011/report/marine-environment 	Adequate	Improving
<p>CO5 The stakeholders relevant to Indigenous heritage are well known by managers.</p>	4	<ul style="list-style-type: none"> • The Authority has an Indigenous Partnerships Group that has established good relationships with Aboriginal and Torres Strait Islander people. • An Indigenous Reef Advisory Committee (IRAC) and provision has been made for Indigenous representation on each of the other three Reef Advisory Committees. 	<ul style="list-style-type: none"> • http://www.gbrmpa.gov.au/about-us/reef-advisory-committee 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
PLANNING					
PL1 There is a planning system in place that effectively addresses Indigenous heritage	2	<ul style="list-style-type: none"> The GBRMP Act and Regulations provide the head of power for the protection of cultural values and consideration of potential impacts to cultural heritage through the permitting process (see 88Q and R of the Regulations). As part of the permitting process under the Native Title Act a "Notification" summarising a permit application is sent to the relevant native title holders or representative body as per the <i>Native Title Act 1993</i> (see Example Notification in supporting evidence). Sea Country Plans help Indigenous communities describe their objectives for the use, conservation and management of sea country and to work with others to achieve them. TUMRAs provide for a voluntary agreement about levels of marine resource take. This does include Indigenous heritage but managers support Traditional Owners to maintain their heritage through on-country activities. Condition and trend information of this maintained heritage is not required. TUMRAs have the potential to facilitate future information sharing on Indigenous heritage values. Indigenous heritage values are discussed in general in the Authority's Heritage Strategy (2006) but is not in sufficient detail to enable planning and management for this topic (consideration of Indigenous heritage is needed to allow for effective planning and management). The GBRMPA's Corporate Plan includes heritage in the following two aims: 'To recognize the heritage values of the Great Barrier Reef Marine Park and the Authority's responsibility to identify and care for those values, consistent with current best practice' and 'To work with Aboriginal and Torres Strait Islanders in a way that takes account of traditional affiliations, culture, heritage values and rights in management of the Marine Park'. The operationalization of these aims is still not fully captured in a specific plan. 	<ul style="list-style-type: none"> S2A of the Great Barrier Reef Marine Park Act 1975 R88Q and r88R of the Great Barrier Reef Marine Park Regulations 1983. "A Reef-wide framework for managing traditional use of marine resources in the Great Barrier Reef Marine Park.": http://www.gbrmpa.gov.au/_data/assets/pdf_file/0016/5461/Dobb-2007.pdf Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (C'with) http://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements Corporate Plan Plans of Management: <ul style="list-style-type: none"> Cairns PoM (see Div 3) Whitsunday PoM (see Div 3) Hinchinbrook PoM (see Div 2) 	Adequate	Improving
PL2 The planning system for Indigenous heritage addresses the major factors influencing the Great Barrier Reef Region's values.	2	<ul style="list-style-type: none"> Traditional use of marine resources may include activities that are identified as part of Aboriginal and Torres Strait Islander people's customs or traditions, for the purposes of satisfying personal, domestic or communal needs. In addition to specific management strategies for the sustainable use of species, other TUMRA activities may include cultural heritage mapping/surveys; protection, research and monitoring sea country; compliance, leadership, knowledge management; education, information 	<ul style="list-style-type: none"> GBRMPA Management effectiveness workshop 	Limited	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>exchange; language mapping on sea country.</p> <ul style="list-style-type: none"> Seven formal Traditional Owner management agreements (six TUMRA/one Indigenous Land Use Agreement (ILUA)) now cover 42,860 square kilometers of Great Barrier Reef sea country and involve 14 Traditional Owner groups. The TUMRAs and ILUA cover approximately 13 per cent of the Queensland coastline that is within the Great Barrier Reef Marine Park. Since the implementation of the Reef Rescue Program, engagement on TUMRAs has expanded from four groups (Girringun, Woppaburra, Mamu & Wuthathi) to eleven groups (Yuku-Baja- Muliku, Lama Lama, Umpila, Port Curtis- Coral Coast, Yirrganydji, Pul Pul – including Kuuku Ya'u ILUA). 			
PL3 Actions for implementation regarding Indigenous heritage are clearly identified within the plan	2	<ul style="list-style-type: none"> Sea Country Plans have been developed by Traditional Owners (see Kuku Yalanji example) for their own country (and identify values, planning needs management treatments) – these types of plans are funded by the GBRMPA and SEWPaC. Currently these plans are not implemented into the EIM assessment processes. Plans of Management in high use areas clearly articulate and manage conflicting uses which may affect cultural heritage in Cairns, Whitsundays and Hinchinbrook. The GBRMPA's Corporate Plan includes heritage in the following two aims: 'To recognize the heritage values of the Great Barrier Reef Marine Park and the Authority's responsibility to identify and care for those values, consistent with current best practice' and 'To work with Aboriginal and Torres Strait Islanders in a way that takes account of traditional affiliations, culture, heritage values and rights in management of the Marine Park'. Actions for implementation regarding Indigenous heritage are also included in the Reef Rescue Land and Sea Country Indigenous Partnerships Program. 	<ul style="list-style-type: none"> Managing Traditional Use Corporate Plan Plans of Management: <ul style="list-style-type: none"> Cairns PoM (see Div 3) Whitsunday PoM (see Div 3) Hinchinbrook PoM (see Div 2) 	Limited	Improving
PL4 Clear, measurable and appropriate objectives for management of Indigenous heritage have been documented	2	<ul style="list-style-type: none"> Objectives for management of Indigenous Heritage are clearly articulated in Plans of Management by supporting cultural use of the Marine Park and limiting uses in areas of known cultural significance (for example, no pontoons or moorings, etc). Reef Rescue Land and Sea Country Indigenous Partnerships Program also includes measurable objectives The Indigenous Partnerships Group has clear, measurable and appropriate objectives within their Annual Operating Plan. 	<ul style="list-style-type: none"> Plans of Management: <ul style="list-style-type: none"> Cairns PoM (see Div 3) Whitsunday PoM (see Div 3) Hinchinbrook PoM (see Div 2) Corporate Plan 	Limited	Improving
PL5 There are plans and systems in place to	2	<ul style="list-style-type: none"> Reef Rescue Land and Sea Country Indigenous Partnerships 	<ul style="list-style-type: none"> GBRMPA Indigenous Partnerships Caring for our 	Limited	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
ensure appropriate and adequate monitoring information is gathered in relation to Indigenous heritage		Program requires detailed reporting and evaluation of the program. (MERI Plan)	Country Monitoring , evaluation Reporting and Improvement Plan		
PL6 The main stakeholders &/or the local community are effectively engaged in planning to address Indigenous heritage	3	<ul style="list-style-type: none"> The Sea Country Partnerships Grants Program includes successful projects which include things like engaging Traditional Owners in Seagrass-Watch, community awareness of impacts, turtle tagging, etc. The Position Statement on Indigenous Participation in Tourism and its Management identifies Indigenous groups as key partners. The Vision is "As joint partners, Tourism Queensland, the Queensland Parks and Wildlife Service and the Authority are working with Indigenous groups plus other government agencies and tourism operators to enhance Indigenous participation in tourism and its management in the Great Barrier Reef." However it is unclear if this work has been implemented. The Reef Rescue Program has strengthened communications across the community to build a better understanding of Traditional Owner issues on the management of the Great Barrier Reef Marine Park. 	<ul style="list-style-type: none"> Position Statement on Indigenous Participation in Tourism http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/tourism-on-the-great-barrier-reef/indigenous-participation-in-tourism http://www.gbrmpa.gov.au/_data/assets/pdf_file/0008/3986/gbrmpa_IndigenousParticipationPositionStatement_2005.pdf Sea Country Partnerships projects: <ul style="list-style-type: none"> 2010-2011: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0004/4882/Summary-of-successful-2010-2011-Sea-Country-Partnerships-Grants-projects.pdf 2011-2012: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0007/17881/2011-12-Successful-Grants-projects.PDF 	Limited	No clear trend
PL7 Sufficient policy currently exists to effectively address Indigenous heritage	2	<ul style="list-style-type: none"> Currently there is no overarching Indigenous Strategic Framework as a major policy driver but it is understand that this was approved in September 2012 for development by the GBRMPA. A specific cultural heritage policy for Indigenous heritage does not exist. There is no established offsets policy or cultural heritage strategy to guide the assessment process, which also contributes to the jurisdictional inconsistency. Position Statement on Indigenous Participation in Tourism and its Management. The Vision is "As joint partners, Tourism Queensland, the Queensland Parks and Wildlife Service and the Authority are working with Indigenous groups plus other government agencies and tourism operators to enhance Indigenous participation in tourism and its management in the Great Barrier Reef". Dugongs have high cultural, social and spiritual significance for 	<ul style="list-style-type: none"> Position Statement on Indigenous Participation in Tourism http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/tourism-on-the-great-barrier-reef/indigenous-participation-in-tourism http://www.gbrmpa.gov.au/_data/assets/pdf_file/0008/3986/gbrmpa_IndigenousParticipationPositionStatement_2005.pdf Dugong Position Statement: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0005/3893/gbrmpa_DugongPositionStatement_2007.pdf 	Adequate	Stable

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>Indigenous Australians and feature in Indigenous stories and art. This is recognised in the Position Statement on conservation of dugongs in the Great Barrier Reef.</p> <ul style="list-style-type: none"> A national partnership approach to assist Indigenous communities to achieve sustainable harvests of turtles and dugongs being developed by the Marine And Coastal Committee Taskforce. 			
PL8 There is consistency across jurisdictions when planning for Indigenous heritage	3	<p>TUMRA Accreditation Process:</p> <ul style="list-style-type: none"> The GBRMPA undertakes the majority of negotiations with Traditional Owners for the TUMRA process. The GBRMPA also leads the assessment/accreditation of the TUMRAs. Queensland government instigate their delegations and co-accredit TUMRAs with the GBRMPA. For example, on 30 August 2011, the Port Curtis Coral Coast regional TUMRA was jointly accredited by the Queensland and Australian governments following a lengthy assessment process. <p>Permit Assessment Processes</p> <ul style="list-style-type: none"> The permit assessment process for large development applications that require an Australian and Queensland Government permit are often inconsistent with regard to protection of Indigenous and Cultural Heritage. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Stable
PL9 Plans relevant to Indigenous heritage provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.	3	<ul style="list-style-type: none"> Plans regarding access to resources and extractive activities (for example Traditional use) are clear and provide certainty Zoning Plan Permits, Plans of Management, Site Planning arrangements, Policy TUMRAs 	<ul style="list-style-type: none"> Plans of Management: <ul style="list-style-type: none"> Cairns PoM (see Div 3) Whitsunday PoM (see Div 3) Hinchinbrook PoM (see Div 2) 	Adequate	Improving
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address Indigenous	3	<ul style="list-style-type: none"> The Australian Government has committed to over \$10M over five years for The Reef Rescue Land and Sea Country Indigenous Partnerships Program 2013-2018 The Reef Rescue Land and Sea Country Indigenous Partnerships Program is closely coordinated with other Caring for our Country 	<ul style="list-style-type: none"> More about Working on Country http://www.environment.gov.au/indigenous/index.html 	Adequate	Stable

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
heritage		Indigenous Partnership initiatives, which provide opportunities for longer-term funding and employment such as Working on Country, while also contributing to broader Australian Government goals including Closing the Gap for Indigenous Australians.			
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address Indigenous heritage	2	<ul style="list-style-type: none"> The GBRMPA's Indigenous Partnerships group contains five FTE and seven non-ongoing staff as part of the Reef Rescue funding. The experience of these staff encompasses a wide range of skill sets relevant to management of Indigenous Heritage. Expert advice is also available on heritage matters through the Conservation, Heritage and Indigenous Reef Advisory Committee. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address Indigenous heritage	3	<ul style="list-style-type: none"> The Authority's Indigenous Partnerships group encompasses a wide range of skill sets and experiences relevant to management of Indigenous partnerships. Expert advice is also available on heritage matters through the Conservation, Heritage and Indigenous Reef Advisory Committee (IRAC). However, within the GBRMPA skills to address Indigenous Heritage are concentrated within IPG and to some extent compliance and species conservation. There is no overarching training or skill sets for managers to ensure Indigenous Heritage is addressed consistently and adequately. It is a management topic that should be understood by all staff members. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Stable
IN4 The necessary biophysical information is currently available to address Indigenous heritage	3	<ul style="list-style-type: none"> Information on physical location and values of cultural heritage sites are poorly documented. The Great Barrier Reef Biodiversity Conservation Strategy 2012 provides a framework for improving biodiversity conservation in the Great Barrier Reef Region. The strategy's approach includes continuing to foster industry and community stewardship of the Reef, building ecosystem resilience in a changing climate and improving our knowledge to make more informed decisions. 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/_data/assets/pdf_file/0020/21728/gbrmpa-BioStrategy-DRAFT-Aug-2012.pdf http://www.gbrmpa.gov.au/about-the-reef/biodiversity/draft-biodiversity-conservation-strategy/vulnerability-assessments 	Adequate	Improving
IN5 The necessary socio-economic information is currently	2	<ul style="list-style-type: none"> There is little data available to address The social and economic long-term monitoring program in collaboration with CSIRO (National Environmental Research 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No clear trend

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
available to address Indigenous heritage		Program Project 10.1). is aimed at creating greater understanding of how people use and benefit from the Great Barrier Reef World Heritage Area, including coastal and catchment communities, marine tourism, commercial and recreational fishing, Traditional Owners and the shipping sector.			
IN6 The necessary Indigenous heritage information is currently available to address Indigenous heritage	3	<ul style="list-style-type: none"> • Good information is available but it is siloed within the Indigenous Partnership group due to inadequate processes in place to handle and disseminate the information across the GBRMPA (see processes section). • The Reef Rescue Program has strengthened communications across the community to build a better understanding of Traditional Owner issues on the management of the Great Barrier Reef Marine Park: <ul style="list-style-type: none"> ○ Over \$1m provided to Traditional Owners of the Great Barrier Reef under the small grants program (capped at \$50K); representing twenty three projects focused on the management of natural and cultural values across all four MarinePark management areas. Six traditional owner groups from Cairns to Cape York received grants of between \$30,000 and \$50,000 for environmental projects along the Great Barrier Reef. The grants allow Traditional Owner groups to "monitor seagrass, receive training in sea country management and become Junior Reef Ambassadors". Grant recipients will complete their projects over the next 12 months. ○ The Sponsorship Program has provided support to approximately 75 Traditional Owners to share and increase their knowledge and skills base in sea country management. ○ Sense Activity (Leadership) Project – the SAP pilot project in Rockhampton has focused on Indigenous male students and is based on sensory activities where the student group can learn holistically from Traditional Owners, the Authority and Queensland Parks and Wildlife Service (QPWS) about the protection and conservation of land and sea country. ○ A successful Great Barrier Reef Sea Country Photographic Competition in 2012 provided an important visual avenue for the community to communicate Indigenous sea country management initiatives such as TUMRAs, Reef Rescue Grants and Compliance Projects. Another aim of the competition was to foster awareness about Aboriginal and Torres Strait Islander Traditional Owners, their sea country 	<ul style="list-style-type: none"> • Chapter 7 of the draft Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report and noting information gaps were identified at http://www.reefhaveyoursay.com.au/draft-reports and associated demonstration cases and technical reports http://www.reefhaveyoursay.com.au/draft-reports and stakeholder engagement report Appendix 5 - Traditional Owner and Stakeholder Engagement - Report on Workshops and Surveys 	Limited	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
		areas and the ways they contribute to the management of the Great Barrier Reef. The Authority now has access to an additional 80 sea country images.			
IN7 The necessary historic heritage information is currently available to address Indigenous heritage	NA				
IN8 There are additional sources of non-government input (for example volunteers) contributing to address Indigenous heritage	3	<ul style="list-style-type: none"> Voluntary participation in Eyes and Ears compliance networks contributes to protect matters that underpin Indigenous Heritage. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of Indigenous heritage	3	<ul style="list-style-type: none"> The Authority established the Indigenous Reef Advisory Committee (IRAC) to: <ul style="list-style-type: none"> provide strategic guidance on Indigenous Partnerships matters provide advice on the application of world's best practice principles to sea country planning and implementation recommend ways to facilitate partnerships, build capacity and engage with Traditional Owner groups in the management of marine resources in the Great Barrier Reef. Together, the IRAC members bring expertise and experience in Indigenous partnership initiatives and sea country management from within the Great Barrier Reef and from elsewhere around Australia. The IRAC recommend the following priority areas for the Reef Rescue Land and Sea Country Indigenous Partnerships Program: <ul style="list-style-type: none"> Sea country planning including Traditional Use of Marine Resources Agreements (TUMRAs) Partnerships and communications strategy Leadership development including youth forums and young hunters forums Knowledge management including support for knowledge and information exchange, recording and people exchange Evaluation and monitoring frameworks, including reviews and co-investment Compliance activities required to support Traditional Owners 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements http://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-owners-activities http://www.gbrmpa.gov.au/our-partners/traditional-owners/saltwater-womens-gathering 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>in management of their Sea Country.</p> <ul style="list-style-type: none"> • Saltwater Women's Gathering: The GBRMPA hosted a unique two day gathering of regional Aboriginal and Torres Strait Islander Great Barrier Reef Traditional Owner women on Yunbenun (Magnetic Island) from 27-29 August 2012. The gathering provided an opportunity for Aboriginal and Torres Strait Islander women to express themselves as owners of their sea country about their cultural responsibilities, while also broadening community and management perspectives. • Public consultation on Applications/Plans: the GBRMPA consults with the public on a range of matters that concern the Marine Park, including permit applications and proposed developments. People interested in the management of the Great Barrier Reef and World Heritage Area, including proposed developments, have valuable knowledge that contribute to the assessment process. A list of current plans, applications and assessments for public consultation are available online, along with details on the process (see Public Comments website on GBRMPA web); <ul style="list-style-type: none"> ○ Established committees - Local Marine Advisory Committees, Reef Advisory Committees ○ Regional Offices (Rockhampton, Mackay, Cairns) and outreach officers ○ Joint management arrangements with Queensland (IGA) • Regulatory Impact Statements are required for all changes to policy and regulation taking into account any implications to affected members of the community (noting that this process is geared more to income indicators as opposed to connections and relationships). • Reef Guardians Program: The Reef Guardian program is a successful stewardship program that began with schools in 2003 to encourage the community to take action for a healthier Reef. The program has since been expanded to include councils, fishers, farmers and graziers. • Zoning Plan Review Stakeholder Engagement • Strategic Assessment Indigenous Stakeholder engagement meetings 			
PR2 The local community is effectively engaged in the ongoing management of Indigenous heritage	3	<ul style="list-style-type: none"> • For Traditional Owners, nature and culture combine to make a living heritage. They are increasingly re-asserting their role in managing their country through active engagement in on-country management and in policy and planning programs. • A successful Great Barrier Reef Sea Country Photographic Competition in 2012 provided an important visual avenue for the 	<ul style="list-style-type: none"> • http://www.gbrmpa.gov.au/our-partners/traditional-owners/reef-rescue • http://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>community to communicate Indigenous sea country management initiatives such as TUMRAs, Reef Rescue Grants and Compliance Projects. Another aim of the competition was to foster awareness about Aboriginal and Torres Strait Islander Traditional Owners, their sea country areas and the ways they contribute to the management of the Great Barrier Reef.</p> <ul style="list-style-type: none"> • The Reef Rescue Program has strengthened communications across the community to build a better understanding of Traditional Owner issues on the management of the Great Barrier Reef Marine Park: • Pamphlet –Working Together for green turtle management aims: <ul style="list-style-type: none"> ○ Increase awareness about impacts on green turtles ○ Education on how to assist in the protection and rescue green turtles 			
PR3 There is a sound governance system in place to address Indigenous heritage	3	<ul style="list-style-type: none"> • MPA Board has an indigenous member • Indigenous Reef Advisory Committee and Local Marine Advisory Committee attendance is funded through Reef Rescue • TUMRAs – support Indigenous governance of sea country • Management of Indigenous heritage in the Great Barrier Reef is complex and involves numerous State and Commonwealth pieces of legislation and policy. The GBRMP Act provides the head of power for consideration and protection of cultural values. The Regulations allow consideration of potential impacts on cultural values through the permitting process (see 88Q and R of the Regulations) and provide for the accreditation of TUMRA's (part 2B). Plans of Management and site planning arrangements provide some consideration for cultural heritage and aim to minimise conflicting use – but mostly with recreational users and tourism NOT major developments. • There is no specific cultural heritage strategy or policy solely for Indigenous heritage. • There is no systems in place (i.e. a cultural heritage management database) to capture, manage and spatially represent cultural heritage values. • There is no cultural protocols policy to enable culturally appropriate collection, access, use and rights to cultural heritage information. 		Adequate	Improving
PR4 There is effective performance monitoring,	3	<ul style="list-style-type: none"> • All projects supported under Reef Rescue follow performance monitoring protocols to gauge progress towards the project plan 	<ul style="list-style-type: none"> • Reef Rescue Indigenous Land and Sea Country 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
including, regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for Indigenous heritage		<p>objectives.</p> <ul style="list-style-type: none"> The assessment of the Heritage Strategy identifies that actions in relation to Indigenous heritage are either complete or underway with satisfactory progress. 	Partnerships Program.		
PR5 Appropriate training is available to the managing agencies to address Indigenous heritage	2	<ul style="list-style-type: none"> There is no formal training offered to managers on cultural heritage/awareness. In the past the GBRMPA supported annual cultural awareness training on country (at Gould Island and at the Laura Festival). This training is no longer available to staff due to inadequate funding. The GBRMPA's Indigenous Partnerships Group (IPG) staff are required to have core competencies to meet the required standards for effective communication with, and knowledge of Aboriginal and Torres Strait Islander people. There is no reconciliation action plan for the Reef 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Improving
PR6 Management of Indigenous heritage is consistently implemented across the relevant jurisdictions	3	<ul style="list-style-type: none"> Consideration of potential impacts to cultural heritage is consistently considered for joint Marine Park permits under the Intergovernmental Agreement (IGA) – however, this only covers Marine Parks and not Queensland Islands. Joint permit arrangements provide some consideration for cultural heritage and aim to minimise conflicting use – but mostly with recreational users and tourism and to a lesser extent major developments (as per Regulation 88R(a) – as there are no minimum standards for engagement. Consistency with TUMRAs and MOUs with Traditional Owners between the GBRMPA and the Queensland Government.. Sea Country Plans are being developed by Traditional Owners and they also provide decision support tools for the GBRMPA. Compliance Program (ICLO) is a strong management tool enabling consistency 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop Intergovernmental Agreement 	Limited	Stable
PR7 There are effective processes applied to resolve differing views/ conflicts regarding Indigenous heritage	2	<ul style="list-style-type: none"> Joint permit arrangements provide some consideration for cultural heritage and aim to minimise conflicting use – but mostly with recreational users and tourism and to a lesser extent major developments. Given the rate of coastal development and limited access to cultural heritage knowledge the ability for managers to consider and resolve conflicts regarding permit applications and Indigenous 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Stable

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>heritage values is low.</p> <ul style="list-style-type: none"> TUMR agreements include dispute resolution processes 			
PR8 Impacts (direct, indirect and cumulative) of activities associated with Indigenous heritage are appropriately considered.	2	<ul style="list-style-type: none"> Due to lack of detailed information or an Indigenous heritage strategy, managers struggle to manage the impacts on cultural heritage appropriately. Traditional use, mainly through hunting, fishing and collecting, involves a range of marine species but overall levels of take are thought to be low. Managers works with Traditional Owners and scientists to access the best information available on culturally-important species such as dugong and green turtles. Scientists can estimate the total losses these populations can withstand and still maintain population recovery or increases. Traditional Owners use these estimates as the basis for determining ecologically sustainable levels of take for these animals. Green turtles and dugong are vulnerable to a range of impacts including boat strike, habitat degradation, bycatch, pollutants, marine debris and disease. Current responsible hunting by Traditional Owners is considered to be sustainable, provided other threats are addressed. Illegal hunting of threatened species by people who are not Traditional Owners (known as poaching) is a concern of Traditional Owners and managing agencies. 	<ul style="list-style-type: none"> Impacts of Traditional Hunting: http://www.gbrmpa.gov.au/outlook-for-the-reef/Managing-multiple-uses/traditional-use 	Adequate	Improving
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding Indigenous heritage	3	<ul style="list-style-type: none"> While there is significant knowledge about biophysical research and monitoring, due to lack of information on Indigenous heritage managers struggle to appropriately apply biophysical information when making decisions about cultural heritage. A population model for northern Great Barrier Reef green turtles was developed in 2011–12 to assess the impact of management scenarios. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding Indigenous heritage	2	<ul style="list-style-type: none"> Little information is available TUMRAs/ILUA process takes socio-economic information into account, but it is not necessarily detailed. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No clear trend
PR11 The best available Indigenous heritage information is	2	<ul style="list-style-type: none"> Due to lack of detailed information or an Indigenous heritage strategy, managers struggle to make appropriate management decisions on cultural heritage appropriately. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
applied appropriately to make relevant management decisions regarding Indigenous heritage		<ul style="list-style-type: none"> • Managers also recognises gaps in their knowledge of the following specific aspects of Indigenous heritage values and their appropriate management: <ul style="list-style-type: none"> ○ places of significance for Traditional Owners, including sacred sites, spiritual sites, burial sites, songlines and ceremonial sites — some of which may not be at all obvious ○ tangible places of importance for Indigenous people, including middens, fish traps, scarred trees, camp sites and rock art sites ○ archaeological sites or Indigenous places recognised as being of national significance (for example, the axe quarry on South Molle Island and the 'contact' rock art of Flinders Island) ○ intangible story places and songlines and their connections to biodiversity values and ecological processes ○ places or totems and the reasons they are of contemporary value to Indigenous people. • Information gathered from TUMRA/ILUA process used, however managers outside of the GBRMPA's Indigenous Partnerships Group do not have has access to it. • Story Place - Information on traditional connections to sea – is a reference database that shares information and knowledge about Traditional Owners and their relationship with land and sea country in the Great Barrier Reef Region. • Systems and resources are not available to apply valuable information when it is obtained. 			
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding Indigenous heritage	NA				
PR13 Relevant standards are identified and being met regarding Indigenous heritage	2	<ul style="list-style-type: none"> • There is no documented standards for the capture and handling of culturally sensitive material (except with regard to photographs and permission to use these). • Managers are bound by legislation concerning Native Title 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Limited	No clear trend

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
PR14 Targets have been established to benchmark management performance for Indigenous heritage	3	<ul style="list-style-type: none"> Clear targets for Reef Rescue projects have been established to benchmark performance (see Project Plan). However there are no specific targets to manage performance of Indigenous heritage 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/our-partners/traditional-owners/reef-rescue 	Adequate	Improving
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for Indigenous heritage	3	<ul style="list-style-type: none"> The Reef Rescue Land and Sea Country Indigenous Partnership Program has delivered on: <ul style="list-style-type: none"> Expansion of the Traditional Use of Marine Resources Agreements (TUMRA).program across the Great Barrier Reef, including enhanced Compliance Strengthened communications between local communities, managers and Reef stakeholders in building a better understanding of Traditional Owner issues about the management of the Great Barrier Reef Marine Park and World Heritage Area. 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/our-partners/traditional-owners/reef-rescue 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to Indigenous heritage have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> Reef Rescue Projects: The program has 100 percent completion against all milestone requirements , and has entered into another five year program 	<ul style="list-style-type: none"> http://www.gbrmpa.gov.au/our-partners/traditional-owners/reef-rescue 	Adequate	Improving
OP3 The results (in OP1 above) have achieved their stated management objectives for Indigenous heritage	3	<ul style="list-style-type: none"> Since the implementation of the Reef Rescue Program the GBRMPA has expanded its engagement on the TUMRA from four groups (Girringun, Woppaburra, Mamu & Wuthathi) to 11 (YBM, Lama Lama, Umpila, PCCC, Yirrganydji, Pul Pul – including Kuuku Ya'u ILUA). In addition to the formal TUMRA pathway, a further four Traditional Owner groups Yirrganydji, Gimuy Yidinji, Gunggandji and EKY (representative of multiple Traditional Owner groups) are now involved in either a TUMRA development or sea country planning process (supported by the small grants program). The GBRMPA's Compliance Area has increased positive and meaningful communications with community ranger groups on potential incidents in the park, demonstrating the effectiveness of engagement. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop Reef Rescue Indigenous Land and Sea Country Partnerships Program. 	Adequate	Improving
OP4 To date, products or services have been	4	<ul style="list-style-type: none"> Reef Rescue Program Projects have all been produced in accordance with the objectives for Indigenous Heritage. 	<ul style="list-style-type: none"> Reef Rescue Indigenous Land and Sea Country Partnerships Program. 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
produced in accordance with the stated management objectives for Indigenous heritage			<ul style="list-style-type: none"> Strategic plan Reef Rescue (in particular pages 3-6) 		
OP5 Effective knowledge management systems regarding Indigenous heritage are in place within agencies	2	<ul style="list-style-type: none"> While Traditional Owners have a good understanding of their own country and its values, this has rarely been integrated into the broader information systems of managing agencies. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving
OP6 Effective systems are in place to share knowledge on Indigenous heritage with the community	2	<ul style="list-style-type: none"> The Authority's website <i>Story Place</i> is a reference database that shares information and knowledge about traditional connections to sea.⁴⁶ 	<ul style="list-style-type: none"> Story Place - Information on traditional connections to sea – is a reference database that shares information and knowledge about Traditional Owners and their relationship with land and sea country in the Great Barrier Reef Region., nothing that protocols and lore provide direction about what information it is culturally appropriate to share, and with whom. 	Adequate	Improving
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing Indigenous heritage and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> Outcomes from the Reef Rescue program, and TUMRAS/IULAs address many of the outcomes 	<ul style="list-style-type: none"> Reef Rescue Indigenous Land and Sea Country Partnerships Program. 	Adequate	Improving
OC2 The outputs relating to Indigenous heritage are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> Outputs associated with Reef Rescue and TUMRAS protect the values of the Great Barrier Reef. 	<ul style="list-style-type: none"> Reef Rescue Indigenous Land and Sea Country Partnerships Program. 	Adequate	Improving
OC3 the outputs (refer OP1 and 3) for Indigenous heritage are reducing the major risks and the threats to the Great Barrier Reef	3	<ul style="list-style-type: none"> Several outcomes from the Reef Rescue projects are reducing risks from illegal hunting, killing of vulnerable species, biodiversity protection, etc. TUMRAS also reduce risk of illegal hunting, and inappropriate levels of take 	<ul style="list-style-type: none"> Reef Rescue Indigenous Land and Sea Country Partnerships Program. 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to	3	<ul style="list-style-type: none"> Aboriginal people and Torres Strait Islander people have a right to continue their cultural practices within their own sea countries in 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
Indigenous heritage is demonstrably environmentally sustainable		<p>the Marine Park. This includes traditional use of marine resources through activities such as collecting, hunting and fishing. Indigenous and cultural connections with the Great Barrier Reef are important to the understanding of the environment and its sustainability for the long term.</p> <ul style="list-style-type: none"> • Development of TUMRAs/ILUAs that define allowable take, and associated compliance programs improve the environmental sustainability • Moratorium on hunting (voluntary) has occurred at a number of sites. For example, there is no take at Mon Repos (PCCC), don't take dugong. Three of the six saltwater groups in Girrigun have a "no take" policy. The remaining three manage numbers through the TUMRA but have applied a moratorium since cyclone Yasi. 			
OC5 Use of the Great Barrier Reef relating to Indigenous heritage is demonstrably economically sustainable	NA				
OC6 Use of the Great Barrier Reef relating to Indigenous heritage is demonstrably socially sustainable enhancing understanding and/or enjoyment	3	<ul style="list-style-type: none"> • Within the Great Barrier Reef Region there are a number of Indigenous Protected Areas – an area of Indigenous-owned land or sea where traditional owners have entered into an agreement with the Australian Government to promote biodiversity and cultural resource conservation. Indigenous Protected Areas protect Australia's biodiversity while providing training and employment for Aboriginal people on their own country. The Indigenous Protected Areas are helping to close the gap of Indigenous disadvantage, with communities reporting better health, social cohesion and higher school attendance. • Under the Reef Rescue Program, specific communications tools will be developed to support Traditional Owners in their efforts to establish co-management arrangements and increase wider community support and Indigenous endorsement of the program. 	Reef Rescue Indigenous Land and Sea Country Partnerships Program.	Adequate	Improving
OC7 The relevant managing agencies have developed effective partnerships with local	3	<ul style="list-style-type: none"> • Further expansion of the TUMRA program is progressing through partnerships with over ten other Traditional Owner groups, investigating the development of six additional TUMRAs throughout the Great Barrier Reef. Some Traditional Owner groups 	Reef Rescue Indigenous Land and Sea Country Partnerships Program.	Adequate	Improving

Component of management of heritage (Indigenous)	Rating	Justification	Evidence/sources	Confidence	Trend
communities and/or stakeholders to address Indigenous heritage		<p>have also successfully accessed a Sea Country Partnership grant in 2010-11. Collectively, managers are working with approximately 40 of the 70 Traditional Owner Groups within the Great Barrier Reef.</p> <ul style="list-style-type: none"> • Strengthened communications between local communities, managers and reef stakeholders to build a better understanding of Traditional Owner issues about the management of the Great Barrier Reef Marine Park is a key outcome of the Reef Rescue program • LMAC attendance increases community awareness and education of Indigenous heritage through the TUMRA and Reef Rescue Grants programs. 			

Table 35 Calculation of grades for heritage (historic)

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to historic heritage are understood by managers	3	<ul style="list-style-type: none"> The increasing emphasis on heritage values in the Strategic Assessment Reports have led to a vastly improved understanding of the heritage values of the Great Barrier Reef Region and the Great Barrier Reef Wprld Heritage Area.. Knowledge of some aspects of outstanding universal value such as aesthetics and geomorphological values has also improved through recent studies. In 2008, the importance of the Great Barrier Reef's heritage values was formally recognised by an addition to the main object of the Great Barrier Reef Marine Park Act that required their long-term protection and conservation. 	<ul style="list-style-type: none"> Chapter 4 of the Great Barrier Reef Region Strategic Assessment Report, and draft Great Barrier Reef Coastal Zone Strategic Assessment Report Statement of Outstanding Universal Value for the Great Barrier Reef: http://www.environment.gov.au/heritage/places/world/great-barrier-reef/values.html 	Adequate	Improving
CO2 The current condition and trend of values relevant to historic heritage are known by managers	3	<ul style="list-style-type: none"> The Strategic Assessment (Table 7.7) presents a summary of condition and trend for historic heritage values. There is good understanding and recording of some aspects of historic heritage, for example historic shipwrecks and lightstations. Heritage values are being maintained or restored at some lightstations. However, most places of historic significance are poorly recorded and their condition is not well understood. Aesthetic values: Table 7.12 presents a summary of condition and trend of aesthetic values. The significant loss of coral cover, especially in areas south of about Cooktown, has reduced underwater aesthetic value, as has increasing turbidity in inshore areas. The current condition and trend of key 	<ul style="list-style-type: none"> Chapter 7 of the Great Barrier Reef Region Strategic Assessment Report 	Adequate	Improving

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>geomorphological features is presented in Table 7.5 There has been no significant change to the geomorphology since the end of the last sea level rise 6500 years ago.</p> <ul style="list-style-type: none"> The outstanding universal value of the World Heritage Area remains largely intact. Table 7.11 presents a summary of condition and trend for each criterion. Three of the four world heritage criteria — for which the Reef was placed on the World Heritage List — are assessed as being in good to very good condition when benchmarked against their condition in 1981, and the property's integrity remains largely intact. The remaining criterion — habitats for conservation of biodiversity — is assessed as being in poor condition overall. Of particular concern is that more than half of the attributes for all criteria show a deteriorating trend since inscription of the area. 			
CO3 Impacts (direct, indirect and cumulative) associated with historic heritage are understood by managers.	3	<ul style="list-style-type: none"> A structured assessment of the effects of past and present impacts on heritage is presented in the Strategic Assessment. Many of the impacts considered are assessed to have not affected the Region's historic heritage. Of those considered to be affecting historic heritage, the effects have been assessed as either: minor or localised with no observable effects on the values; or observable in some locations, but only to the extent that limited additional intervention would be required to maintain the values. Impacts of the world heritage values are also contained in the strategic assessment 	<ul style="list-style-type: none"> Chapter 6 of the Great Barrier Reef Region Strategic Assessment Report 	Adequate	Improving
CO4 The broader (national and international) level influences relevant to historic heritage are understood by managers.	4	<ul style="list-style-type: none"> Strategic Assessment Process and UNESCO World Heritage Committee and Advisory Body processes relating to the Great Barrier Reef have focused attention on the elaboration of attributes underpinning the Outstanding Universal Value of the Great Barrier Reef and MNES. State Party report to World Heritage Committee 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Stable

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
		reflects thorough understanding of national and international influences			
CO5 The stakeholders relevant to historic heritage are well known by managers.	3	<ul style="list-style-type: none"> • Good understanding of specific stakeholders relevant to cultural and historic heritage • Other stakeholders are engaged through LMACS and RACs 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Adequate	Stable
PLANNING					
PL1 There is a planning system in place that effectively addresses heritage	2	<ul style="list-style-type: none"> • Planning to address world heritage values (for example, ecological and biological process, habitats for conservation of biodiversity) are through a number of strategies including the 25-year strategic plan for the Great Barrier Reef World Heritage Area, the Great Barrier Reef Biodiversity Conservation Strategy 2013, the zoning plan, the Reef Plan • Heritage Strategy, Heritage Management Plans, and the Corporate plan consider historic heritage. However the Heritage Strategy is considered out of date and requires review. • A Heritage Plan exists for Lady Elliott Island), • Dent Island Lightstation Heritage Management Plan has been reviewed by the Australian Heritage Council. The first joint heritage management plan under EPBC Act (GBRMPA/AMSA) • No planning documents consider World War II sites 	<ul style="list-style-type: none"> • S2A of the <i>Great Barrier Reef Marine Park Act 1975</i> • R88Q and r88R of the Great Barrier Reef Marine Park Regulations 1983. • GBRMP Act • Plans of Management: <ul style="list-style-type: none"> ○ Cairns PoM (see part 1.25) • Annual Report 2011-2012 Page 97 Case study on Lady Elliot Island Light House: http://www.gbrmpa.gov.au/data/assets/pdf_file/0020/28406/GBRMPA-Annual-Report-2011-12.pdf • Lady Elliot Island Heritage Management Plan: http://www.gbrmpa.gov.au/about-the-reef/heritage/lady-elliott-island-heritage-values 	Adequate	Improving
PL2 The planning system for heritage addresses the major factors influencing the Great Barrier Reef Region's values.	2	<ul style="list-style-type: none"> • The Heritage Strategy and Management Plans consider the major pressures and drivers, however the strategy is considered out of date and requires review. 	<ul style="list-style-type: none"> • <i>Great Barrier Reef Marine Park Heritage Strategy 2005</i> • Lady Elliot Island Heritage Management Plan: http://www.gbrmpa.gov.au/about-the-reef/heritage/lady-elliott-island-heritage-values 	Adequate	Improving
PL3 Actions for implementation regarding historic heritage are clearly identified within the plan	2	<ul style="list-style-type: none"> • Actions for implementation are identified in documents such as the Heritage Strategy, however the strategy is out of date and requires review. • Heritage issues must be considered when assessing permits and approvals 	<ul style="list-style-type: none"> • <i>Great Barrier Reef Marine Park Heritage Strategy 2005</i> 	Adequate	Stable
PL4 Clear, measurable and appropriate	2	<ul style="list-style-type: none"> • Objectives for management of historic heritage are articulated in the Heritage Strategy and Plans of 	<ul style="list-style-type: none"> • Great Barrier Reef Marine Park Heritage Strategy 2005 • Lady Elliot Island Heritage Management Plan: 	Adequate	Stable

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
objectives for management of historic heritage have been documented		<p>Management but these are not time specific and require review (see Appendix 12 of Heritage Strategy).</p> <ul style="list-style-type: none"> Objectives in the Lady Elliott Island Heritage Management Plan are appropriate The Field Management team has clear, measurable and appropriate objectives within their Annual Operating Plan. 	<p>http://www.gbrmpa.gov.au/about-the-reef/heritage/lady-elliott-island-heritage-values</p>		
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to historic heritage	2	<ul style="list-style-type: none"> GBRMPA Heritage Strategy outlines actions to identify, assess and monitor the Great Barrier Reef Marine Park's heritage values. However the strategy needs to be reviewed and updated to take into account contemporary heritage issues. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 	Limited	Stable
PL6 The main stakeholders &/or the local community are effectively engaged in planning to address historic heritage	2	<ul style="list-style-type: none"> There are low levels of community engagement in planning processes that include historic heritage (site plans, Heritage Management Plans, Heritage Strategy, policy development). 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 Lady Elliot Island Heritage Management Plan: http://www.gbrmpa.gov.au/about-the-reef/heritage/lady-elliott-island-heritage-values Low Isles Preservation Society - conservation group http://www.lips.org.au/ 	Adequate	Stable
PL7 Sufficient policy currently exists to effectively address historic heritage	2	<ul style="list-style-type: none"> Heritage strategy is out of date and requires review Insufficient policy currently exists to effectively address historic heritage 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 	Adequate	Improving
PL8 There is consistency across jurisdictions when planning for historic heritage	3	<ul style="list-style-type: none"> Intergovernmental agreement (IGA) There is agreement between Australian and Queensland governments about managing shipwrecks There is agreement between AMSA and the GBRMPA concerning lighthouses. Joint Dent Island Lightstation Heritage Management Plan 	<ul style="list-style-type: none"> Intergovernmental Agreement 	Adequate	Improving
PL9 Plans relevant to historic heritage provide certainty regarding where uses may occur, the type of activities allowed, conditions under which	2	<ul style="list-style-type: none"> Zoning plans, plans of management address this issue to some degree, however permits are considered on a case by case basis Heritage Management Plans provide clear direction. 		Adequate	Stable

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
activities may proceed and circumstances where impacts are likely to be acceptable.					
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address historic heritage	2	<ul style="list-style-type: none"> Current financial resources are minimal and often do not meet management objectives (for example, for maintenance works) to address historic heritage. 		Adequate	Stable
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address historic heritage	2	<ul style="list-style-type: none"> There are limited financial and human resources to manage historic heritage matters. The resourcing for the FMP program is also decreasing in real terms 	<ul style="list-style-type: none"> . GBRMPA management effectiveness workshop 	Adequate	Deteriorating
IN3 The right skill sets and expertise are currently available to the managing organisations to address historic heritage	2	<ul style="list-style-type: none"> Minimal skill sets and expertise within the GBRMPA to deal with historic heritage, with only one project manager dealing with Commonwealth Islands– little expertise in dealing with shipwrecks, WWII sites or other historic heritage matters. Expert advice is available on heritage matters through the Conservation, Heritage and Indigenous Reef Advisory Committees 		Limited	Stable
IN4 The necessary biophysical information is currently available to address historic heritage	3	<ul style="list-style-type: none"> Information on physical location and values of historic heritage sites are poorly documented. 		Limited	No clear trend
IN5 The necessary socio-economic information is currently available to address historic heritage	2	<ul style="list-style-type: none"> Little information is available 		Limited	No clear trend
IN6 The necessary Indigenous heritage information is currently available to address historic heritage	NA				
IN7 The necessary historic heritage	NA				

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
information is currently available to address historic heritage					
IN8 There are additional sources of non-government input (for example volunteers) contributing to address historic heritage	2	<ul style="list-style-type: none"> Low Isles Preservation Society (LIPS) play a role in the management of the Low Isles Lighthouse. Experts exist on Lightstations Some of the WWII site information is compiled by volunteers. Lessees contribute to management of historic lightstations as part their lease requirements. For most historic heritage issues there are very few volunteer programs contributing to management. 	<ul style="list-style-type: none"> Low Isles Preservation Society - conservation group http://www.lips.org.au/ 	Limited	No clear trend
PROCESSES					
PR1 The main stakeholders &/or industry(ies) are effectively engaged in the ongoing management of historic heritage	4	<ul style="list-style-type: none"> Expert advice is provided on some historic heritage matters through the Ecosystem RAC (ERAC) and Indigenous Partnerships Reef Advisory Committee. Formal advice is sought from the Australian Heritage Council for the overarching Great Barrier Reef Marine Park Heritage Strategy and heritage management plans. EPBC Act requires significant consultation during the development of Heritage Management Plans and Strategy Industries (largely the tourism industry) are engaged in planning processes for various management issues throughout the Great Barrier Reef. This needs to be extended to historic heritage issues. Local communities have the potential to be involved in historic heritage management generally through the Local Marine Advisory Committees and through planning processes for specific places. 	<ul style="list-style-type: none"> RACs GBRMPA management effectiveness workshop 	Adequate	Stable
PR2 The local community is effectively engaged in the ongoing management of historic heritage	2	<ul style="list-style-type: none"> The local community has little engagement with historic heritage due to its low profile within the GBRMPA. Volunteers are involved in some specific sites, such as the Low Isles and some World War II sites. 	<ul style="list-style-type: none"> Low Isles Preservation Society - conservation group http://www.lips.org.au/ 	Adequate	Stable
PR3 There is a sound governance system in	2	<ul style="list-style-type: none"> Governance is through legislation and international (IUCN) intervention 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Act 1975 (s2A – protection of cultural values) 	Adequate	Improving

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
place to address historic heritage			<ul style="list-style-type: none"> Great Barrier Reef Marine Park Regulations (part 2B TUMRA's and r 88Q and 88R) 		
PR4 There is effective performance monitoring, including regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for historic heritage	3	<ul style="list-style-type: none"> The performance planning protocols within the GBRMPA internally evaluate how effective the GBRMPA's staff have been at achieving their work programs against the Strategic Plan and Annual Operating Plans. Heritage Strategy monitoring: An assessment of the 2005 Heritage Strategy in 2011 showed: <ul style="list-style-type: none"> ten out of the total of 58 strategies were completed or good progress occurring (ie 17 per cent of strategies in overall heritage Strategy) twenty-eight out of the total of 58 strategies were underway with satisfactory progress or ongoing (ie 48 per cent) twenty out of the total of 58 strategies either not commenced or yet to be considered (ie 35 per cent) however the Heritage Strategy requires review and better focus on protecting the values of the historic heritage 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 Lady Elliot Island Heritage Management Plan: http://www.gbrmpa.gov.au/about-the-reef/heritage/lady-elliott-island-heritage-values 2005 Heritage Strategy for GBR-Implementation Status April 2012 	Adequate	Improving
PR5 Appropriate training is available to the managing agencies to address historic heritage	2	<ul style="list-style-type: none"> Limited training opportunities. Articulated in the heritage strategy but not implemented 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 	Limited	Stable
PR6 Management of historic heritage is consistently implemented across the relevant jurisdictions	3	<ul style="list-style-type: none"> Consideration of potential impacts to historic heritage is consistently considered for joint Marine Park permits under the Intergovernmental Agreement (IGA) 	<ul style="list-style-type: none"> Intergovernmental Agreement GBRMPA management effectiveness workshop 	Adequate	Stable
PR7 There are effective processes applied to resolve differing views/ conflicts regarding historic heritage	3	<ul style="list-style-type: none"> A conflict resolution process is articulated in the Heritage Strategy, however there are concerns this process is not implemented. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 	Adequate	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with historic heritage are appropriately considered.	3	<ul style="list-style-type: none"> Consideration of potential impacts to historic heritage is consistently considered for joint Marine Park permits under the Intergovernmental Agreement (IGA) – 	<ul style="list-style-type: none"> Intergovernmental Agreement GBRMPA management effectiveness workshop 	Adequate	Improving

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> Joint permit arrangements provide some consideration for historic heritage and aim to minimise direct and indirect impacts. Very few if any non-direct or cumulative impacts are considered 			
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding historic heritage	2	<ul style="list-style-type: none"> Annual Audits of lighthouses provides data on biophysical condition of lighthouses There is little documented evidence about the impacts of biophysical information on historic heritage 	<ul style="list-style-type: none"> See page 54 of 2010-2011 Annual Report: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0016/11950/Annual-Report201011.pdf 	Limited	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding historic heritage	NA				
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding historic heritage	NA				
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding historic heritage	NA				
PR13 Relevant standards are identified and being met regarding historic heritage	2	<ul style="list-style-type: none"> The Authority is developing a Heritage Register as per the Australian Government requirements, however it will not be completed until mid-2013. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving
PR14 Targets have been established to benchmark management	2	<ul style="list-style-type: none"> Clear targets for the protection and maintenance of historic heritage places that are on Commonwealth Islands are clearly articulated in leases, Deeds of 	<ul style="list-style-type: none"> Great Barrier Reef Heritage Strategy GBRMPA management effectiveness workshop 	Adequate	Improving

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
performance for historic heritage		<ul style="list-style-type: none"> Agreements and permits with the leaseholders. Targets are not included in the heritage strategy 			
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for historic heritage	3	<ul style="list-style-type: none"> An assessment of the 2005 Heritage Strategy in 2011 showed: <ul style="list-style-type: none"> 10 out of the total of 58 strategies were completed or good progress occurring (ie 17 per cent of strategies in overall heritage Strategy) 28 out of the total of 58 strategies were underway with satisfactory progress or ongoing (ie 48 per cent) 20 out of the total of 58 strategies either not commenced or yet to be considered (ie 35 per cent) However the strategy requires review and updating to deliver on historic heritage protection 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 2005 Heritage Strategy for GBR-Implementation Status April 2012 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to historic heritage have progressed in accordance with timeframes specified in those documents	3	<ul style="list-style-type: none"> Sixty-five per cent of strategies have been completed or are progressing satisfactorily), however the strategy does not have timeframes for actions. However, the Heritage strategy has not been reviewed in accordance with the statutory timeframe. Heritage Management Plans have not been completed for all Commonwealth listed heritage places in the timeframes recommended. 	<ul style="list-style-type: none"> 2005 Heritage Strategy for GBR-Implementation Status April 2012 	Adequate	Improving
OP3 The results (in OP1 above) have achieved their stated management objectives for historic heritage	3	<ul style="list-style-type: none"> The implementation of management objectives for the heritage strategy are considered to be progressing satisfactorily, however the strategy requires review and updating. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 2005 Heritage Strategy for GBR-Implementation Status April 2012 	Adequate	Improving
OP4 To date, products or services have been produced in accordance with the stated management objectives for historic heritage	3	<ul style="list-style-type: none"> Specific policy documents on shipwrecks, Commonwealth Islands and shipping and navigation heritage have been completed. Products such as the "social atlas" and the heritage database have not been completed. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving
OP5 Effective knowledge management systems	3	<ul style="list-style-type: none"> The Great Barrier Reef Marine Park Authority Heritage Database that is being developed contains 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No clear trend

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
regarding historic heritage are in place within agencies		<p>information about natural, historic and Indigenous places located within the Great Barrier Reef Marine Park.</p> <ul style="list-style-type: none"> Heritage programs are becoming increasingly spatial in focus and output, generating a variety of spatial datasets about the Region's values, its use and impacts, and will be managed by the GBRMPA Spatial Data Centre. 			
OP6 Effective systems are in place to share knowledge on historic heritage with the community		<ul style="list-style-type: none"> Currently no. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No clear trend
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing historic heritage and moving towards the attainment of the desired outcomes.	2	<ul style="list-style-type: none"> The assessment of the Heritage Strategy indicates that the GBRMPA is moving towards effectively addressing and moving towards the attainment of outcomes. However the heritage strategy requires review and clearer focus on addressing historic heritage outcomes. The Strategic Assessment recommends the review and update of the Heritage Strategy. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 2005 Heritage Strategy for GBR-Implementation Status April 2012 Great Barrier Reef Region Strategic Assessment Report, 	Adequate	Improving
OC2 The outputs relating to historic heritage are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	2	<ul style="list-style-type: none"> Assessment of the Heritage Strategy identifies that 65 per cent on the strategies are on track. However the Heritage Strategy requires review and clearer focus on addressing historic heritage outcomes. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 2005 Heritage Strategy for GBR-Implementation Status April 2012 	Adequate	Improving
OC3 the outputs (refer OP1 and 3) for historic heritage are reducing the major risks and the threats to the Great Barrier Reef	2	<ul style="list-style-type: none"> The outcomes from the Heritage Strategy, permitssite plans, Plans of Management and heritage managemnet plans are reducing the risks and threats to a minor level. 	<ul style="list-style-type: none"> Great Barrier Reef Marine Park Heritage Strategy 2005 2005 Heritage Strategy for GBR-Implementation Status April 2012 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to historic heritage is demonstrably	3	<ul style="list-style-type: none"> Use/access of heritage sites such as shipwrecks, Low Isles, Endeavour Reef and the tourism ventures at Low Isles and Lady Elliot Island are considered environmentally sustainable. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No clear trend

Component of management of heritage (historic)	Rating	Justification	Evidence/sources	Confidence	Trend
environmentally sustainable					
OC5 Use of the Great Barrier Reef relating to historic heritage is demonstrably economically sustainable	NA				
OC6 Use of the Great Barrier Reef relating to historic heritage is demonstrably socially sustainable enhancing understanding and/or enjoyment	3	<ul style="list-style-type: none"> The Reef environment contributes much to the community's wellbeing, both locally and more indirectly throughout Australia and the world. The Reef's biodiversity, geomorphological features, heritage values and natural beauty supports people economically, provides them with food and enriches their lives. Benefits vary according to people's cultural connections, experiences, personal perspectives, and dependence upon and familiarity with the Region. 	<ul style="list-style-type: none"> Great Barrier Reef Region Strategic Assessment Report, 	Adequate	Improving
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address historic heritage	2	<ul style="list-style-type: none"> LMACs, Reef Advisory Committees. The engagement with these groups has good progress in a number of areas, but has had little engagement with historic heritage issues. Volunteers are involved in some specific sites, such as the Low Isles and some World War II sites. 	<ul style="list-style-type: none"> The GBRMPA heritage website Low Isles Preservation Society - conservation group http://www.lips.org.au/ http://www.gbrmpa.gov.au/about-us/local-marine-advisory-committees 	Adequate	Improving

Table 36 Calculation of grades for community benefits of the environment

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
CONTEXT					
CO1 The values of the Great Barrier Reef relevant to community benefits of the environment are understood by managers	3	<ul style="list-style-type: none"> The Authority has a good understanding of the values of the Great Barrier Reef relevant to community benefits. The strategic assessment explicitly considers the community benefits derived from the environment. This recognises that the Marine Park is a multiple-use marine protected area as well as the interconnectedness of people and their environment, as reflected in the definition of the environment in both the Great Barrier Reef Marine Park Act and the EPBC Act: <i>'Environment includes ecosystems and their constituent parts, including people and communities; natural and physical resources; the qualities and characteristics of locations, places and areas; heritage values of places; and the social, economic and cultural aspects of the above'</i>. The multiple use Marine Park through Zoning Plan and Plans of Management segregates conflicting uses to ensure access to resources, support enjoyment and encourage personal attachment to the Reef. Access Economic Study has determined the value of the Reef (income, employment etc.) to various reef users. 	<ul style="list-style-type: none"> GBRMPA, 2011, Great Barrier Reef Strategic Assessment Stakeholder Workshops: General Report and individual workshop reports Rolfe, J., Daniel, G. and G. Tucker (2011) Valuing local recreation in the Great Barrier Reef, Australia, Research Report No. 102, Environmental Economics Research Hub Research Reports Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 	Adequate	Improving
CO2 The current condition and trend of values relevant to community benefits of the environment are known by managers	3	<ul style="list-style-type: none"> The condition and trend of values relating to community benefits of the Great Barrier Reef is summarised in the Great Barrier Reef Strategic Assessment. However cumulative impacts on community benefits, and trade-off costs and benefits are not well understood. 	<ul style="list-style-type: none"> The Great Barrier Reef Strategic Assessment 	Limited	Improving
CO3 Impacts (direct, indirect and cumulative) associated with community benefits of the environment are understood by managers.	3	<ul style="list-style-type: none"> Impacts associated with community benefits are summarised in the Great Barrier Reef Strategic Assessment 	<ul style="list-style-type: none"> Marshall, N.A. and Tobin, R.C. "More Than Meets the Eye": The Social and Economic Impacts of Recent Extreme Weather Events on Reef-Dependent Industries of the Great Barrier Reef Region, Report for GBRMPA, CSIRO, Ecosystem Sciences, Fish and Fisheries Centre, James Cook University Assessment of the ecological vulnerability of the East 	Limited	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
			<p>Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop (http://hdl.handle.net/11017/522Rachel Pear's work on Adaptation planning in the Otter Trawl Industry</p> <ul style="list-style-type: none"> • Moon, K. and Gooch, M., 2011, Rapid social and economic impact assessment of Great Barrier Reef commercial fishing and tourism sectors affected by floods and cyclones during 2010/11, GBRMA • Deloitte Access Economics Report (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ 		
CO4 The broader (national and international) level influences relevant to community benefits of the environment are understood by managers.	3	<ul style="list-style-type: none"> • The national and international influences relevant to community benefits are well understood 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report • State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Improving
CO5 The stakeholders relevant to community benefits of the environment are well known by managers.	3	<ul style="list-style-type: none"> • The stakeholders are well known, and have been consulted in the development of the strategic assessment concerning community benefits. • For example, the Great Barrier Reef Region's values considered important by the community were explored in a series of workshops and surveys with stakeholders and Traditional Owners in the latter half of 2012, as well as through discussions with the GBRMPA's advisory committees and through one-on-one talks. The range of information, views and experiences greatly assisted in determining the full set of values for the Region. In addition, the process strengthened a common understanding of the broad range of values that the Region supports and their current condition and trend. 	<ul style="list-style-type: none"> • Great Barrier Reef Region Strategic Assessment Report • State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2013 	Adequate	Improving
PLANNING					
PL1 There is a planning system in place that effectively addresses community benefits of the environment	3	<ul style="list-style-type: none"> • The 25-Year Strategic Plan for the Great Barrier Reef World Heritage Area outlines strategies for managing and preserving the Great Barrier Reef World Heritage Area, and provides the basis to ensure wise use and protection of 	<ul style="list-style-type: none"> • GBRMP Act: http://www.comlaw.gov.au/Details/C2011C00149 • Zoning Plan: http://www.gbrmpa.gov.au/zoning- 	Adequate	Stable

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>the Great Barrier Reef World Heritage Area for the future.</p> <ul style="list-style-type: none"> • Zone plans, Recreation Management Strategy and Plans of Management, as well as protected area management plans (undertaken by QPWS) segregate conflicting uses to ensure access to resources, support enjoyment and encourage personal attachment to the Reef. • The vision for the Recreation Management Strategy includes “visitors can appreciate its values and enjoy recreational experiences, now and into the future” • Less tangible benefits are less well considered in planning • Social, cultural and heritage values of the Great Barrier Reef are considered when assessing permits • Community benefits are recognised in legislation and strategy documents. 	<p>permits-and-plans/zoning</p> <ul style="list-style-type: none"> • Managing Multiple Uses: http://www.gbrmpa.gov.au/about-the-reef/Managing-multiple-uses • Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park • Cairns Area Plan of Management 1998 • Hinchinbrook Area Plan of Management 2004 • Whitsundays Plan of Management 1998 		
<p>PL2 The planning system for community benefits of the environment addresses the major factors influencing the Great Barrier Reef Region’s values.</p>	3	<ul style="list-style-type: none"> • The planning system for community benefits does not address all major factors impacting on the Reef’s values because many of these (economic growth and slowdown, population changes, climate change) are global drivers. • The Zoning Plan addresses extractive use • Permits help to manage tourism pressures and some scientific research pressures, but do not address cumulative take and localised depletion or harvest fisheries • Site Planning, Plans of Management and site infrastructure attempt to address pressures and major conflicts of use (for example, by creating ‘no anchoring’ areas in places with high coral cover that have community benefits to tourism or recreation use). 	<ul style="list-style-type: none"> • Zoning Plan: http://www.gbrmpa.gov.au/zoning-permits-and-plans/zoning • Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park • Cairns Area Plan of Management 1998 • Hinchinbrook Area Plan of Management 2004 • Whitsundays Plan of Management 1998 	Adequate	Improving
<p>PL3 Actions for implementation regarding community benefits of the environment are clearly identified within the plan</p>	2	<ul style="list-style-type: none"> • Only some of the planning systems outlined above have clear implementation actions. 	<ul style="list-style-type: none"> • Zoning Plan: http://www.gbrmpa.gov.au/zoning-permits-and-plans/zoning • Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park • Cairns Area Plan of Management 1998 • Hinchinbrook Area Plan of Management 2004 • Whitsundays Plan of Management 1998 	Limited	Stable
<p>PL4 Clear, measurable and appropriate objectives for</p>	3	<ul style="list-style-type: none"> • Reef Guardians Programs, Reef HQ programs, Communications and Public Information Unit, Climate Change Stakeholder Programs all have clear 	<ul style="list-style-type: none"> • Zoning Plan: http://www.gbrmpa.gov.au/zoning-permits-and-plans/zoning 	Adequate	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
management of community benefits of the environment have been documented		<ul style="list-style-type: none"> objectives for management associated with community benefit • Annual Operating Plans have performance indicators • The GBRMPA has a communications plan (internal document) • Climate Change Action Plan and Delivery Program 2007-2012 includes a Monitoring, Evaluation, Reporting and Improvement Framework • For access to Great Barrier Reef resources, permit requirements are clearly articulated under the Zoning Plan, Plans of Management, and the GBRMPA's Strategic Plan • Recreation Management Strategy does not include specific objectives 	<ul style="list-style-type: none"> permits-and-plans/zoning • Managing Multiple Uses: http://www.gbrmpa.gov.au/about-the-reef/Managing-multiple-uses • Recreational Management Strategy (RMS) http://www.gbrmpa.gov.au/about-the-reef/how-the-reefs-managed/recreation-in-the-great-barrier-reef-marine-park 		
PL5 There are plans and systems in place to ensure appropriate and adequate monitoring information is gathered in relation to community benefits of the environment	2	<ul style="list-style-type: none"> • Monitoring is recognised as a gap, and monitoring frameworks are being developed 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Limited	Improving
PL6 The main stakeholders &/or the local community are effectively engaged in planning to address community benefits of the environment	3	<ul style="list-style-type: none"> • Managers consult with the public on a range of matters that concern the Marine Park, including permit applications and policy. People interested in the management of the Great Barrier Reef and World Heritage Area, including proposed developments, have valuable knowledge that contributes to the assessment process. A list of current plans, applications and assessments for public consultation are available online, along with details on the process (see Public Comments website on GBRMPA web): <ul style="list-style-type: none"> ○ Established committees include Local Marine Advisory Committees, Reef Advisory Committees and research partnerships ○ Cooperation with the Queensland Government in planning for community benefits includes each party reviewing and discussing strategic plans, park management plans and specific topic plans. ○ Regulatory Impact Statements are required for all changes to policy and regulation, taking into account any implications to affected members of the community (noting that this process is geared more to income indicators as opposed to connections and relationships). ○ Reef Guardians Program: The Reef Guardian program is a successful stewardship program that began with schools in 2003 to encourage the community to take action for a healthier Reef. The program has since expanded to include councils, fishers, farmers and graziers. • The High Standard Tourism Program, the Eye on the Reef Program and the Tourism Climate Change Action Strategy encourage tourism operators to take action for a healthier Reef. • Stakeholder Engagement is an important component of Zoning Plan Review 	<ul style="list-style-type: none"> • Public Comments website on GBRMPA web: http://www.gbrmpa.gov.au/about-us/consultation • Annual Report pg 77 Reef Guardians Program: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0020/28406/GBRMPA-Annual-Report-2011-12.pdf • Our Partners list on website: http://www.gbrmpa.gov.au/our-partners 	Adequate	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
PL7 Sufficient policy currently exists to effectively address community benefits of the environment	3	<ul style="list-style-type: none"> • The GBRMPAs policies which contain aspects to effectively address community benefits include: <ul style="list-style-type: none"> ○ Recreation Management Strategy (more broadly covers enjoyment and appreciation, access, personal connections, income) ○ Responsible Reef Practices ○ Policy on Managing Tourism Permissions to Operate in the Great Barrier Reef Marine Park (including Allocation, Latency & Tenure) ○ Cruise Shipping Policy for the Great Barrier Reef Marine Park ○ Policy on Moorings in the Great Barrier Reef Marine Park ○ Policy on Managing Bareboat Operations in the Great Barrier Reef Marine Park ○ Position Statement – Management of tourist flights in the vicinity of Magnetic Island ○ Position Statement on Indigenous Participation in Tourism and its Management • Position Statement on Management of Commercial Jet Ski Operations around Magnetic Island • Referral guidelines for the assessment of outstanding universal value of the Great Barrier Reef World Heritage Area are being developed 	<ul style="list-style-type: none"> • Responsible Reef Practices: http://www.gbrmpa.gov.au/visit-the-reef/responsible-reef-practices • GBRMPA Policies: http://www.gbrmpa.gov.au/about-us • Recreation Management Strategy: http://www.gbrmpa.gov.au/__data/assets/pdf_file/0005/16835/gbrmpa-RecreationManagementStrategy-2012.pdf 	Adequate	Improving
PL8 There is consistency across jurisdictions when planning for community benefits of the environment	3	<ul style="list-style-type: none"> • The GBRMP Act is not explicit about community benefits or well-being. It refers to enjoyment, appreciation and understanding of the Reef, but is not concerned with aspects of well-being that relate to employment or income of Reef-dependent industries. • The IGA for the Great Barrier Reef provides the 'head of power' for aspects of community benefits through the joint permitting system between the GBRMPA and QPWS. This joint system allows for consistent consideration and management of access to resources through permits, Zoning Plans and Plans of Management. • GBRMP Regulations 1983 provide for consistency across international, national and Queensland jurisdictions when assessing permits see specific regulations below. Whether this complementarily is reflected in other jurisdictions is another matter. <ul style="list-style-type: none"> ○ (g) any <u>international Convention</u> to which Australia is a signatory, or any agreement between the Commonwealth and a State or Territory, that is relevant to the application; ○ (h) any <u>relevant law of the Commonwealth, or a relevant law of Queensland</u> as in force from time to time, or a relevant plan made under such a law, relating to the management of the environment, or an area in the Marine Park 	<ul style="list-style-type: none"> • GBRMP Act and Regulations • Intergovernmental Agreement 	Adequate	Stable
PL9 Plans relevant to community benefits of the	3	<ul style="list-style-type: none"> • Plans regarding access to resources and extractive activities are clear and provide certainty for tourism, fishing and recreation. 	<ul style="list-style-type: none"> • Zoning Plan • Permits, POM's, Site Planning arrangements, Policy 	Adequate	Stable

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
environment provide certainty regarding where uses may occur, the type of activities allowed, conditions under which activities may proceed and circumstances where impacts are likely to be acceptable.		<ul style="list-style-type: none"> The GBRMPA and QPWS have a joint-permit working group (JPWG) to streamline plans and improve certainty and consistent management. This process works extremely well. Zoning Plan Permits, Plans of Management, Site Planning arrangements, Policy. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 		
INPUTS					
IN1 Financial resources are adequate and prioritised to meet management objectives to address community benefits of the environment	2	<ul style="list-style-type: none"> Short term funding was provided for the Great Barrier Reef Strategic Assessment to undertake work on community benefits. The GBRMPA allocates financial resources to address aspects of community benefits through the Strategic Plan and Annual Operating Plans. However, this area is not adequately resourced. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Stable
IN2 Human resources within the managing organisations are adequate to meet specific management objectives to address community benefits of the environment	2	<ul style="list-style-type: none"> The GBRMPA employs one dedicated Social Scientist 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Stable
IN3 The right skill sets and expertise are currently available to the managing organisations to address community benefits of the environment	2	<ul style="list-style-type: none"> The GBRMPA employs one dedicated Social Scientist 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Stable
IN4 The necessary biophysical information is currently available to address community benefits of the environment	3	<ul style="list-style-type: none"> The Great Barrier Reef Strategic Assessment, Outlook Report 2009, vulnerability assessments, Draft Status of habitats and species document, GBRMPA's 2012, <i>Informing the Outlook for Great Barrier Reef coastal ecosystems</i> have all compiled latest information and made it accessible to managers 	<ul style="list-style-type: none"> Vulnerability Assessments - More information at: http://www.gbrmpa.gov.au/about-the-reef/biodiversity/biodiversity-conservation-strategy-for-public-consultation/vulnerability-assessments Draft Status of habitats and species document Values and attributes table underpinning MNES Outlook Report 2009 Great Barrier Reef Marine Park Authority 2012, <i>Informing the outlook for Great Barrier Reef coastal ecosystems</i>, Great Barrier Reef Marine Park Authority, Townsville. 	Adequate	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
IN5 The necessary socio-economic information is currently available to address community benefits of the environment		<ul style="list-style-type: none"> Some information is available relating to economic benefits and important user groups A social and economic long-term monitoring program was initiated in collaboration with CSIRO (National Environmental Research Program Project 10.1). This is aimed at creating greater understanding of how people use and benefit from the Great Barrier Reef World Heritage Area, including coastal and catchment communities, marine tourism, commercial and recreational fishing, Traditional Owners and the shipping sector. Long-term monitoring helps reef managers, industries and communities to assess how each industry and community will be affected by climate change, environmental degradation, regulatory change, cultural change and short-term impacts. It also has the potential to evaluate the effectiveness of management interventions within the Region. Closely aligned with this research is another National Environmental Research Program-funded project (National Environmental Research Program Project 10.2) which explores visitor satisfaction levels and their willingness to pay for particular experiences. 	<ul style="list-style-type: none"> Marshall, N.A. and Tobin, R.C. "More Than Meets the Eye": The Social and Economic Impacts of Recent Extreme Weather Events on Reef-Dependent Industries of the Great Barrier Reef Region, Report for GBRMPA, CSIRO, Ecosystem Sciences, Fish and Fisheries Centre, James Cook University Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop (http://hdl.handle.net/11017/522) Rachel Pear's work on Adaptation planning in the Otter Trawl Industry Moon, K. and Gooch, M., 2011, Rapid social and economic impact assessment of Great Barrier Reef commercial fishing and tourism sectors affected by floods and cyclones during 2010/11, GBRMA Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Sutton, S.G. 2006, An assessment of the social characteristics of Queensland's recreational fishers. Technical Report 65, CRC Reef Research Centre, Townsville, Australia. 	Adequate	Improving
IN6 The necessary Indigenous heritage information is currently available to address community benefits of the environment	2	<ul style="list-style-type: none"> The Indigenous Partnerships Group at the Authority has good connections and relationships with Traditional Owners through Caring for our Country projects, Story Place, Indigenous Reef Advisory committee and liaison and consultation. However, the ability to apply detailed understanding of Indigenous knowledge and cultural heritage to management is lacking across most of the Region. This requires very close work with the relevant communities, as traditional knowledge can only be used by people with the appropriate rights. 	<ul style="list-style-type: none"> The Indigenous Partnerships Group at the Authority has good connections and relationships with Traditional Owners through Caring for our Country projects, Story Place, Indigenous Reef Advisory committee and liaison and consultation. However, the ability to apply detailed understanding of indigenous knowledge and cultural heritage to management is lacking across most of the Region. This requires very close work with the relevant communities, as traditional knowledge can only be used by people with the appropriate rights. 	Limited	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
IN7 The necessary historic heritage information is currently available to address community benefits of the environment	2	<ul style="list-style-type: none"> Although information about historic heritage has improved through the strategic assessment, there is very limited information currently available 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Adequate	Improving
IN8 There are additional sources of non-government input (for example volunteers) contributing to address community benefits of the environment	3	<ul style="list-style-type: none"> There are a number of well-established volunteer programs through Reef HQ, Integrated Eye on the Reef, Reef Guardians and Local Marine Advisory Committees; Community beach clean groups, Clean up Australia, Landcare, Coastcare, Seagrass-Watch, Eye on the Reef which all contribute to community benefits associated with the Great Barrier Reef. 	<ul style="list-style-type: none"> Reef HQ, Integrated Eye on the Reef, Reef Guardians and Local Marine Advisory Committees; Clean up Australia, Landcare, Coastcare, Seagrass-Watch, 	Adequate	Stable
PROCESSES					
PR1 The main stakeholders and/or industry(ies) are effectively engaged in the ongoing management of community benefits of the environment	3	<ul style="list-style-type: none"> The GBRMPA consults with the public on a range of matters that concern the Marine Park, including permit applications and policy. People interested in the management of the Great Barrier Reef and World Heritage Area, including proposed developments, provide valuable knowledge that contributes to the assessment process. A list of current plans, applications and assessments for public consultation are available online, along with details on the process (see Public Comments website on GBRMPA web) Initiatives to work with stakeholders include: <ul style="list-style-type: none"> established committees :Local Marine Advisory Committees, Reef Advisory Committees Regional Offices (Rockhampton, Mackay, Cairns) and outreach officers joint management arrangements with Queensland The Reef Guardian program, the High Standard Tourism Program, the Eye on the Reef Program and the Tourism Climate Change Action Strategy encourage tourism operators to take action for a healthier Reef. The Association of Marine Park Tourism Operators (AMPTO) sets out a mechanism for the coordination and facilitation of responses to an environmental incident relevant to the marine tourism industry 	<ul style="list-style-type: none"> Public Comments website on GBRMPA web: http://www.gbrmpa.gov.au/about-us/consultation See Annual Report p. 77 Reef Guardians Program: http://www.gbrmpa.gov.au/_data/assets/pdf_file/0020/28406/GBRMPA-Annual-Report-2011-12.pdf http://www.gbrmpa.gov.au/our-partners 	Adequate	Stable
PR2 The local community is effectively engaged in the ongoing management of community benefits of the environment	3	<ul style="list-style-type: none"> Launched the Reef Guardian Grazing pilot program in 2011 and finalised pilot programs in Reef Guardian Farmers in the cane, banana and grazing sectors Desirable Assessment Standards and evaluation processes for Reef Guardian Farmers and Reef Guardian Fishers Reef Guardian Fishers – finalised pilot programs in the reef line and marine aquarium fish and coral collection sectors; also trialling electronic data 	<ul style="list-style-type: none"> Reef Guardian Farmers and Reef Guardian Fishers 	Adequate	Stable

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>collection devices with Reef Guardian Fishers in the inshore gillnet fishery</p> <ul style="list-style-type: none"> • Reef Guardian Councils – Action plans received from all 13 Councils in the program which included over 920 projects in the areas of land management, waste management, water management, climate change, community education and capacity building. • Reef Guardian Schools – More than 285 schools and over 113,000 students are helping build the resilience of the Great Barrier Reef through the Reef Guardians Schools program. • Reef Guardian School students are currently undertaking over 1600 projects in their schools and local communities in the areas of waste management, water management, biodiversity/land management and climate change mitigation and adaptation. • Thirty-five Future Leaders Eco Challenges (FLECs) involving over 1500 students were held in the Great Barrier Reef Catchment, enabling students and teachers to participate in local environmental projects within their school or community. Students had an opportunity to take part in activities that are aimed at improving catchments, water quality, sustainability and Reef health. • Improvements in public reporting capacity for shipping and pollution incidents, and marine wildlife strandings, via mobile phone applications. 			
PR3 There is a sound governance system in place to address community benefits of the environment	3	<ul style="list-style-type: none"> • Governance to address community benefits includes the multiple-use nature of the legislation and planning system under which the Great Barrier Reef is managed. However, there is no overarching community benefits study for the region though a number of projects such as Climate Change Action Plan and Delivery Program 2007-2012 Monitoring Evaluation Reporting and Improvement Framework, SELTMP, Access Economics – Economic Contribution of the Great Barrier Reef contribute • GBRMPA is currently preparing guidelines for the inclusion of Social Impact Assessment to be included in all future EIAs. This includes associated on-going monitoring of impacts associated with new developments • There is a recognised need to develop guidelines for monitoring condition and trend of aesthetic values of the Great Barrier Reef Worldl Heritage Area. 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Adequate	Stable
PR4 There is effective performance monitoring, including. regular assessment of appropriateness and effectiveness of tools, to gauge progress towards the objective(s) for community	3	<ul style="list-style-type: none"> • Performance monitoring includes: <ul style="list-style-type: none"> ○ Reef Guardian Program Evaluation: The purpose of this project was to evaluate the effectiveness of a public education campaign designed to provide information to residents living in the Great Barrier Reef Catchment Area ○ Annual Operating Plans require evaluation of performance throughout the year. 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Limited	Stable

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
benefits of the environment		<ul style="list-style-type: none"> The GBRMPA has surveyed stakeholders involved in the Strategic Assessment workshops to determine lessons learned and where improvements can be made. Repeat studies into the economic values of the Reef can be interpreted as performance monitoring for this aspect. 			
PR5 Appropriate training is available to the managing agencies to address community benefits of the environment	2	<ul style="list-style-type: none"> Training for managers is <i>ad-hoc</i> and not according to clear objectives. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No Clear trend
PR6 Management of community benefits of the environment is consistently implemented across the relevant jurisdictions	2	<ul style="list-style-type: none"> There is no clear intergovernmental agreement or arrangements when planning for community benefits. There are some inconsistencies in management of the coastal zone and developments on islands under the jurisdiction of Queensland where the head of power to consider impacts on community benefits and social and heritage matters is not clear. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Stable
PR7 There are effective processes applied to resolve differing views/ conflicts regarding community benefits of the environment	3	<ul style="list-style-type: none"> Planning systems are designed to address conflicting interests at an early stage, however there are few processes to resolve differing views where one activity, for example, coastal development conflicts with a community benefit for example, public enjoyment 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	Stable
PR8 Impacts (direct, indirect and cumulative) of activities associated with community benefits of the environment are appropriately considered.	3	<ul style="list-style-type: none"> Limits of acceptable change are not defined, and cumulative impacts on biodiversity and heritage values, which impact on community benefits, are not well understood The changing requirements of the community for access to the Reef as a consequence of the resources boom and an increase in money for bigger boats (for example) is recognised, but the GBRMPA are currently unable to respond fast enough to take this into consideration (planning, policy, compliance). The current infrastructure (public moorings and reef protection markers) is inadequate for the growth. Conflicting uses between different sectors of the community are recognised, particularly in high use areas. A detailed risk assessment of recreational activities is contained in the Recreation Management Plan R88Q and 88R of the GBRMP Regulations 1983 require assessment officers to consider the following when assessing a permit application: <ul style="list-style-type: none"> a) the potential impacts of the conduct proposed to be permitted by the permission (the proposed conduct) on the environment and on the social, cultural and heritage values of the Marine Park or a part of the Marine Park; b) the effect that the grant of the permission will have on <u>public appreciation, understanding and enjoyment</u> of the Marine Park; 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop 	Limited	No clear trend

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
		<ul style="list-style-type: none"> • Consultation and engagement opportunities required under the GRRMP Act, and the EPBC Act 			
PR9 The best available biophysical research and/or monitoring information is applied appropriately to make relevant management decisions regarding community benefits of the environment	3	<ul style="list-style-type: none"> • Biophysical knowledge and monitoring are used when making decisions about community benefit including through the EIS and permit assessment process. 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Limited	Improving
PR10 The best available socio-economic research and/or monitoring information is applied appropriately to make relevant management decisions regarding community benefits of the environment	3	<ul style="list-style-type: none"> • Where the managers have the information, it is used to make relevant management decisions. Consideration of stakeholder input as part of the re-zoning was a good example of this. Any information regarding community benefits arising from public consultation is considered in all permit assessments, planning and policy development. • Social assessment and monitoring is in an early stage. Guidelines for the inclusion of Social Impact Assessment to be included in all future EIAs, including associated on-going monitoring of impacts associated with new developments, is being developed. • A framework is being developed in which social, economic and ecological considerations can be incorporated into the formulation of management plans. The framework is applied to the Queensland East Coast Trawl fishery, which is currently undergoing a revision of its management plan. 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop 	Limited	Improving
PR11 The best available Indigenous heritage information is applied appropriately to make relevant management decisions regarding community benefits of the environment	2	<ul style="list-style-type: none"> • Sea Country Partnerships Grants Program includes successful projects, which include things like engaging Traditional Owners in Seagrass-Watch, community awareness of impacts, turtle tagging, etc. • The GBRMPA is working with Indigenous groups, other government agencies and tourism operators to enhance Indigenous participation in tourism and its management in the Great Barrier Reef • The Reef Rescue Program has strengthened communications across the community to build a better understanding of Traditional Owner issues on the management of the Great Barrier Reef Marine Park 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop • Reef Rescue Program 	Adequate	Improving
PR12 The best available historic heritage information is applied appropriately to make relevant management decisions regarding community benefits of the environment	2	<ul style="list-style-type: none"> • Historic heritage information had been limited. Following the Strategic Assessment it is anticipated that historic heritage information will be better accessed 	<ul style="list-style-type: none"> • Reef Rescue Program 	Limited	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
PR13 Relevant standards are identified and being met regarding community benefits of the environment	2	<ul style="list-style-type: none"> Responsible Reef Practices: Voluntary standards for reef use and interactions Reef Guardians High Standard Tourism Program The GBRMPA is beginning to identify which elements of community benefits can be monitored over time through the Social and economic long-term monitoring program which is in its design phase. If this program is funded beyond the design phase, standards will be developed against which to benchmark key community benefits. 	<ul style="list-style-type: none"> Reef Rescue Program 	Limited	No clear trend
PR14 Targets have been established to benchmark management performance for community benefits of the environment	2	<ul style="list-style-type: none"> Targets are in place for Reef Guardian Programs, but are not comprehensive across all the issues. The Portfolio Budget Statement has a target for the High Standard Tourism Program based on number of reef visitors carried by a high standard operation. The Tourism Climate Change Action Strategy set targets, but this is related to only one user group. 	<ul style="list-style-type: none"> Reef Rescue Program 	Adequate	No clear trend
OUTPUTS					
OP1 To date, the actual management program (or activities) have progressed in accordance with the planned work program for community benefits of the environment	3	<ul style="list-style-type: none"> Reef HQ Aquarium : The aquarium surpassed a 20-year visitation record in 2011–12, with 145,129 domestic and international visitors walking through its doors to come face to face with the wonders of the Reef. The figure exceeded the year's target of 116,000 by 25 per cent. Reef HQ Solar Program: used also to educate public about the benefits of solar, etc. Reef Guardians Program: The Reef Guardian program is a successful stewardship program that began with schools in 2003 to encourage the community to take action for a healthier Reef. The program has since expanded to include councils, fishers, farmers and graziers. High Standard Tourism Program: More than 60 per cent of visitors to the Reef were carried by high standard operators in 2012. Although the GBRMPA does a lot of work that has direct and obvious community benefits, there is no one overarching program of work to tie all of the individual efforts together. This is an emerging area for the GBRMPA, 	<ul style="list-style-type: none"> Reef HQ reports Reef Guardians Program Reports 	Adequate	Improving
OP2 Implementation of management documents and/or programs relevant to community benefits of the environment have progressed in accordance with timeframes specified in those	3	<ul style="list-style-type: none"> For established programs above, yes 	<ul style="list-style-type: none"> See annual report 	Adequate	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
documents					
OP3 The results (in OP1 above) have achieved their stated management objectives for community benefits of the environment	3	<ul style="list-style-type: none"> For established programs above, yes 	<ul style="list-style-type: none"> See annual report 	Adequate	Improving
OP4 To date, products or services have been produced in accordance with the stated management objectives for community benefits of the environment	3	<ul style="list-style-type: none"> For established programs above, yes 	<ul style="list-style-type: none"> See annual report 	Adequate	Improving
OP5 Effective knowledge management systems regarding community benefits of the environment are in place within agencies	2	<ul style="list-style-type: none"> Management of scientific information procedures are in place and are delivered at whole-of-GBRMPA using RefWorks as its database and citation management tool. Tools to disseminate information about values and impacts on them are available, and undergoing development to improve service delivery – for example the integrated Eye on the Reef program to provide a centralised database for reef health information, Reef Explorer is an interactive tool for displaying spatial information. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop and program reports 	Adequate	Improving
OP6 Effective systems are in place to share knowledge on community benefits of the environment with the community	3	<ul style="list-style-type: none"> Communication through plain-English products summarising outcomes of scientific research is undertaken to some extent, but not systematically. e-Library (GBRMPA external website) provides access to publications . eResearch Archive is a digital repository of scientific and research publications, and datasets authored by DAFF staff, including journal articles, book chapters, conference papers, theses and raw data collected in the course of research. The non-scientific community is engaged via the GBRMPA's LMACs, magazines – for example Reef Beat, media releases 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop and program reports 	Adequate	Improving
OUTCOMES					
OC1 The relevant managing agencies are to date effectively addressing community benefits of the environment and moving towards the attainment of the desired outcomes.	3	<ul style="list-style-type: none"> The GBRMPA's recognition of the range of community benefits is shown through the Recreational Management Strategy, the Reef Guardian programs, Reef HQ, High Standard Tourism program, and support for the tourism industry. The implementation of these programs will move towards attaining the desired outcomes. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop and program reports 	Adequate	Improving

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
OC2 The outputs relating to community benefits of the environment are on track to ensure the values of the Great Barrier Reef are protected (refer CO1)	3	<ul style="list-style-type: none"> Programs such as the Reef HQ Aquarium, the Reef Guardians and High Standard Tourism program engender positive community attitudes to protect the values of the Reef. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop and program reports 	Adequate	Improving
OC3 the outputs (refer OP1 and 3) for community benefits of the environment are reducing the major risks and the threats to the Great Barrier Reef	3	<ul style="list-style-type: none"> Positive community attitudes gained through the community engagement programs can reduce risks of negative decisions being made. This assists in reducing the major risks and threats to the Reef. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop and program reports 	Adequate	Improving
OC4 Use of the Great Barrier Reef relating to community benefits of the environment is demonstrably environmentally sustainable	3	<ul style="list-style-type: none"> Enjoyment, understanding and appreciation, relationships health are environmentally sustainable Maintenance of environmentally sustainable recreation/tourism/shipping use is critical to maintain community benefits. 	<ul style="list-style-type: none"> GBRMPA management effectiveness workshop and program reports 	Adequate	Improving
OC5 Use of the Great Barrier Reef relating to community benefits of the environment is demonstrably economically sustainable	4	<ul style="list-style-type: none"> Economic sustainability is shown through reports such as Deloitte Access Economics and the East Coast Otter Trawl Fishery work. 	<ul style="list-style-type: none"> Deloitte Economics (2013) <i>Economic Contribution of the Great Barrier Reef</i>, Great Barrier Reef Marine Park Authority¹⁹ Assessment of the ecological vulnerability of the East Coast Otter Trawl Fishery to climate change: a brief synthesis of information and results of an expert workshop (http://hdl.handle.net/11017/522Rachel) 	Adequate	Stable
OC6 Use of the Great Barrier Reef relating to community benefits of the environment is demonstrably socially sustainable enhancing understanding and/or enjoyment	4	<ul style="list-style-type: none"> Surveys show 80 per cent of Australians and 70 per cent of Queensland visitors satisfied with their Great Barrier Reef experience. Uptake of Reef Guardian program within the community is indicative of community interest in and concern for the Great Barrier Reef. A significant move forward since Outlook Report 2009 has been a stronger focus on embedding the GBRMPA's key communication messages as part of exhibition development in the Great Barrier Reef Aquarium. This provides a community engagement/education opportunity that helps to distil often quite complex and scientific based information into thematic formats that are more easily understood. The following show contributions to personal connection, enjoyment and understanding: <ul style="list-style-type: none"> Spotlight on the Great Barrier Reef: Thousands of people have seen the Great Barrier Reef from a boat, from the air or by diving and snorkelling, but a recent television documentary showed this natural wonder in a 	<ul style="list-style-type: none"> Visitor satisfaction data: 93.9 per cent of respondents to the 2012 Reef HQ Visitor Satisfaction Survey said that that believed they had an improved understanding of the issues relating to the Great Barrier Reef as a result of visiting Reef HQ Aquarium. Also, 88.7 per cent said they had a better understanding of how they can protect/conserv the Great Barrier Reef as a result of visiting Reef HQ Aquarium. 	Adequate	Stable

Component of management of community benefits of the environment	Rating	Justification	Evidence/sources	Confidence	Trend
		<p>way that no-one has seen before.</p> <ul style="list-style-type: none"> ○ Reef HQ ○ Reef Videoconferencing Outreach: Reef Video conferencing is breaking down geographical barriers to the latest in reef education. ○ Volunteer Program ○ Interpretive services ○ ReefED Website ○ Visiting the Reef website: information and tips on access and enhancing the reef experience 			
OC7 The relevant managing agencies have developed effective partnerships with local communities and/or stakeholders to address community benefits of the environment	3	<ul style="list-style-type: none"> • The GBRMPA's has very strong partnerships, but few are focused specifically on community benefits, especially less tangible benefits such as health benefits, aesthetic appreciation and personal connection to the Reef. • In general, stakeholder engagement is one of the strongest aspects of the Reef's management. A suite of communication tools are used to reach the community and encourage stakeholders to become stewards of the Reef. Communication and Education officers liaise with stakeholders via all means (face to face, phone, social media, public workshops, etc). 	<ul style="list-style-type: none"> • GBRMPA management effectiveness workshop and program reports 	Adequate	Stable

Appendix 4 Matrix of grades for each topic

	Issue	Biodiversity	Climate Change	Coastal Development	Commercial marine tourism	Community benefits	Defence	Fishing	Heritage	Land-based run-off	Ports	Recreation (not including fishing)	Research	Shipping	Traditional Use	Mean	Standard Deviation
CO1	Values	4	4	3	4	3	4	3	3	4	3	4	4	3	4	3.57	0.51
CO2	Condition and trend	3	2	3	4	3	4	3	3	4	3	3	4	4	4	3.36	0.63
CO3	Impacts	3	3	3	4	3	3	3	3	3	2	4	4	2	3	3.07	0.62
CO4	National and international influences	4	4	4	4	3	4	4	4	4	3	4	4	3	4	3.79	0.43
CO5	Stakeholders	4	4	4	4	3	4	4	4	4	3	4	4	4	4	3.86	0.36
CO	Overall grade																
PL1	Planning system	4	3	2	3	3	4	3	3	4	3	4	3	3	4	3.29	0.61
PL2	PS addresses factors influencing	3	2	2	4	3	3	3	3	4	3	4	4	4	4	3.29	0.73
PL3	Actions clear	3	2	2	4	2	4	3	3	4	3	3	3	4	3	3.07	0.73
PL4	Objectives measurable	3	2	2	3	3	4	3	2	4	3	3	4	2	4	3.00	0.78
PL5	Monitoring	3	3	2	3	2	3	3	3	4	2	2	2	2	3	2.64	0.63
PL6	Stakeholders engaged	4	3	3	4	3	4	3	3	4	3	4	4	4	4	3.57	0.51
PL7	Sufficient policy	3	2	2	3	3	3	3	2	4	2	3	3	4	3	2.86	0.66
PL8	Consistency jurisdictions	4	2	2	4	3	4	2	3	4	2	3	3	4	4	3.14	0.86
PL9	Certainty	2	2	2	3	3	4	4	3	2	3	2	4	4	4	3.00	0.88
PL	Overall grade																
IN1	Adequate finances	3	3	2	4	2	3	2	3	4	2	2	3	3	4	2.86	0.77
IN2	Adequate staff	3	3	2	3	2	3	2	2	3	3	2	3	3	3	2.64	0.50
IN3	Right skills	3	3	2	3	2	3	3	3	3	3	3	4	3	3	2.93	0.47
IN4	Biophysical information	3	3	3	4	3	3	3	3	3	2	3	4	4	3	3.14	0.53
IN5	Socioeconomic information	3	3	3	3	3	3	3	2	3	4	3	3	4	2	3.00	0.55
IN6	Indigenous information	2	2	2	3	2	4	2	3		3	2	3	3	3	2.62	0.65
IN7	Heritage information		1	3	1	2	4		3		3	2	2	3		2.40	0.97
IN8	Volunteer inputs	4	4	3	4	3	4	3	3	4	3	4	4	4		3.62	0.51
IN	Overall grade																
PR1	Stakeholders engaged	4	4	3	4	3	4	3	4	4	2	3	4	3	4	3.50	0.65
PR2	Local community engaged	3	4	3	4	3	4	3	3	4	3	3	3	3		3.31	0.48
PR3	Sound governance	3	2	2	4	3	4	3	3	4	2	4	4	4	3	3.21	0.80
PR4	Performance monitoring	4	4	2	3	3	3	3	3	4	2	2	3	3	3	3.00	0.68
PR5	Training	2	3	2	3	2	3	3	2	3	3	3	3	3	2	2.64	0.50
PR6	Consistent implementation	3	2	2	3	2	4	2	3	4	3	4	4	4	4	3.14	0.86
PR7	Conflict resolution	4	2	2	4	3	4	2	3	3	3	3	4	4	3	3.14	0.77

	Issue	Biodiversity	Climate Change	Coastal Development	Commercial marine tourism	Community benefits	Defence	Fishing	Heritage	Land-based run-off	Ports	Recreation (not including fishing)	Research	Shipping	Traditional Use	Mean	Standard Deviation
PR8	Impacts considered	3	2	2	3	3	4	3	3	3	3	3	4	2	4	3.00	0.68
PR9	Biophysical info applied	4	3	3	4	3	4	3	3	4	2	3	4	3	4	3.35	0.63
PR10	Socioeconomic info applied	3	2	3	3	3	4	3	3	3	3	3	2	4		3.00	0.58
PR11	Indigenous info applied	2	2	2	3	2	4	2	2		3	2	2	3	4	2.54	0.78
PR12	Heritage info applied		2	2	3	2	4		3		3	3	3	3		2.80	0.63
PR13	Standards	3	3	2	3	2	4	3	2	3	2	3	4	4	3	2.93	0.73
PR14	Targets for benchmarking	3	2	2	3	2	3	3	3	4	2	1		2	3	2.54	0.78
PR	Overall grade																
OP1	Work program progress	3	4	2	3	3	4	2	3	4	3	3	3	3	4	3.14	0.66
OP2	Timeframes met	3	3	2	3	3	4	3	3	4	3	3	4	3	3	3.14	0.53
OP3	Results achieved objectives	2	2	2	3	3	4	3	3	3	2	3	4	2	3	2.79	0.70
OP4	Products delivered	3	4	2	4	3	4	3	3	4	3	3	4	3	4	3.36	0.63
OP5	Agency knowledge management systems	3	4	2	4	2	4	3	3	3	2	3	4	3	2	3.00	0.78
OP6	Community knowledge management systems	4	3	2	4	3	4	3	2	3	2	3	4	2	3	3.00	0.78
OP	Overall grade																
OC1	Outcomes being achieved	3	2	2	4	3	4	3	3	3	3	3	4	4	4	3.21	0.70
OC2	Values protected	2	1	2	3	3	4	3	3	2	3	3	4	4	4	2.98	0.91
OC3	Threats reduced	3	1	2	4	3	4	2	3	3	3	3	4	4	3	3.00	0.88
OC4	Environmentally sustainable	2	1	2	3	3	3	2	3	2	3	3	4	4	3	2.71	0.83
OC5	Economically sustainable	3	1	2	3	4	4	2	3	2	4	3		4		2.92	1.00
OC6	Socially sustainable	4	2	3	4	4	4	3	3	3	3	4	4	4	4	3.50	0.65
OC7	Effective partnerships	4	3	2	4	3	4	3	3	3	3	3	4	4	4	3.36	0.63
OC	Overall grade																