



Australian Government



Queensland Government

Reef 2050 Long-Term Sustainability Plan

FOR COMMENT



Table of contents

Foreword.....	3
Providing comment on this Plan	4
Executive summary	5
Introduction	7
The Great Barrier Reef World Heritage Area	7
Pressures on the Reef	9
Current management.....	11
Comprehensive strategic assessment.....	13
This Plan	16
Outcomes framework	19
Using the outcomes framework in decision making.....	20
Water quality	21
Ecosystem health	25
Biodiversity	28
Heritage.....	31
Community benefits.....	33
Economic benefits.....	36
Governance for Plan delivery.....	39
Implementing the Plan.....	41
Improving knowledge and management.....	44
Integrated monitoring and reporting program.....	46
Reporting on the Plan	48
Reviewing the Plan.....	48
Glossary of commonly used terms and acronyms.....	49
Appendix A: Statement of Outstanding Universal Value for the Great Barrier Reef World Heritage Area.....	55
Appendix B: A methodology to benchmark the outstanding universal value of the Great Barrier Reef World Heritage Area for condition and trend	57
Appendix C: Links between comprehensive strategic assessment commitments and actions in the Plan	66
Appendix D: The Outcomes Framework - clear measures to protect Outstanding Universal Value ...	72
Appendix E: How the Plan will lead to the protection, maintenance and transmission of the Reef's Outstanding Universal Value	75
Appendix F: The outcomes framework—actions by strategies	78

[Front cover photo credits: Hawksbill turtle swimming over a coral reef near Heron Island in the Great Barrier Reef, courtesy of the Department of the Environment; diver at Lighthouse Bommie, ©Darren Jew/Tourism and Events Queensland; Yeppoon boat harbour, courtesy Tourism and Events Queensland; aerial view of Lady Musgrave Island and Lady Musgrave Reef in the Coral Sea, courtesy of the Department of the Environment. Back cover photo credits: Slashers Reef, courtesy of the Great Barrier Reef Marine Park Authority; fishing at Hinchinbrook Island, Townsville, courtesy of Tourism and Events Queensland; Horseshoe Bay at Magnetic Island, Townsville, courtesy of Tourism and Events Queensland; corals and crinoids, courtesy of the Great Barrier Reef Marine Park Authority.]

Foreword

On behalf of the Australian and Queensland governments and the cross-sectoral Reef Partnership Group, we are pleased to present this *Reef 2050 Long-Term Sustainability Plan* for consideration and comment.

The Great Barrier Reef is one of Australia's greatest natural assets. It is enjoyed by thousands of people each year for its intrinsic beauty while supporting a range of vibrant, multiple use activities including tourism. Alongside sustained community efforts, successive governments have continued to build and refine our collective approach to managing the Great Barrier Reef for future generations. This *Reef 2050 Long-Term Sustainability Plan* is another step in the right direction.

Our vision is to ensure the Reef not only retains its health and Outstanding Universal Value in 2050, but that it improves in overall health each decade between now and then.

The Plan builds on a three-year comprehensive Strategic Assessment that examined the status and trends of the Great Barrier Reef World Heritage Area's environmental values, including its Outstanding Universal Value. This Strategic Assessment looked at development and multiple use issues in Queensland and identified how we can strengthen our approach to protecting the Reef's environmental values. This Plan highlights the actions that must be taken to protect the Reef for the next 35 years to ensure it can be enjoyed by future generations.

The recently released *Great Barrier Reef Outlook Report 2014* confirmed the system as a whole retains the qualities contributing to its Outstanding Universal Value. However, it reiterated the need for action to address the challenges facing the Reef. Now, more than ever, the Great Barrier Reef needs all of us—government, industry and local, regional and global communities—to work in partnership to ensure that the Reef remains a global icon into the future.

In developing the Reef 2050 Long-Term Sustainability Plan, we acknowledge the significant contributions of the Great Barrier Reef Marine Park Authority for its independent management, technical and scientific advice. We also thank the peak industry and community organisations who committed time and effort as members of our Partnership Group and look forward to their further involvement in the Plan's finalisation. We know they are not the only ones with a genuine interest in the future of the Great Barrier Reef which is why we are now seeking your ideas and feedback – we look forward to hearing from you.



The Hon Greg Hunt MP
Commonwealth Minister for the Environment



The Hon Andrew Powell MP
Queensland Minister for Environment and
Heritage Protection

Providing comment on this Plan

The development of the Reef 2050 Long-Term Sustainability Plan has been informed by public submissions and comments received as part of the Australian and Queensland governments' comprehensive strategic assessment process.

To build on that solid base and to recognise the crucial role of Traditional Owners, industry and the community, a Partnership Group was established in June 2014 to help develop the Plan. The Group is chaired by the Hon. Greg Hunt MP, Federal Minister for the Environment, and the Hon. Andrew Powell MP, Queensland Minister for Environment and Heritage Protection. It brings together representatives of government, key industry organisations, scientists and interest groups. The role of the members of the Partnership Group is to fairly represent the interests of their sector and to provide advice in their field of expertise.

In addition, the Great Barrier Reef Marine Park Authority's Local Marine Advisory Committee meetings throughout July 2014 provided an opportunity to reach a broad range of key regional stakeholders with an interest in the Plan.

Public comments will inform the final Plan. In addition, the proposed targets and actions will be subject to scientific review. The governments will also work with experts from key stakeholder groups, through a 'program logic' process, to prioritise and more clearly articulate the relationships between outcomes, objectives, targets and actions. The final Plan will be provided to the Great Barrier Reef Ministerial Forum in December 2014.

The Plan is available on the Department of the Environment website www.environment.gov.au/marine/great-barrier-reef/long-term-sustainability-plan along with an online feedback form, supporting documents and details of information sessions. Consultation is open for a six-week period until **27 October 2014**. Feedback can be submitted via:

Online feedback form

www.environment.gov.au/marine/great-barrier-reef/long-term-sustainability-plan

Email

GBRlongtermplan@environment.gov.au

Post

Reef 2050 Long-Term Sustainability Plan Submissions
Department of the Environment
PO Box 787
Canberra ACT 2601
Australia

For further information, visit www.environment.gov.au/marine/great-barrier-reef/long-term-sustainability-plan, call 1800 803 772 or email GBRlongtermplan@environment.gov.au. Hard copies of the Reef 2050 Long-Term Sustainability Plan can also be requested.

Executive summary

The Great Barrier Reef is not only one of the natural wonders of the world, it is a significant part of Australia's national identity. It faces a number of pressures and whilst considerable progress has been made over many years to improve the management of the Reef, there is still more to be done. The Reef 2050 Long-Term Sustainability Plan presents a comprehensive strategy to protect the Reef's values into the future while allowing ecologically sustainable development and use.

When the Great Barrier Reef World Heritage Area was inscribed on the World Heritage List in 1981, it was already a multi-use area supporting a range of commercial and non-commercial activities. The adjacent catchment has undergone significant development including land clearing, agriculture, mining, industrial and urban growth. While some activities (such as commercial turtle harvesting and whaling), have been stopped and others (in the case of drilling for oil on the reef) were never allowed to start, it is clear that the full consequences of this ongoing development are only now being understood and addressed.

Since World Heritage listing, major steps have been taken to protect and manage the Reef. Almost all of the property is now within the Great Barrier Reef Marine Park and a strict zoning plan is in place. In addition, state and national laws were passed to curb land clearing in catchments and ensure that impacts of new development on the Reef and its Outstanding Universal Value are taken into account through planning systems and environmental assessment processes.

Industries and the community have played their part in protecting the Reef. For example, through the *Reef Water Quality Protection Plan*, improved land management practices by farmers and graziers have been instrumental in halting the long-term increases in sediment, nutrients and pesticides entering the Reef.

Despite this significant progress, the greatest risks to the Reef remain—as outlined in the *Great Barrier Reef Outlook Report 2014*—climate change, poor water quality from land-based run off, impacts from coastal development and some fishing activities. Many of the activities needed to improve the Reef's resilience have already commenced, and the Australian and Queensland governments agreed with the UNESCO World Heritage Committee that this long-term plan for the Reef was essential.

Equally important are the cultural and economic aspirations of the Indigenous communities of Queensland where strong connections with country continue. The cultural and ecological knowledge of Traditional Owners will be essential in delivering effective long-term management for the Reef.

This Plan identifies the actions that must be taken to protect the Reef for future generations. It brings programs and activities together to ensure greater coordination, efficiency and effectiveness. It describes how all levels of government, non-government organisations, industry and community groups can work together to further strengthen existing and implement new initiatives for the Reef. Integral to this approach will be the development of sectoral-based implementation plans around key human activities. These plans will outline how avoidance, mitigation, management and restoration actions combine to ensure development is sustainable.

In addition, regionally-based implementation plans will be important to address locally significant risks and to encourage community participation.

At the core of the Plan is an outcomes framework to guide the protection and management of the Great Barrier Reef towards an overarching vision:

In 2050 the Great Barrier Reef continues to demonstrate the Outstanding Universal Value for which it was listed as a World Heritage Area and supports a wide range of sustainable economic, social, cultural and traditional activities.

Outcomes, objectives and measurable targets have been identified across seven themes—water quality, biodiversity, ecosystem health, economic benefits, heritage, community benefits and governance—to form a comprehensive management framework to achieve the vision. Where appropriate, they build upon existing targets (such as those in the *Reef Water Quality Protection Plan 2013*) and focus on activities which will safeguard the Outstanding Universal Value of the Reef.

A Reef-wide integrated monitoring and reporting program is being developed to review the success of the Plan and inform adaptive management. It will build upon and coordinate existing monitoring and reporting activities and will be directly linked to the outcomes and targets identified in the Plan.

The Great Barrier Reef Ministerial Forum, which is made up of Australian and Queensland government ministers with portfolio responsibilities for the Great Barrier Reef, is overseeing the development and implementation of this Plan.

When completed, the Reef 2050 Long-Term Sustainability Plan will become a schedule to the Great Barrier Reef Intergovernmental Agreement 2009.

Introduction

The Great Barrier Reef World Heritage Area

In 1981, the Great Barrier Reef was recognised for its Outstanding Universal Value and inscribed on the World Heritage List for all four of the natural criteria specified in the World Heritage Convention.

In seeking inscription on the World Heritage List, the Australian Government, on behalf of the people of Australia, assumed an obligation to ensure the identification, protection, conservation, presentation and transmission of the area for current and future generations.

The boundaries of the World Heritage Area are shown in Figure 1 and the *Statement of Outstanding Universal Value* for the Great Barrier Reef World Heritage Area that was adopted by the World Heritage Committee is provided at Appendix A.

The Outstanding Universal Value and other natural, cultural and Indigenous values of the Great Barrier Reef are protected under Australian and Queensland legislation including the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC), the *Great Barrier Reef Marine Park Act 1975* and the *Queensland Marine Parks Act 2004*.

What is Outstanding Universal Value?

Outstanding Universal Value is the central concept of the World Heritage Convention. Broadly, its meaning follows the common sense interpretation of the words:

Outstanding: For properties to be of Outstanding Universal Value they should be exceptional, or superlative—they should be the most remarkable places on earth.

Universal: Properties need to be outstanding from a global perspective. World heritage does not aim to recognise properties that are remarkable from solely a national or regional perspective. Countries are encouraged to develop other approaches to recognise these places. Australia does this through the national heritage listing process.

Value: What makes a property outstanding and universal is its 'value', or the natural and/ or cultural worth of a property. This value is determined based on standards and processes established under the World Heritage Convention's Operational Guidelines (see whc.unesco.org/en/guidelines).

To be considered of outstanding universal value, a property needs to:

- meet one or more of 10 criteria
- meet the conditions of integrity
- if a cultural property, meet the conditions of authenticity and
- have an adequate system of protection and management to safeguard its future.



Figure 1: Map of the Great Barrier Reef and catchment indicating the boundaries of the World Heritage Area, the Great Barrier Reef Region, the Marine Park and the Reef catchments.

Pressures on the Reef

While the Great Barrier Reef continues to demonstrate Outstanding Universal Value, it is evident that the legacy of accelerated development over the past century has had an impact. Within the Reef itself, since the early 1900s, a rich fishery has been established, thousands of visitors have marvelled at its wonders every day, harbours have been built and export sea routes marked. It is clear that the full consequences of this ongoing development are only now being understood and addressed.

Every five years, the Great Barrier Reef Marine Park Authority prepares an Outlook Report for the Great Barrier Reef. These are regular and authoritative statements of overall progress, and provide a summary of the long-term outlook for the Reef based on assessments of condition, use, influencing factors, management effectiveness, resilience and risks.

Figure 2, drawn from the *Great Barrier Reef Outlook Report 2014* (the second in the series), sets out its most recent findings. These findings have informed priorities for action within this Plan.

Recent assessments have found that northern areas of the Great Barrier Reef, extending from Cooktown to the tip of Cape York, are in good to very good condition. Maintaining these areas is a priority for the long term management of the Reef. In the southern two-thirds of the property, extending south from Cooktown to Baffle Creek north of Bundaberg, the Reef's health is declining due to a range of complex pressures. Efforts are focused on restoring the condition of Reef health in these areas.

We have seen direct evidence of the vulnerability of the Reef to climatic factors in three major coral bleaching events and in widespread damage from extreme weather. Anthropogenic climate change is predicted to increase the intensity of these events and may affect Reef ecosystems in other ways. Climate change is a global problem and global action is required to slow its impacts. The Australian Government is playing its part, both domestically by meeting its 2020 emissions reduction targets and internationally by working constructively towards a new global climate change agreement that involves all countries. In addition, actions in this Plan will maximise the Reef's resilience to the current and future effects of climate change.

Great Barrier Reef Outlook Report 2014

Values	CHAPTER 2	Biodiversity	<ul style="list-style-type: none"> Significant declines in many habitats and species, especially in the inshore southern two-thirds of the region Good and very good condition for biodiversity in the northern third of the region
	CHAPTER 3	Ecosystem health	<ul style="list-style-type: none"> Declines in ecosystem processes continue for sedimentation and nutrient cycling Sea temperature increase, sea level rise and ocean acidification are continuing Supporting terrestrial habitats have been substantially modified, affecting connectivity Outbreaks of crown-of-thorns starfish and disease are increasing
	CHAPTER 4	Heritage values	<ul style="list-style-type: none"> Declines in natural heritage values affect nearly all other heritage values, especially Indigenous heritage Aesthetic values are being diminished Historic, scientific and social heritage values are being maintained Outstanding Universal Value remains largely intact but some attributes are declining
	CHAPTER 5	Commercial and non-commercial use	<ul style="list-style-type: none"> Continued strong economic value to regional and national economies Population and economic growth are driving increases in many of the uses of the region There has been an increase in reported illegal activities, particularly fishing-related offences Knowledge of some uses has increased significantly (e.g. ports and shipping)
			Factors influencing the region's values
Threats, responses and risks	CHAPTER 6		
	CHAPTER 7	Existing protection and management	<ul style="list-style-type: none"> There have been considerable improvements since the Outlook Report 2009 Management is most effective for topics with limited scale or intensity, or presenting minor or moderate complexity Challenges evident for broad-scale issues or those which are complex socially, biophysically and jurisdictionally
	CHAPTER 8	Resilience	<ul style="list-style-type: none"> Increasing evidence of loss of resistance and capacity to recover Recovery is known for only a few species Resilience of many heritage values depends on the active involvement of their custodians
	CHAPTER 9	Risks to the region's values	<ul style="list-style-type: none"> Threats likely to affect the region in the future are increasing and compounding Most serious risks arise from climate change, land-based run-off, coastal development and some aspects of direct use Consideration of all threats, regardless of the level of risk or the scale at which the threat operates, is essential to improving resilience
Outlook	CHAPTER 10	Long-term outlook for the region's ecosystem and heritage values	<ul style="list-style-type: none"> Even with the recent management initiatives to reduce threats and improve resilience, the overall outlook for the Great Barrier Reef is poor, has worsened since 2009 and is expected to further deteriorate in the future Greater reductions of all threats at all levels, reef-wide, regional and local, are required to prevent the projected declines in the Great Barrier Reef and to improve its capacity to recover

Figure 2: Summary of the findings from the *Great Barrier Reef Outlook Report 2014*.

Current management

The Great Barrier Reef is a large, complex system with multiple users and is subject to diverse and wide-ranging impacts. Management involves all three levels of government, Traditional Owners, industry, community organisations and individuals.

In order to protect the Reef's future the Australian Government introduced the *Great Barrier Reef Marine Park Act 1975*. The main object of the Act is: *'To provide for the long term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region'*.

The Act established the Great Barrier Reef Marine Park Authority and defined the Great Barrier Reef Region. It also enabled subsequent declaration of the Great Barrier Reef Marine Park, allowing ecologically sustainable use consistent with the Reef's protection and conservation.

The Marine Park is one of the world's largest marine protected areas, covering approximately 344,000 square kilometres. It is complemented by the Great Barrier Reef Coast Marine Park, established in adjacent state waters under Queensland Government legislation. Both marine parks are part of the Great Barrier Reef World Heritage Area.

The Australian Constitution establishes the overarching legal authority on which Reef management is based. In common with other federated nations, it divides responsibilities between the national government and individual states. Within this constitutional structure, the Australian and Queensland governments have long worked together to protect and conserve the Great Barrier Reef. This was formalised in 1979 through the *Emerald Agreement*.

In 2009, this effective working relationship was updated through the *Great Barrier Reef Intergovernmental Agreement* which sets out the current basis for cooperation between the two governments. The Intergovernmental Agreement recognises that key pressures cannot be effectively addressed by either government on its own and that collaboration is needed to ensure that the Reef and its Outstanding Universal Value are protected. Implementation of the Intergovernmental Agreement is driven by the Great Barrier Reef Ministerial Forum, made up of Australian and Queensland government ministers.

The Intergovernmental Agreement supports a range of more specific programs that have been successfully applied over the decades. In particular, the Great Barrier Reef joint Field Management Program has ensured the efficient use of Great Barrier Reef Marine Park Authority and Queensland government resources to achieve effective management and joint conservation goals.

Also consistent with the Australian Constitution, the Australian and Queensland governments have passed complementary laws and regulations to manage and protect the Reef as shown in Figure 3.

Key Australian and Queensland Government Legislation

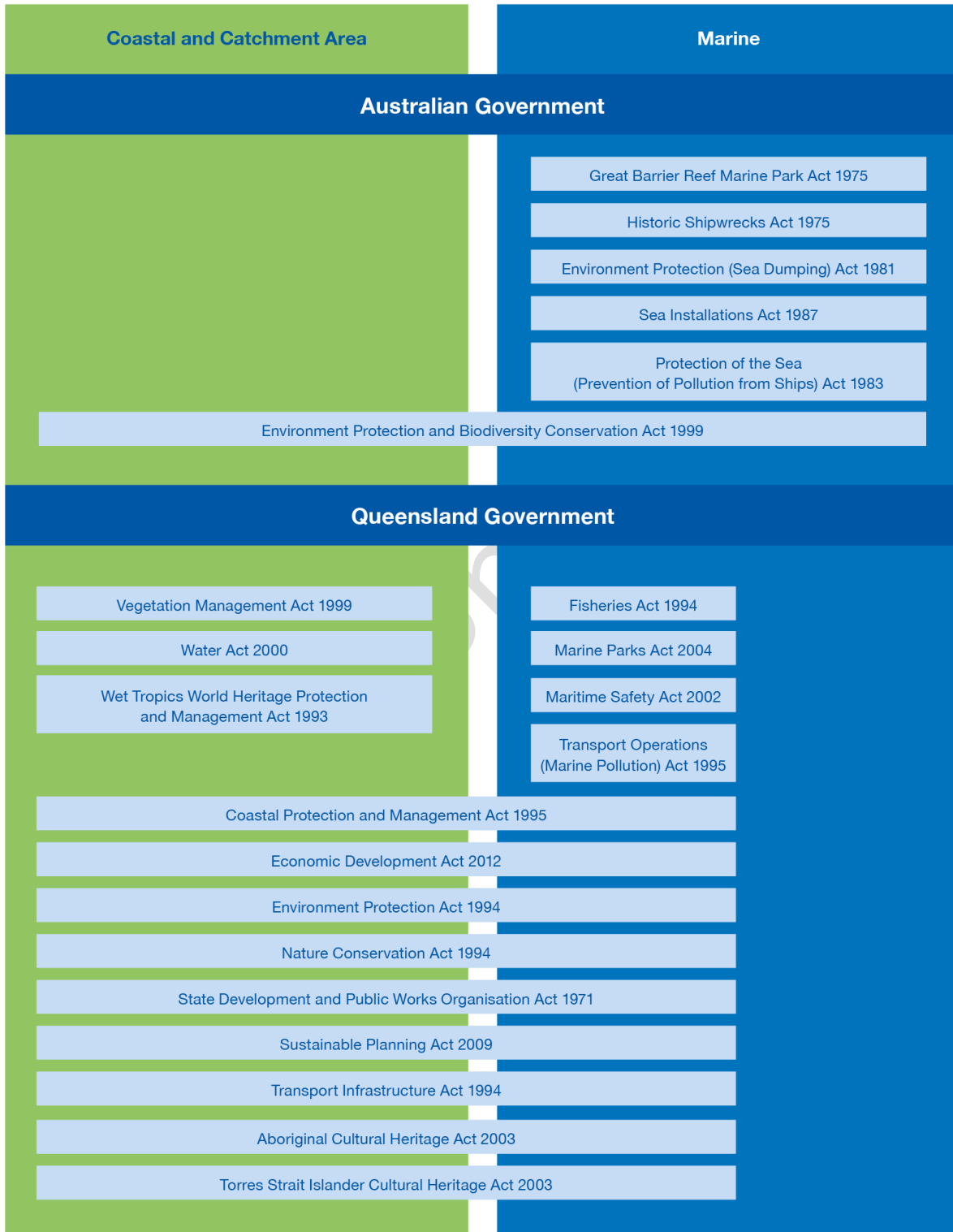


Figure 3: Examples of primary Australian and Queensland government Acts used to protect and manage the Great Barrier Reef World Heritage Area.

Under these laws, managers protect and manage the Reef by using a variety of tools including zoning plans, fishery management plans, species recovery plans, development plans and permits, planning, environmental impact assessment, monitoring and enforcement.

Partnership arrangements or stewardship programs have also been established with Traditional Owners, industry sectors, local governments, Natural Resource Management bodies, community groups and individuals.

In addition, regional industries including tourism, fishing, agriculture, mining and port managers undertake key actions to reduce their impacts on the Reef.

Adaptive management has long been a feature of management arrangements for the Reef. As a result, many potential risks have been identified early and specific responses developed. For example, the prospect of drilling for oil and the mining of reef limestone in the 1960s was largely responsible for the implementation of government initiatives to proactively manage the Great Barrier Reef in the 1970s. The first steps were taken to prohibit these activities. Then, in the early 1980s, risks associated with the exponential growth of tourism, compounded by the absence of a marine planning regime and limited scientific knowledge, highlighted the need for a comprehensive management framework.

The next wave of pressure was crown-of-thorns starfish outbreaks in the 1980s, which stimulated focused research and monitoring activities, and localised control at high value tourism sites. By the late 1990s, management of the reef focused on critical issues of biodiversity conservation, water quality, coastal development, fisheries, tourism and recreation.

More recently, the impacts of climate change on the Reef, connectivity between terrestrial and marine systems, and the cumulative impacts of coastal development activities have become key areas of additional concern. The *Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012-2017* is an example.

Comprehensive strategic assessment

A comprehensive strategic assessment of the Great Barrier Reef World Heritage Area and adjacent coastal zone was recently undertaken. The two parallel strategic assessments assessed in detail the condition and trends of the environmental values of the Region—including the Outstanding Universal Value and integrity of the World Heritage Area. The criteria for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area were benchmarked against the time of listing and assessed for condition and trend as detailed in Appendix B. The strategic assessments further examined how these values are being protected and how this protection can be strengthened—while delivering sustainable development and reasonable multiple use of the Region.

In releasing the comprehensive strategic assessment of the Great Barrier Reef World Heritage Area and adjacent Coastal Zone, the Australian and Queensland governments made commitments to improve and strengthen the knowledge, understanding and management of the Reef. These commitments, based on best available information and reflecting community input, will ensure that future planning and decision making maintains the Reef's Outstanding Universal Value and improves the health and resilience of the Reef.

The strategic assessment and commitments are the foundation for many of the actions in this Plan. Appendix C details the connections between the strategic assessment commitments and the actions.

Figure 4 depicts how the comprehensive strategic assessment is a key input to the Reef 2050 Long-Term Sustainability Plan.

Comprehensive strategic assessment – key actions

Strong foundational management will continue and be expanded upon, along with initiatives to strengthen Reef management including:

- **strong joint management** initiatives including:
 - a management framework focused on **clear outcomes** for the future of the Reef's values and driven by specific measurable targets
- **better guidance** for development activities including:
 - **cumulative impact guidelines** and **regional standards** to improve assessment and management of cumulative impacts from all activities within and adjacent to the Region
- **enhanced management, recovery and monitoring** programs including:
 - a **net benefit policy** to guide decision making and actions required to deliver an overall or 'net' improvement to ecosystem health and the condition of the Region's values
 - a program of **regionally-based Reef recovery actions** to support restoration of critical habitats, functioning of coastal ecosystems and sustainable multiple use
 - a **Reef-wide integrated monitoring and reporting program**, which is an important part of evaluating performance and guiding adaptive management across the life of the program
 - Reef Water Quality Protection Plan 2013
- **improved planning** for coastal urban areas, industry and ports including:
 - **ports legislation** that will concentrate development at five Priority Port Development Areas (four of which are in the Great Barrier Reef World Heritage Area) and introduce port master planning which will incorporate environmental consideration and community engagement. It will also prohibit dredging within and adjoining the Great Barrier Reef World Heritage Area for the development of new, or the expansion of existing, port facilities outside Priority Port Development Areas
- **rigorous EIS assessment process** for projects including:
 - **stringent conditions** addressing matters of National Environmental Significance and Outstanding Universal Value to be incorporated into approval recommendations
 - **net benefit** policy for the Reef to be developed.

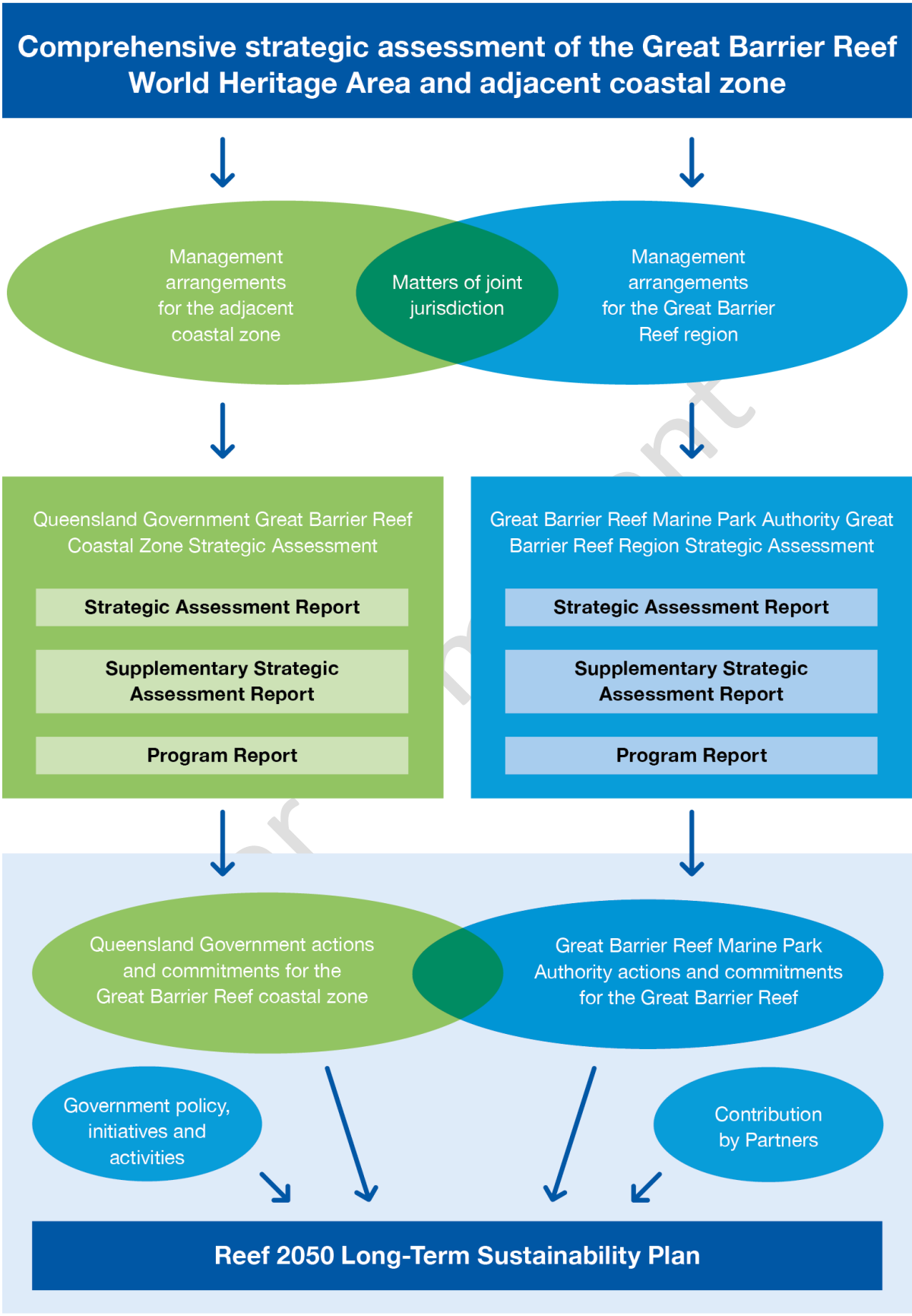


Figure 4: Inputs to the Reef 2050 Long-Term Sustainability Plan.

This Plan

The Reef 2050 Long-Term Sustainability Plan is an overarching framework for protecting and managing the Great Barrier Reef from 2015 to 2050.

The Plan sets out what Australians, as custodians for the international community, want the future of the Reef to be and how this can be achieved. It outlines measures for identifying, protecting, conserving, presenting and transmitting of the Reef's Outstanding Universal Value to future generations.

This Plan recognises it is vital that use is ecologically sustainable and the community is engaged in its protection and management.

The Plan does not propose solutions for anthropogenic climate change but it does focus on actions that can reasonably be taken to build its resilience to future pressures. This plan will guide alignment of more detailed existing or new actions by contributing partner organisations, industries or community groups.

The purpose of the Plan is to guide and focus management actions on key priorities and provide a framework for all parties to work together to achieve the vision:

In 2050 the Great Barrier Reef continues to demonstrate the Outstanding Universal Value for which it was listed as a World Heritage Area and supports a wide range of sustainable economic, social, cultural and traditional activities.

This vision will be achieved through a framework that includes desired outcomes, objectives, targets and actions for protecting the Reef's Outstanding Universal Value, underpinned by an integrated monitoring and reporting program and adaptive management framework. To achieve this vision, tangible results need to be delivered to improve Reef health each decade between now and 2050. The outcomes, objectives and targets maintain a clear line of sight between on-ground actions and the attributes that contribute to the Outstanding Universal Value of the Reef.

The Australian and Queensland governments will lead implementation of the Plan. It will integrate and guide actions across government, industry, Indigenous people, researchers and the community to ensure that current and future threats to the Reef are addressed in an effective, efficient and appropriate manner. Regional and local approaches, based on both local and expert knowledge, will be central to protecting and managing the Reef's values and the community benefits they support. In collaboration with Traditional Owners, measures will be identified to respect, preserve and maintain the knowledge, innovations and practices of Indigenous communities while protecting the resilience and condition of the Reef.

The Plan will be underpinned by the best available science as well as Traditional Owner and stakeholder knowledge. It will be regularly updated and reviewed in response to new information, changing circumstances and emerging issues. Future Outlook Reports and annual reports will inform progress towards achieving outcomes and be the principal guide to adaptive management.

To ensure that the Plan is effective, the Targets will be Specific, Measureable, Achievable, Realistic, and Time-Bound (SMART). Actions will have clear ownership and support. To achieve this, further work will be undertaken concurrently during the public comment period. In particular, the targets

and actions proposed in the Plan will be subject to scientific review. In addition, governments will work with experts from key stakeholder groups, through a 'program logic' process, to prioritise actions, more clearly articulate the relationships between outcomes, objectives, targets and actions, and identify measures of success.

Achieving the outcomes cannot rely on governments alone. They will only be achievable with significant leadership and involvement from industry and all sectors of the community.

For comment

How this Plan protects the Outstanding Universal Value of the Great Barrier Reef for current and future generations

Protecting the Outstanding Universal Value (OUV) of the Great Barrier Reef is a central element of the Plan. Building on existing actions, clear measures to identify, protect, conserve, present and transmit the OUV are established through the outcomes framework.

The outcomes framework identifies seven themes—Water Quality, Ecosystem Health, Biodiversity, Heritage, Economic Benefits, Community Benefits and Governance. For each theme, actions, short-term targets and medium to long-term objectives have been identified in order to achieve the outcomes and vision. This approach delivers a comprehensive planning and management framework. Refer to Appendix D for a breakdown of each objective per theme.

Protecting the Reef's OUV is a key response to the recommendations of the World Heritage Committee (WHC). In its 2014 decision, the WHC requested that the Plan:

'...results in concrete and consistent management measures that are sufficiently robust, effectively governed and adequately financed to ensure the overall long-term conservation of the property and its Outstanding Universal Value (OUV), including in view of addressing cumulative impacts and increasing reef resilience.'

The outcomes framework establishes a comprehensive set of management measures through the identification of clear targets and actions. Addressing cumulative impacts to increase the Reef's resilience are key priorities for action. The governance framework, established for this Plan, will ensure that actions are on track to reach and deliver targets and the 2050 vision to protect the Reef's OUV.

This Plan was also developed to respond to a number of key decisions by the World Heritage Committee from [2011](#), [2012](#), [2013](#) and [2014](#) including that the Plan:

1. Have *'agreed leadership at Federal and State levels, that addresses the entire property and the adjacent areas where activities can affect the OUV'*:
 - This Plan is a joint Australian and Queensland government initiative and will form a schedule to the *Intergovernmental Agreement 2009*. The scope of the Plan addresses activities across marine, coastal and reef catchment areas.
2. *'Establish the Outstanding Universal Value of the property as a clearly defined and central element within the protection and management system of the property'*:
 - Governance principles, objectives, targets and actions relate directly to embedding OUV into decision-making processes to improve protection and management of the Reef's OUV, building on work to date.
3. Lead to *'strategies that will sustain long-term sustainable development, compatible with the protection of OUV, including consideration of the all economic sectors'*:
 - This Plan commits to objectives, targets and actions across ecological, economic and social themes. Regional and/or sectoral-based implementation plans, to be developed in early 2015, will integrate and guide actions across government and relevant economic sectors to inform sustainable development.
4. *'Adopt clearly defined and scientifically justified targets'*:
 - This Plan is an outcome focused framework with defined objectives, (SMART) targets and actions to ensure the overall long-term conservation of the property. The targets in the Plan will undergo a peer review process during the public consultation period.
5. *'Include a fully integrated approach to planning, regulation and management of ports and shipping activity'*:
 - This plan adopts an integrated approach to ports management and shipping by referencing targets and actions consistent with the *Queensland Ports Strategy* and the *North East Shipping Management Plan*. The Plan also provides for a cross jurisdictional dredge management policy and dredging management strategy encompassing both industry and government-led initiatives. Refer to Appendix E.

**Italics* represent recommendations of the World Heritage Committee.

Outcomes framework

The aim of the outcomes framework is to provide a structured approach to management planning. It helps to identify and link actions to the vision.

The outcomes framework identifies seven themes—water quality, biodiversity, ecosystem health, economic benefits, heritage, community benefits and governance. Each theme has:

- An **Outcome** which is a statement of what is expected to be achieved by 2050.
- **Objectives** which are expected to be achieved in the medium term.
- **Targets** which are Specific, Measurable, Achievable, Realistic and Time-bound (SMART), and are scientifically justified with an expectation that they can be delivered by 2020.
- **Actions** which are measures to be taken by government and other sectors of the community over the next five years to achieve the targets.

The Plan's targets recognise and build upon existing commitments, while acknowledging regional and local diversity. Regional targets will be developed to address key issues or threats specific to particular areas. Actions focus on maintaining values in good condition and restoring or enhancing values in poor or declining condition. The Plan will be delivered through four mechanisms:

- Management guidance
- On-ground actions
- Stewardship and community participation
- Research and information management.

These mechanisms provide a snapshot of the types of actions that will be undertaken to reach the targets. Appendix F provides a comprehensive listing of all actions by mechanism that identifies which actions are contributing to each of the objectives and targets.

Regular reviews of the Plan will ensure:

- progressive improvements in management
- the condition of values are maintained or restored
- any additional work is identified and actioned.

Five-yearly reviews will facilitate adaptive management informed by improved scientific understanding, assessments of management performance and the incorporation of community views.

A governance framework that builds upon existing structures will ensure delivery of actions and reporting on progress. An integrated monitoring and reporting program based on existing products such as the Great Barrier Reef Marine Park Authority's Outlook Report and the Reef Water Quality Protection Plan Report Card will provide the scientific information to inform adaptive management.

Using the outcomes framework in decision making

Governments and other key organisations will deliver the outcomes and targets through relevant plans, policies and programs to ensure actions are achieved by stated timeframes. The organisations listed against actions are responsible for implementing them and working with partners and community members to achieve the outcomes. Decision making will be guided by the principles outlined in Figure 5.



Figure 5: Principles to guide all decision making for the Great Barrier Reef World Heritage Area.

Water quality

Improving the quality of water in the Reef is critical to maintaining its Outstanding Universal Value and improving its health and resilience. Water quality is fundamental to the health of Reef ecosystems and biodiversity, and affects heritage values and community benefits derived from the Reef.

The decline in water quality over the past 100 years continues to have a detrimental effect on the marine ecosystem. The impacts of some land use practices have only recently been identified, understood and addressed. It will take many years to reverse the trend but it is achievable with a sustained effort.

Science indicates that elevated levels of dissolved inorganic nitrogen contribute to more frequent crown-of-thorns starfish outbreaks while sediments, nutrients and pesticides contained in catchment run-off are a key threat to Reef water quality. This can affect corals, seagrass and other important habitats as well as the marine life they support. Another flow on effect is the deleterious impact on tourism and fisheries.

There have been significant improvements in the quality of water entering the reef from broadscale land use in the past 10 years through the collective efforts of landholders, natural resource management organisations, governments, industry and conservation groups. The *Reef Water Quality Protection Plan* goals and targets were reviewed and updated in 2013. They remain ambitious but are underpinned by improved scientific understanding.

Effective management of stormwater runoff, dredging, sewage outfalls, mine discharges and industrial contaminants will also continue.

The outcomes and targets for water quality are focussed on continued work to reduce diffuse source pollution from broadscale land use as directed by the *Reef Water Quality Protection Plan 2013*. Actions under this theme also address water pollution from other sources (e.g. industrial and urban) and build on regulatory and other requirements already in place to manage discharge and runoff. Additionally, Traditional Owners are becoming involved in on-ground water quality improvement programs.

Further catchment water quality improvements, both for point and non-point sources of pollution, will require innovative and cost-effective measures and mechanisms, for example market-based nutrient trading.

Water quality outcome	
Over successive decades Reef water quality will improve to sustain the Reef's Outstanding Universal Value and build resilience and ecosystem health.	
Objectives	
WQO1	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.
WQO2	The quality of water in or entering the Reef from industrial, port (including dredging), urban waste and stormwater sources has no detrimental impact on the health and resilience of the Great Barrier Reef.
Targets	
WQT1	<p>By 2018:</p> <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. <p>[From <i>Reef Water Quality Protection Plan 2013</i>]</p>
WQT2	<p>By 2018:</p> <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 priority areas. • 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. <p>[From <i>Reef Water Quality Protection Plan 2013</i>]</p>
WQT3	By 2020, Reef-wide and locally relevant water quality targets are in place for urban, industrial and port activities and monitoring shows a stable or positive trend.
WQT4	Traditional Owners are engaged in on ground water quality improvement and monitoring.
WQT5	Use of cost-effective and innovative measures and mechanisms to improve water quality from broadscale land use, urban, industrial and port activities (including dredging) is increasing.
Actions	
Management guidance	
WQA1	By 2018, review and update the Reef Water Quality Protection Plan and its targets. (QG, AG, GBRMPA, Partners)
WQA2	Implement innovative management approaches through the Reef Trust for improving water quality. (AG, QG, GBRMPA)
WQA3	Review and set regionally relevant standards for urban and point-source discharges into Reef and coastal waters and ensure licensees meet these standards. (Industry, QG, LG)

WQA4	Identify, pilot and, where feasible, implement voluntary cost-effective market-based trading programs and other innovative mechanisms for point and diffuse sources of pollution. (QG, Industry, Service providers, LG)
WQA5	Establish a performance-based voluntary reporting framework across agriculture, urban, ports and industry to measure management efforts to achieve best management practice and to inform regional report cards. (Industry, QG, LG)
WQA6	Prohibit dredging within and adjoining the Great Barrier Reef World Heritage Area, for the development of new, or the expansion of existing port facilities outside priority port development areas, for the next 10 years. (QG)
WQA7	Undertake dredging in a planned, structured and strategic manner for each port as part of a port safety and planning process that prioritises opportunities for the beneficial re-use of dredged material, taking into account national and international requirements and guidelines for the disposal of dredge material. (QG, GBRMPA)
WQA8	Develop and implement a dredging management strategy that includes: <ul style="list-style-type: none"> • a principle-based dredge management policy that prioritises the beneficial re-use of dredged material (AG, GBRMPA, QG, Ports Australia, Industry) • conduct an examination and, where appropriate, a potential pilot program to evaluate different treatment and re-use options for managing dredge spoil (Ports Australia, AG) • measures to address dredging related impacts on Reef water quality and ecosystem health. (GBRMPA, Ports Australia) • a 'code of practice' for port related dredging activities. (Ports Australia, Industry, QG, GBRMPA)
WQA9	Develop a statewide coordinated maintenance dredging program that is consistent with the dredge management policy and considers: <ul style="list-style-type: none"> • each port's maintenance dredging needs • historical dredging volumes and likely future requirements and limits • availability of cost-effective dredge equipment • identification of environmental windows to avoid coral spawning, seagrass recruitment, turtle breeding, weather events • risk-based monitoring programs. (Industry, QG, AG, GBRMPA)
On-ground actions	
WQA10	Continue improvement in water quality from broadscale land use through implementation of Reef Water Quality Protection Plan 2013 actions. (QG, AG, GBRMPA, Industry, NRMs)
WQA11	Identify and action opportunities for Traditional Owner engagement in on-ground water quality improvement and monitoring programs. (NRMs, GBRMPA, GBR Traditional Owners)
WQA12	Increase adoption of leading practice in the management and release of point-source water affecting the Reef. (Industry, QG, LG, Reef Guardians)
WQA13	Implement best practice stormwater management (e.g. erosion and sediment control and water sensitive urban design) for new development in coastal catchments. (LG, QG, Industry)
WQA14	Finalise plans (Water Quality Improvement Plans - Healthy Waters Management Plans) for Reef catchments and key coastal areas, identifying priorities for protection of the

	Reef. (NRMs, QG, GBRMPA, AG, Industry, LG)
WQA15	Expand 'nested' integrated water quality monitoring and report card programs at major ports and activity centres (e.g. Gladstone), in priority catchments (e.g. Mackay Whitsundays) and Reef-wide (i.e. Reef Report Card), to guide local adaptive management frameworks and actions. (Industry, LG, NRMs, QG, GBRMPA)
Stewardship and community participation	
WQA16	Build capacity for local government and the development industry to improve water quality management in urban areas. (AG, QG, LG, LGAQ, GBRMPA)
WQA17	Increase resource sector participation in regional water quality improvement initiatives and partnerships aimed at managing, monitoring and reporting of water quality. These should build on existing initiatives such as: <ul style="list-style-type: none"> • Fitzroy Partnership for River Health • Gladstone Healthy Harbours Partnership • Mackay Whitsunday Healthy Rivers to Reef Partnership. (QG, Industry, NRMs)
Research and information management	
WQA18	Review and update water quality objectives and Great Barrier Reef Marine Park Authority Water Quality Guidelines at Reef-wide and regionally relevant scales based on scientifically verified monitoring and research. (QG, GBRMPA, Industry, LG)
WQA19	At each major port, understand the port sediment characteristics, risks and how they interact and contribute to broader catchment contributions within the Great Barrier Reef World Heritage Area. (Industry, QG, GBRMPA)

Ecosystem health

Well-functioning coral reefs and associated habitats provide a host of ecosystem services and underpin ecosystem resilience. The ecosystem health outcome relates to the ecological systems that support the integrity, biodiversity and heritage values of the Reef and the economic and community benefits it supports. Fundamental to this is acknowledging the integral place of Traditional Owners as part of the Great Barrier Reef ecosystem.

Ecosystems are naturally complex. Targets and actions relate to those aspects of ecological systems (e.g. coral, seagrass and coastal habitats) that support or best represent ecological and biological processes of the Reef, provide natural habitats for biodiversity including threatened species, increase resilience to climate change, and support community benefits (e.g. natural beauty and protection from wave action). The capacity of ecosystems to recover from disturbance is a key indicator of resilience and can be assessed directly by measuring recovery rates and indirectly by monitoring key processes such as reproduction, recruitment and mortality rates.

Ecosystems are subject to a wide range of influences, many of which are outside human control (e.g. floods and cyclones). Measuring progress towards the outcome, objectives and targets for the ecosystem health theme will take these externalities into account.

Ecosystem health outcome	
The status and ecological functions of ecosystems within the Great Barrier Reef World Heritage Area are in at least good condition ¹ with a stable to improving trend.	
Objectives	
EHO1	The Great Barrier Reef World Heritage Area retains its integrity and system functions by maintaining and restoring the connectivity, resilience and condition of marine and coastal ecosystems.
EHO2	Trends in the condition of key ecosystems including coral reefs, seagrasses, estuaries, islands, shoals and inter-reefal areas are improved over each successive decade.
EHO3	Direct, indirect and cumulative impacts on marine and coastal ecosystems are avoided, mitigated or offset to achieve a net benefit for Reef resilience and ecosystem health.
EHO4	To respect, preserve and maintain the knowledge, innovations and practices of Indigenous communities relevant for the conservation and cultural use of biocultural diversity.
Targets	
EHT1	Condition and resilience indicators for coral reefs, seagrass, islands, estuaries, shoals and inter-reefal shelf habitats are on a trajectory towards achieving at least good condition at regional and Reef-wide scales.
EHT2	Key direct human-related activities are managed to address cumulative impacts and achieve a net benefit for the Reef.
EHT3	There is no net loss of the extent, and a net improvement in the condition of terrestrial ecosystems, such as natural wetlands and riparian vegetation, that contribute to Reef resilience and ecosystem health.

¹ 'Good' is defined in the glossary.

EHT4	Traditional Owners have developed Indigenous Ecological Knowledge Management Systems for: <ul style="list-style-type: none"> • protecting, and where appropriate, sharing of knowledge, innovations and practices • conserving and cultural use of biocultural diversity • use in decision making.
EHT5	Prioritise functional ecosystems critical to Reef health in each region for their protection, restoration and management.
Actions	
Management guidance	
EHA1	Further develop regionally relevant standards for ecosystem health (desired state, critical thresholds and health indicators). (GBRMPA, QG, AIMS, NRMs, LG)
EHA2	Develop guidelines for assessing cumulative impacts on Matters of National Environmental Significance in the Great Barrier Reef World Heritage Area. (QG, AG, GBRMPA, LGAQ)
EHA3	Ensure Great Barrier Reef ports planning incorporates measures to support protection, restoration and management of coastal ecosystems that contribute to Reef health and resilience. (Industry, QG, AG)
EHA4	Develop a net benefit policy to restore ecosystem health, improve the condition of values and manage financial contributions to that recovery. (GBRMPA, AG, QG, LGAQ, NRMs)
EHA5	Acknowledge the unique and long-term presence of Indigenous Australians in Great Barrier Reef ecosystems in policy and planning documents aimed at the conservation and cultural use of biodiversity. (GBR Traditional Owners, GBRMPA, AG, QG)
On-ground actions	
EHA6	Maintain and work to add to the island and coastal protected area estate and continue to provide funding for protected area management in the Great Barrier Reef coastal zone. (QG)
EHA7	Improve protection, restoration and management of Reef priority coastal ecosystems including islands through innovative and cost-effective measures. (AG, QG, LG, Reef Guardian, stewardship programs, NRMs, Industry)
EHA8	Maintain the Great Barrier Reef Marine Park and Great Barrier Reef Coast Marine Park Zoning Plan and enhance compliance through improved enforcement, and adoption of new technologies. (GBRMPA, QG)
EHA9	Improve shipping and other incident response capacity. (AMSA, QG, GBRMPA)
EHA10	Establish a baseline for marine debris on the Great Barrier Reef's islands, beaches and coastlines and reduce debris by 20 per cent from this baseline. (GBRMPA, QG, GBR Traditional Owners)
EHA11	Improve integration and effectiveness of crown-of-thorns starfish research, management and control. (GBRMPA, AG, QG, AMPTO)
EHA12	Identify and prioritise key sites of high ecological value and implement recovery programs. (GBRMPA, QG)
EHA13	Implement ecosystem health initiatives through the Reef Trust investment strategy. (AG, QG)

EHA14	Invest in building Traditional Owner capacity in planning and managing the conservation and sustainable use of the Reef's biological resources. (GBR Traditional Owners, GBRMPA, AG)
Stewardship and community participation	
EHA15	Support best practice and community stewardship activities that contribute to Reef health and resilience, for example through Reef Guardian programs, Natural Resource Management plans, industry Best Management Programs and Stewardship programs, Reef Plan and High Standard Tourism Operators. (AG, QG, LG, GBRMPA, Industry)
EHA16	Support Traditional Owners and stakeholders, including Reef Guardians, to clean up and, where possible, identify the sources of marine debris. (GBRMPA, GBR Traditional Owners, Industry, NRMs, QG)
EHA17	Increase engagement and participation of Traditional Owners in joint management of existing and new protected areas in the Great Barrier Reef coastal zone and region. (GBR Traditional Owners, GBRMPA, QG)
Research and information management	
EHA18	Finalise classification of marine ecosystems. (QG, GBRMPA)
EHA19	Improve mapping and modelling of ecosystems important for the protection of the Reef to inform planning, assessment and decision making. (GBRMPA, AIMS, QG, NRMs, LGAQ)
EHA20	Address key knowledge gaps identified in Great Barrier Reef Outlook Report 2014 through the National Environment Science Program. (AG, GBRMPA)
EHA21	Develop, implement and coordinate a protocol and knowledge management system for collecting, handling and sharing culturally sensitive information, and its integration in decision making. (GBR Traditional Owners, GBRMPA, AG, QG)

Biodiversity

Biodiversity encompasses all living things, from microbes and single celled algae to marine turtles and whales, their habitats and the way they interact with each other and their environment. It is not just a measure of how many species there are, but encompasses all natural variation—from genetic differences within one species to variations across a habitat or a whole ecosystem.

The Great Barrier Reef is one of the world’s most diverse and remarkable ecosystems, with a wide range of habitats and many thousands of different species.

Existing monitoring programs have been used to define the targets with a range of species acting as indicators of broader biodiversity health—best represented by considering extent, condition and trend for specific species or their habitat. Actions to maintain and restore ecosystem function are part of a whole-of-ecosystem approach to biodiversity conservation and are captured under the ecosystem health theme.

The integral connection that Traditional Owners have with the biodiversity of the Great Barrier Reef is acknowledged and recognised. Protection of Indigenous Knowledge systems and the conservation and sustainable use of traditional biological resources are central to this.

Biodiversity outcome	
The Reef maintains its diversity of species and ecological habitats in at least a good ² condition with a stable to improving ³ trend.	
Objectives	
BO1	Indices of biodiversity are in good or very good condition at Reef wide and regionally relevant scales.
BO2	Stable or positive trends in populations of indicator species across their natural range.
BO3	Reef habitats and ecosystems are managed to sustain healthy and diverse populations of indicator species across their natural ranges.
BO4	The survival and conservation status of listed species within the Great Barrier Reef World Heritage Area is promoted and enhanced.
BO5	Traditional Owners are engaged and participate in the conservation and sustainable use of cultural keystone species and biocultural resources.
Targets	
BT1	The trends in key indicator species ⁴ populations and habitat condition are improving at Reef-wide and regionally relevant scales.
BT2	The populations of Indo-Pacific humpback and snubfin dolphins, dugong, loggerhead, green, and flatback turtles are stable or increasing at Reef-wide and regionally relevant scales.

² ‘Good’ is defined in the glossary.

³ ‘Stable’ is the objective where the condition of the population is good or very good and ‘improving’ is the objective when the condition of the population is poor or very poor.

⁴ ‘Indicator species’ include, but are not limited to, bony fishes, sharks and rays, sea-snakes, marine turtles, seabirds, shorebirds, coastal dolphins, humpback whales and dugongs.

BT3	Coral trout stocks are to be managed to maintain 60 per cent of the unfished ⁵ population.
BT4	Customary use of biological resources, in accordance with traditional cultural practices that are compatible with conservation or cultural use requirements are formally recognised and adopted in management arrangements.
Actions	
Management guidance	
BA1	Further develop and implement dugong and turtle protection plans using the Reef Trust and associated initiatives. (AG, QG, GBRMPA)
BA2	Develop and implement the recommendations of the National Vessel Strike Strategy. (AG, GBRMPA, QG)
On-ground actions	
BA3	Implement further actions to reduce human-related causes of dugong mortality. (QG, GBRMPA)
BA4	Continue implementation of the Raine Island Recovery project. (AG, QG, GBRMPA)
BA5	Reduce cumulative impacts on coastal dolphin populations especially Indo-Pacific humpback and snubfin dolphins. (QG, GBRMPA, AG)
BA6	Complete Queensland's fisheries management review and implement measures to achieve and maintain sustainable commercial and recreational fisheries. (QG)
BA7	Ensure that through the Field Management Program resources are available for island habitat restoration projects and pest eradication particularly at critical seabird and turtle nesting sites. (GBRMPA, QG)
BA8	Operate an effective marine animal stranding response program. (QG, GBRMPA)
BA9	Where agreed, apply traditional knowledge and customary use of biological diversity, including the use of community protocols for managing protected areas. (GBR Traditional Owners, GBRMPA, QG)
BA10	Identify, protect and manage key marine turtle breeding areas and foraging grounds. (QG, GBRMPA)
BA11	Identify, protect and manage key seabird islands and foraging grounds. (QG, GBRMPA)
BA12	Work with Traditional Owner groups to identify biological resources within their sea country and develop plans of management for conservation and use of those resources. (GBR Traditional Owners, GBRMPA, QG)
BA13	Develop a guideline on assessing and managing underwater noise on species. (GBRMPA, AG, QG)
Stewardship and community participation	
BA14	Reduce the incidental catch of species of conservation concern through regionally-based cooperative management approaches. (GBRMPA, QG, Commercial and Recreational Fishers)

⁵ 'Unfished population' refers to the virgin biomass or unfished population of a fisheries stock.

BA15	Improve Traditional Owner engagement to strengthen participation in decision making at all levels relating to the conservation and cultural use of biodiversity. (GBRMPA, AG, GBR Traditional Owners, QG)
Research and information management	
BA16	Complete a stock assessment of coral trout every five years. (QG)
BA17	Continue to survey the dugong population every five years. (JCU, GBRMPA, QG)
BA18	Monitor and report turtle breeding success at key locations. (QG, GBRMPA)
BA19	Monitor key seabird populations for changes on a regular basis. (GBRMPA, QG)
BA20	Invest in research to address key Indigenous knowledge gaps identified in the Great Barrier Reef Outlook Report, in particular an assessment of Traditional Fisheries. (GBR Traditional Owners, GBRMPA)

For comment

Heritage

For the purposes of this Plan, heritage encompasses Indigenous and non-Indigenous values. Protecting natural heritage, including the Outstanding Universal Value of the Reef, is embedded in the overarching vision and all themes.

Indigenous heritage recognises the heritage of Aboriginal and Torres Strait Islander peoples who are the First Australians and the Traditional Owners of the Great Barrier Reef. Heritage is an important element in Indigenous custom and its preservation reflects continued recognition and respect for past generations of Traditional Owners and the ancestral beings that shaped the land, seas and waterways. Indigenous heritage is unique, dynamic and diverse. Traditional Owners express their cultural heritage through their relationships with country, people, beliefs, knowledge, lore, language, symbols and ways of living. All of these arise from Indigenous spirituality and the responsibility of Traditional Owners to maintain their connection to their heritage through customary practices. Many traditional cultural practices include plants, animals and the environment, making nature inseparable from cultural identity.

*'The sea, its natural resources and our identity as Traditional Owners, are inseparable...
Our ancestors have hunted and fished in this sea country since time immemorial...
(Girringun Aboriginal Corporation)*

Non-Indigenous heritage includes buildings, monuments, gardens, industrial sites, landscapes, cultural landscapes, archaeological sites, groups of buildings and precincts, or maritime sites and places which embody a specific cultural or historic value. Heritage places tell us about national and social developments in Australia over the past few centuries.

The heritage theme also considers **cultural significance** which encompasses all of the cultural values and meanings that might be recognised including aesthetic, historic, scientific, social and spiritual. These values are listed in Article 1.2 of the *Burra Charter* and reflected in the Great Barrier Reef Region Strategic Assessment. Australia's charter is to protect, conserve and celebrate our cultural heritage to preserve items that form part of the historic or cultural record; and maintain a sense of continuity by sustaining things that identify who we are and where we have come from. Culture is not static; it evolves and changes over time.

Heritage outcome	
Indigenous and non-Indigenous heritage values are identified, protected, conserved and managed such that the heritage values maintain their significance for current and future generations.	
Objectives	
HO1	Traditional Owners have joint management responsibilities for the documentation and conservation of Indigenous heritage values.
HO2	Non-Indigenous heritage including natural, aesthetic, historic, scientific, and social values are identified, conserved and managed in partnership with the community.

Targets	
HT1	Identification, documentation, and long-term protection of Indigenous and non-Indigenous heritage values are embedded in decision-making and planning processes.
HT2	The number and effectiveness of cooperative management practices for protection and conservation of Indigenous and non-Indigenous heritage is increased.
Actions	
Management guidance	
HA1	Update the Great Barrier Reef Marine Park Heritage Strategy 2005 to more comprehensively address Indigenous and non-Indigenous heritage. (GBRMPA)
HA2	Complete heritage management plans for Low Isles and North Reef light stations. (GBRMPA)
HA3	Update existing conservation management plans for historic shipwrecks—the <i>SS Yongala</i> (1911), <i>Gothenburg</i> (1875), and <i>SS Llewellyn</i> (1919). (GBRMPA)
HA4	Develop impact assessment guidelines for cultural heritage values in the Great Barrier Reef region. (AG, QG, GBRMPA, LGAQ)
HA5	Facilitate robust consideration of heritage values in planning and port development and associated activities (including dredging). (AG, QG, GBRMPA, Ports Australia, NRMs, GBR Traditional Owners)
On-ground actions	
HA6	Complete and implement conservation management plans for key historic shipwrecks— <i>HMS Pandora</i> (1791), <i>HMCS Mermaid</i> (1829) and <i>Foam</i> (1893). (GBRMPA)
Stewardship and community participation	
HA7	Build capacity for the involvement of Traditional Owners and community members in cooperative management (AG, QG, GBRMPA, NRMs, GBR Traditional Owners) and port planning. (Industry, GBR Traditional Owners)
HA8	Increase community awareness and appreciation of heritage values. (AG, QG, GBRMPA, LG)
Research and information management	
HA9	Work with and support Traditional Owners to collect, store and manage their own information, including cultural heritage value assessments. (GBRMPA, GBR Traditional Owners, AG, QG)
HA10	Further identify, map, monitor and report on key Reef heritage values and sites, including comprehensive maritime surveys in priority sections of the Reef. (GBRMPA, QG, AG)
HA11	Consolidate Reef heritage data, and identify priorities for protective action. (GBRMPA, QG, AG)

Community benefits

The Great Barrier Reef plays an important role in community life. Local residents and visitors from around the world are drawn to the Reef for its exceptional natural beauty, and many people have strong connections with the Reef through culture, occupation or familiarity. Human wellbeing—a state of happiness, good health and prosperity—is inextricably linked to environmental health.

Traditional Owners have long highlighted the benefits that their communities derive from the Region’s environment including access to the Reef’s resources, employment and improved health outcomes. This is why they are seeking world’s best practice in the development of joint management arrangements. The health benefits of natural ecosystems are well recognised through initiatives like Healthy Country, Healthy People which explores the many ways in which nature significantly contributes to human health and wellbeing.

People also derive less tangible benefits from healthy ecosystems such as nature appreciation, opportunities for relaxation and enjoyment, and a better understanding of the complex world in which we live. The Reef also provides coastal residents with protection from wave action in extreme weather.

Explicit consideration of community benefits in environmental decision making is not standard practice. The community benefits theme, therefore, aims to develop a shared understanding of community benefits derived from the Reef. It also provides clarity on individual and collective roles and responsibilities to ensure these benefits are maintained for current and transmitted to future generations. An important step is the further development of a long-term social and economic monitoring program that is implemented at local, regional and Reef-wide scales.

Community benefits outcome	
An informed community that plays a role in protecting the Reef for the benefits it provides for current and future generations.	
Objectives	
CBO1	A healthy Reef that supports sustainable lifestyles and livelihoods, and provides coastal communities with protection from extreme weather events.
CBO2	Community benefits provided by the Reef, including its exceptional natural beauty, are maintained for current and future generations.
CBO3	The rights of Traditional Owners to derive benefits from the conservation and cultural use of biological resources are recognised.
CBO4	Local, regional and Reef-wide community benefits are understood and the community is actively engaged in Reef management.
Targets	
CBT1	A long-term social and economic monitoring program is guiding management decisions.
CBT2	Community participation in stewardship actions to improve Reef health and resilience continues to grow.
CBT3	The number of sea-country initiatives, including benefit-sharing agreements with Traditional Owners, is increased.

CBT4	Climate change adaptation strategies recognise and avoid adverse impacts on coastal ecosystems essential for Reef health and resilience.
Actions	
Management guidance	
CBA1	Ensure the impact on Reef health and resilience is addressed when responding to coastal hazards. (LG, QG, GBRMPA)
CBA2	Ensure community benefits derived from the Reef are considered in local and State-level policy and planning instruments and development and management decisions. (QG, GBRMPA, LGAQ, LG, NRMs)
CBA3	Establish and adopt standards to report on condition and trend of aesthetic qualities of the reefs, islands and coasts. (GBRMPA, QG)
CBA4	Ensure the aesthetic qualities of the reefs, islands and the coast are considered and protected through planning and development decisions. (QG, GBRMPA, LGAQ, LG)
CBA5	Review current mechanisms and processes to improve benefits to Traditional Owners engaged in sea country management. (GBR Traditional Owners, GBRMPA)
CBA6	Work with Traditional Owners to identify world's best practice in agreement making, strategic planning, and management and implementation of Indigenous programs in relation to the Great Barrier Reef sea country estate. (GBR Traditional Owners, GBRMPA, QG)
On-ground actions	
CBA7	<p>Industry, community and governments work together to implement programs such as the Great Barrier Reef Marine Park Authority's Recreation Management Strategy to:</p> <ul style="list-style-type: none"> • implement best practice approaches and certification programs to ensure protection and sustainable use of the Great Barrier Reef • maintain visitor satisfaction through high quality presentation and tourism services, including cultural heritage interpretation • maintain recreational opportunities for Reef visitors (e.g. recreational fishing, sailing and diving) • ensure that tourism and recreation activities are sustainable • maintain and apply a contemporary and adaptive set of management arrangements • coordinate field management activities for Reef visitors • promote voluntary compliance and Reef-friendly behaviour • provide adequate and well-maintained visitor infrastructure such as moorings, reef protection markers, island facilities and interpretative signs. (GBRMPA, AMPTO, LGAQ, QG, NRMs)

Stewardship and community participation	
CBA8	<p>Strengthen and integrate programs such as the Great Barrier Reef Marine Park Authority's Reef Guardian stewardship program, to promote the:</p> <ul style="list-style-type: none"> • Reef's values and the community benefits they provide • threats to the Reef and what people can do to address them • implications of climate change for the Reef and coastal ecosystems • role of the Reef, coastal ecosystems and physical coastal processes in protecting communities from extreme weather events • opportunities to contribute/play a role in protecting and managing the Reef. (GBRMPA, AMPTO, LGAQ, Industry, QG)
CBA9	<p>Develop collaborative working arrangements with Traditional Owners which establish mutual trust and build Indigenous capacity. (GBRMPA, AG, QG)</p>
CBA10	<p>Improve the involvement and support of local communities in protecting, managing and sustainably using the Reef, including through Local Marine Advisory Committees. (GBRMPA)</p>
Research and information management	
CBA11	<p>Continue developing a long-term social and economic monitoring program. (GBRMPA)</p>

Economic benefits

Delivering *The Queensland Plan* objectives for population and economic growth, whilst maintaining the Outstanding Universal Value of the Reef is a key challenge. Reef dependent industries and Reef associated industries support diverse and sustainable communities. These industries and related communities need to be able to continue to prosper, while ensuring protection of the Outstanding Universal Value of the Reef.

The economic benefit theme focuses on improving and maintaining the ecological, social and economic sustainability of Reef dependant and Reef associated industries. This theme also recognises that a partnership involving regional and Indigenous communities, government and industry can ensure that development pressures are addressed in an effective and positive way.

Addressing the interplay between environmental, social and economic factors through improved planning and decision-making and an outcomes focused approach will contribute to sustainable communities, a healthy environment and the protection of the Reef's Outstanding Universal Value for current and future generations.

Many of the actions listed under other themes consider economic benefits and they are not repeated here.

Economic benefits outcome	
Economic activities within the Great Barrier Reef World Heritage Area and its catchments sustain the Reef's Outstanding Universal Value.	
Objectives	
EBO1	Protecting the Reef's Outstanding Universal Value is embedded within decision-making, with impacts first avoided, then mitigated and then as a final consideration, any residual impacts are offset to achieve a net environmental benefit.
EBO2	Reef dependent and Reef associated industries are sustainable, productive and profitable.
EBO3	Traditional owners derive economic benefits from conservation and sustainable use of biological resources.
Targets	
EBT1	Cumulative impacts on the Reef from economic activities are understood and measures to ensure a net environmental benefit approach for the Reef are in place.
EBT2	The relationship between Reef health and the viability of Reef dependent industries (e.g. tourism and fishing) is understood and considered in planning and development decisions.
EBT3	Shipping within the Reef continues, is safe, risks are minimised, and there are no environmentally damaging incidents.
EBT4	Traditional Owners' business capacity to generate economic benefits from effective use and management of Traditional land and sea country estates is increased.
EBT5	The number of employment opportunities for Indigenous Australians in sea country management is increased.

Actions	
Management guidance	
EBA1	Identify, test and use economic indicators as a component of the Integrated Monitoring Reporting Program. (GBRMPA)
EBA2	Introduce a guideline for port master planning for Priority Port Development Areas that considers the relationships beyond traditional port boundaries, operational, economic, environmental and social, including supply chains and surrounding land issues. (QG)
EBA3	Adopt the best practice principles identified in the Gladstone Independent Review Reports, provide guidance on where they can be applied, and integrate into port planning and development. (GBRMPA, AG, QG)
EBA4	Develop and adopt an intergovernmental net benefit policy for the Reef. (GBRMPA, AG, QG, LGAQ)
EBA5	Continue to refine and improve guidance and procedural requirements for avoiding, mitigating and offsetting impacts to the Reef using standardised policies, procedures and guidelines. (AG, GBRMPA, QG)
EBA6	Develop and implement an Indigenous Business Development Plan including a comprehensive review of processes and systems to identify existing and potential economic benefits to Traditional Owners. (GBR Traditional Owners, QG, AG, GBRMPA)
EBA7	Identify, test, and, if appropriate, use indicators of Reef-dependent industry viability and its relationship with Reef health as part of the Integrated Monitoring and Reporting Program. (GBRMPA)
On-ground actions	
EBA8	Support the uptake of sustainable practices by Reef dependant and Reef associated industries to limit impacts on the Reef's Outstanding Universal Value. (GBRMPA, QG, AG)
EBA9	Implement the Queensland Ecotourism Plan: 2013-2020. (QG)
EBA10	Establish Priority Port Development Areas at long-established major ports of Port of Abbot Point, Port of Gladstone, Port of Hay Point and Mackay, and Port of Townsville. (QG)
EBA11	Implement commitments for best-practice commercial vessel operation including those aimed at: <ul style="list-style-type: none"> • reducing collisions with marine fauna (AG) • reducing interference with species behaviour (GBRMPA) • undertaking further research and investigate appropriate measures to manage cumulative impacts from shipping. (AG, GBRMPA)
EBA12	Fully vet 100 per cent of all bulk carriers traversing the Great Barrier Reef to an appropriate standard ⁶ by an independent industry endorsed ship-vetting provider. (Industry)

⁶ One suggested method for this is via direct vessel questionnaires as implemented by BHP Billiton and Rio Tinto through Rightship.

EBA13	Encourage industry adoption of vessel assessment activities and approval processes that incorporate key crew competency evaluations to help ensure safe operations and compliance with regional and port requirements. ⁷ (Industry)
Stewardship and community participation	
EBA14	Continue to engage in and support the Gladstone Healthy Harbour Partnership. (AG, QG)
EBA15	Support the North-east Shipping Management Group and the Water-Space Management Group on environment protection measures, preparedness and response protective measures, management of major anchorages, and stakeholder engagement. (AG, GBRMPA, QG)
Research and information management	
EBA16	Identify the risk and associated management measures to deal with impacts of coal dust on the Reef. (AG)

⁷ Recommended standard would be equivalent to Rightship 3 stars or better which would result in all vessels having:

- a) Protected fuel tanks, as designated by MARPOL.
- b) Sewage treatment plants compliant with the MEPC.159 (55) standard.
- c) Tier II or better diesel engines and auxiliaries.
- d) Compliance with applicable Australian biofouling guidelines.

Governance for Plan delivery

Key to maintaining the Outstanding Universal Value of the Reef will be the effective, coordinated delivery of this Plan in partnership with the community. Governance in the context of this Plan relates to implementing the Plan. It builds upon and does not replace the existing statutory and management arrangements that govern protection of the Reef.

Key government initiatives that underpin the Plan include:

- the new Reef Trust initiative
- commitments from the comprehensive strategic assessment process
- the regulatory and policy framework for offset requirements for development that will have an adverse impact on Matters of National Environmental Significance
- the ongoing delivery of an effective on-ground Field Management Program
- continued implementation of the *Reef Water Quality Protection Plan 2013*.

Governance outcome	
The Outstanding Universal Value of the Reef is maintained through effective governance arrangements and coordinated management activities.	
Objectives	
GO1	Governance arrangements for the implementation, review and maintenance of this Plan facilitate effective decision-making.
GO2	The Reef 2050 Long-Term Sustainability Plan underpins decisions by governments, industry and the community about the Reef.
GO3	An adaptive management approach underpins the implementation of this Plan and results in improved governance arrangements and processes.
Targets	
GT1	Implementation, reporting and review of this plan reflects principles such as transparency, ownership, accountability, responsiveness and strong community involvement.
GT2	The vision, outcomes, objectives and targets in this Plan are taken into account in relevant regulation, documents, policies and strategies of all levels of government.
GT3	Actions under the Plan are prioritised and tailored to reflect local or regional differences in risks and opportunities affecting the OUV of the Reef.
GT4	Investment in actions is prioritised using evidence-based risk assessment to maximise benefits for Reef health and resilience.
GT5	A comprehensive integrated monitoring and reporting program is established and operational and the reporting informs the review and improvement of the Plan.

Actions	
Management guidance	
GA1	Establish an Intergovernmental Operational Committee comprising senior officials from the Australian, including the Great Barrier Reef Marine Park Authority, and Queensland governments to oversee the implementation of the Plan, facilitate coordination of Reef related activities and report annually to the Great Barrier Reef Ministerial Forum. (GBRMPA, QG, AG)
GA2	Establish a multi-sectoral Reef Advisory Committee to facilitate engagement with industry and the broader community regarding the implementation and review of the Plan. (GBRMPA)
GA3	Review and update relevant agreements, policies, plans, strategies and programs to support the Plan's outcomes and targets. <ul style="list-style-type: none"> • update the <i>Great Barrier Reef Intergovernmental Agreement 2009</i> to explicitly include OUV • adopt the Reef 2050 Long-Term Sustainability Plan as a schedule to the <i>Great Barrier Reef Intergovernmental Agreement 2009</i> • fund and support ongoing joint field management activities. (QG, AG, GBRMPA, Industry, Regional Bodies, LG)
GA4	Develop an investment baseline and associated investment strategy to inform the future delivery of actions under the Plan. (AG, QG, Partners, GBRMPA)
GA5	Develop, implement, and operate an Integrated Monitoring and Reporting Program to facilitate adaptive management for the Reef. (GBRMPA, QG, AG, Partners)
GA6	Establish a Steering Committee to review, coordinate and align monitoring and reporting activities to inform the development and operation of an Integrated Monitoring and Reporting Program. (GBRMPA)
On-ground actions	
GA7	Develop, implement and maintain mechanisms and policies to enhance investment in delivering on-ground activities that support the Plan's outcomes and targets, and which contribute to a net benefit policy to ensure the Outstanding Universal Value and integrity of the Reef is maintained or enhanced. (AG, QG, GBRMPA, Partners)
Stewardship and community participation	
GA8	Work with industry, regional bodies, local governments, research institutions, and the community to prioritise and develop regionally tailored implementation plans and reporting protocols addressing the Plan's targets and actions. (QG, AG, LG, GBRMPA Industry, NRMs)
GA9	Prioritise and develop sectoral implementation plans and reporting protocols addressing the Plan's targets and actions in consultation with the community. (Industry, AG, QG, LG, GBRMPA, NRMs)
Research and information management	
GA10	Establish an Independent Science Panel with an independent chair to provide advice to the multi-sectoral Reef Advisory Committee and the Intergovernmental Operational Committee regarding the implementation and review of the Plan and associated Integrated Monitoring and Reporting Program. (GBRMPA, QG, AG)

Implementing the Plan

Effective protection of the Reef will require strengthened partnerships between the community, industry and government. Partnerships will deliver improved communication and understanding between various managers, resource users, scientists, government regulators and other stakeholders to support coordinated implementation of improved management activities.

An example of improved outcomes driven by a partnership approach between government and non-government parties is the Healthy Harbour Partnership Program in Gladstone. A number of different bodies and management agencies with individual goals, interests and overlapping jurisdictions made effective management of the harbour's water quality very challenging. The partnership model brought these groups together.

This integrated approach is considered an effective model for application to the implementation of this Plan.

Innovation will be fostered through supporting and using cooperative knowledge systems. This principle acknowledges the value that local, Indigenous and traditional knowledge systems bring to interpreting and understanding the complexity of the Great Barrier Reef ecosystems and heritage values.

Innovation will be further achieved by linking the processes of monitoring and adaptive management. The challenge is to provide continual feedback loops that will enable information-sharing, citizen empowerment and the interpretation and translation of new information into leading practice. Existing community networks and stewardship programs will be central to identifying a structured process of local participation that facilitates shared learning as well as the future identification of locally-relevant targets and actions.

The Intergovernmental Operational Committee will also work with partners to facilitate preparation of more detailed regional and sectoral implementation plans. These will coordinate and guide activities across government and relevant economic sectors to address the actions outlined in the Plan. Implementation plans will prioritise and tailor activities to reflect local, regional or sectoral specific differences in risks and opportunities affecting the Reef. The Intergovernmental Operational Committee will coordinate implementation of the Plan through the Great Barrier Reef Ministerial Forum as the key government decision-making body.

An Investment Strategy covering inputs from governments and partners will also underpin delivery of this Plan.



Gladstone Healthy Harbour Partnership brings together parties (including community, industry, science, government, statutory bodies and management) to maintain, and where necessary, improve the health of Gladstone Harbour.

The guiding principles of the Partnership are open, honest and accountable management; annual reporting of the health of the Gladstone Harbour; and management recommendations and action based on rigorous science and strong stakeholder engagement to ensure the ongoing and continuous improvement in the health of Gladstone Harbour.

The Gladstone Healthy Harbour Partnership makes decisions informed by recommendations from the independent science panel and is responsible for publishing the annual Gladstone Healthy Harbour Report Card.

Partners in the Plan's delivery

- **Regional Natural Resource Management Bodies, Landcare and grassroots community environment organisations** deliver programs and actions at the regional scale, particularly through the development and implementation of natural resource management plans and Water Quality Improvement Plans. These plans include resource condition targets, water quality objectives and ecosystem health objectives for whole catchments that can inform the delivery of the Reef 2050 Long-Term Sustainability Plan at the Reef-wide, regional and local scales.
- Through their statutory responsibilities, **local government** delivers many actions that support the outcomes of the Plan. Local government also works with industry to facilitate economic development and provides significant guidance and support to the community in achieving community aspirations in a coordinated way.
- Most local governments adjacent to the Great Barrier Reef are **Reef Guardian Councils**—these Councils have identified both statutory and non-statutory actions that local government can implement to manage the threats to the Great Barrier Reef and support the community in understanding and appreciating the Reef's value. Actions include improvements in development decisions; preparing and adapting coastal communities to climate change impacts; water quality monitoring and supporting community monitoring programs; major infrastructure upgrades to improve water quality; and implementing local plans that maintain or improve Reef connectivity and integrity.
- **Local Marine Advisory Councils (LMACs)** are dedicated interest groups that advise the Great Barrier Reef Marine Park Authority on local and regional issues that affect the Reef. LMACs lead and support a range of initiatives including actions to repair wetlands, improve water quality, reduce marine debris, promote sustainable use and increase community awareness of issues affecting the Reef.

- **Reef Guardian schools** commit to creating awareness, understanding and appreciation for the Reef and its connected ecosystems. Students team up with others in their community to actively participate in improving ecosystem health (tree planting), water quality (monitoring) and sustainability outcomes (beach debris).
- **Traditional Owners** support the Plan through community-based land and sea partnerships and agreements, such as Traditional Use Marine Resource Agreements and Indigenous Land Use Agreements. Traditional Owners work with a range of partners to monitor biodiversity and ecosystem health, and deliver ecosystem repair projects.
- **Port operators** will manage key environmental values, potential impacts and appropriate avoidance, mitigation and offset measures before new development occurs. Port authorities are also committed to minimising changes in water quality, and are working with partners to inform an integrated approach to water quality monitoring in the Great Barrier Reef.
- The **Department of Defence** has three training areas in the Great Barrier Reef Region: Shoalwater Bay, Cowley Beach and Halifax Bay. The department partners with organisations to conduct biodiversity and ecological community surveys, and manages some of the most intact natural areas in the Great Barrier Reef Region.
- Reef dependant industries, including **tourism and fishing**, rely on a healthy environment for their economic sustainability. These industries implement practices to minimise environmental harm; adapt industry and community to the effects of climate change; and promote understanding and appreciation of the Great Barrier Reef's values.
- Reef associated industries including, **shipping, agriculture and mining**, implement sustainable practices, demonstrate stewardship and contribute to the national economy.
- The **research and scientific community** provides information critical to developing targets and monitoring values and threats across Reef-wide and regional scales. Their expertise is central to evidence-based decision making and a fundamental element of successful adaptive management.

Improving knowledge and management

A comprehensive and up-to-date understanding of the Great Barrier Reef, its values, the processes that support it and the pressures that affect it are fundamental to protecting and restoring the Reef and making informed decisions on avoiding, mitigating and offsetting the pressures. Management arrangements have consistently been and will continue to be underpinned by the best available science.

Knowledge gained through targeted research, scientific monitoring and modelling (including from Environmental Impact Statements), as well as improved public access to this information, can help ensure adaptive management. This is presented in a driver, pressure, state, impact and response framework (Figure 6). This framework is constructed on a set of cause-and-effect relationships where drivers and influencing factors cause pressures that affect the state (or condition) of both the ecological and human systems that make up the environment. The condition of the ecological and human systems has an impact on the benefits derived by the community. Management responses are adapted to reflect changes in all components of the system.

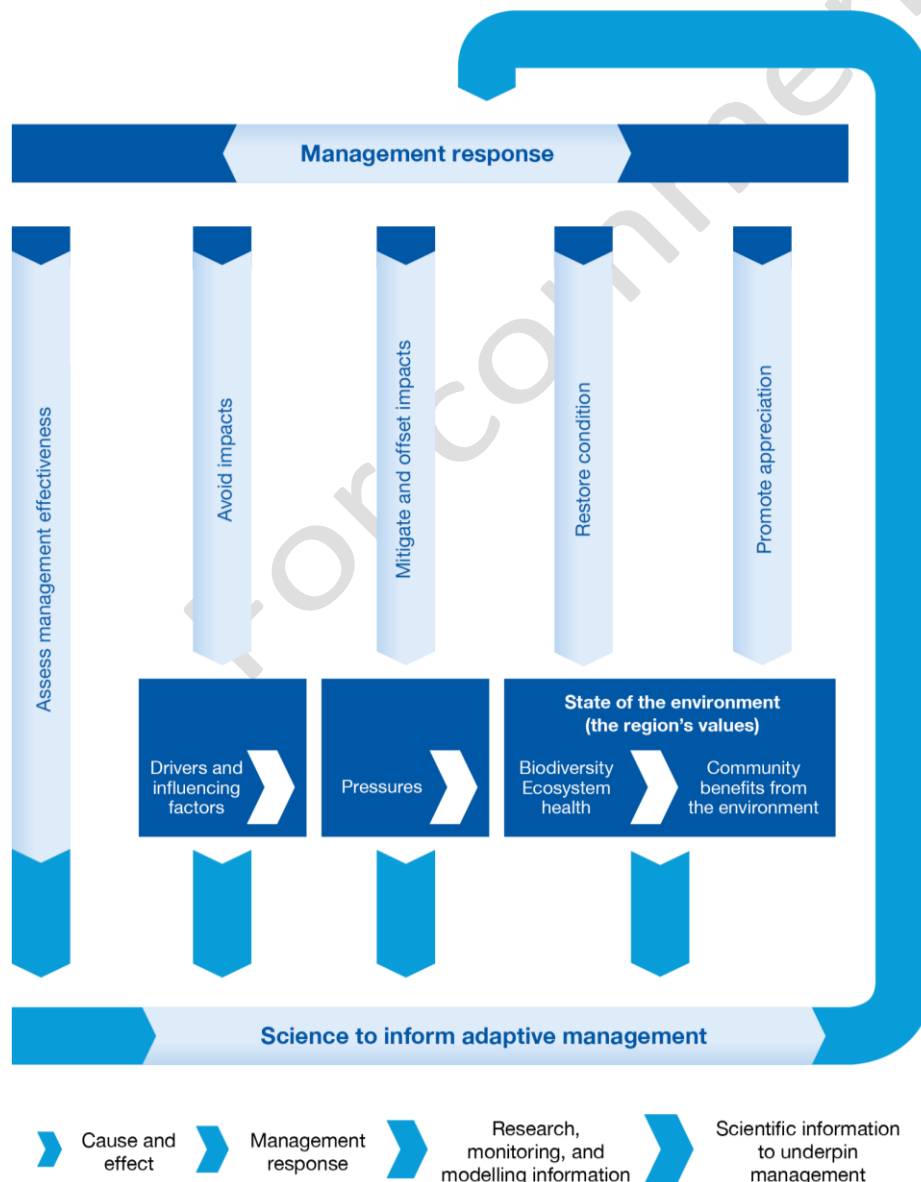


Figure 6: How monitoring, research and modelling informs adaptive management.

To adaptively manage a system as complex as the Great Barrier Reef, each component of the framework and their cause-and-effect links needs to be understood through monitoring, targeted research and modelling. The Integrated Monitoring and Reporting Program is being established to do this. Results will be reviewed against objectives, outcomes and targets, with the results used to adapt management responses.

For comment

Integrated monitoring and reporting program

An Integrated ecological, social and economic Monitoring and Reporting Program will be established to measure and report progress towards the Reef 2050 Long-Term Sustainability Plan's outcomes, objectives and targets. This will contribute to evaluating the success of actions and guide adaptive management.

The program will improve the integration and coordination of existing monitoring programs through the development and implementation of standardised protocols for information collection, collation analysis, reporting, and data availability. It will improve the scalability of data (from point source or local, to regional and Reef-wide scales) and synthesis of information from different sources. This will provide a more comprehensive and systematic understanding of the condition of values and scale of impacts.

The scope will include:

- Building on long-term core monitoring programs (e.g. Paddock to Reef Integrated Monitoring, Modelling and Reporting Program and the Great Barrier Reef Long-Term Monitoring Program)—to assess the condition and trend of the region's values and broadscale impacts, such as water quality, over many years.
- Short to medium-term, issue-specific monitoring—to examine the condition, extent of impact on and recovery rate of species, habitats or community benefits.
- Compliance monitoring—to target the impacts of a development action (e.g. construction of a marina or dredging program) in accordance with conditions specified in a permit, licence or approval.

Over time, consistent reporting of information at a regional scale will help to further refine and target activity. Work is already underway between governments, industry and the community to progressively develop regional scale report cards for priority catchments. This includes the Gladstone Healthy Harbour Partnership, Fitzroy Partnership for River Health, Mackay Whitsunday Healthy Rivers to Reef Partnership and Reef Recovery actions. Further partnerships will be developed in other regional centres and ports to provide finer scale information to the community on ecosystem health.

The program will enhance the interface between knowledge and improvements to support the identification of emerging priorities. It incorporates the knowledge and information of Traditional Owners, industry and the community. It will draw on existing monitoring systems and datasets and will be built on over time.

eReefs

The eReefs project is an initiative of the Great Barrier Reef Foundation and is supported by governments, science organisations and industry. This initiative is closing the gap in modelling from the paddock to the marine environment.

It is building marine hydrodynamic, sediment transport and water quality models, as well as the Water Quality Dashboard, which is an online tool to view satellite marine water quality data, and a system to streamline the production of the Reef Water Quality Protection Plan Report Cards.

Research, modelling and monitoring will be used to improve the understanding of the system and the cause and effect relationships that drive or impact upon the system. This will strengthen the adaptive management response (or continuous improvement).

Overall coordination and management of the Integrated Monitoring and Reporting Program will be the responsibility of the Great Barrier Reef Marine Park Authority and reported annually to the Great Barrier Reef Ministerial Forum. Future reporting, including Great Barrier Reef Outlook Reports and Australian and Queensland State of Environment Reports, will inform progress towards achieving Reef 2050 Long-Term Sustainability Plan outcomes, including condition and trend information for each theme.

Integrated Monitoring and Reporting Program

The Integrated Monitoring and Reporting Program will be based on existing monitoring programs, which are expected to continue under existing funding arrangements during the establishment phase.

2014-2015

- Governance and partnership arrangements with stakeholders established.
- Monitoring objectives set to support Reef 2050 Long-Term Sustainability Plan outcomes and targets and supporting monitoring programs identified.
- In-principle agreement on data management and synthesis.
- Initial scoping and development of conceptual models to underpin program design including indicator selection.

2015-2016

- Policies and procedures for an agreed data management model, including commitment from all partners completed.
- Conceptual models and selected indicators refined and a suite of sub-programs for initial implementation recommended.
- Synthesis requirements for a fully integrated program agreed.
- Annual and five yearly reporting frameworks agreed.

2016-2017

- Design of the suite of monitoring sub-programs, including data analysis and synthesis products is finalised.
- All aspects of the Integrated Monitoring and Reporting Program are operationalised.

Reporting on the Plan

An annual report on the implementation of the Plan will be provided to the Ministerial Forum and made available to the public. This report will be prepared by the Australian Government Department of the Environment, Great Barrier Reef Marine Park Authority and the relevant Queensland Government Departments. It will assess performance in achieving the Plan's outcomes and progress towards the targets and actions. In the first five years of the Plan, this will include the completion of key activities in the Implementation Plan such as the development of the Integrated Monitoring and Reporting Program.

The preparation of the annual report will be overseen by the Intergovernmental Operational Committee and will be informed by the activities of partners who have committed to delivering actions under the Plan. Lead organisations as well as contributing partners will be responsible for periodic progress reporting.

Reviewing the Plan

The dynamic and complex nature of the Great Barrier Reef ecosystem, the pace of change in factors affecting it, and the need to improve knowledge about both the ecosystem and impacts on it require flexibility and an adaptive approach to management.

A mid-term review (three-year) will be undertaken to assess effectiveness and efficiency of actions to inform the preparation of the five-yearly revision of the Plan. This substantive assessment on the implementation of the Plan will be in line with the broader assessment on the implementation of the Great Barrier Reef Intergovernmental Agreement.

The review will be informed by the existing Great Barrier Reef Marine Park Authority Outlook Reporting process, which is a statutory assessment and reporting requirement under the Great Barrier Reef Marine Park Act 1975. The next Outlook Report is due to be completed in 2019. The first five-year review of the Plan will be 12 months after the Outlook Report is released. Actions and priorities within the Plan are anticipated to change following the review process. Each review cycle will be informed by improved scientific understanding, the incorporation of diverse knowledge systems and community views.

The Ministerial Forum will be the key decision-making body for instigating the review of the Reef 2050 Long-Term Sustainability Plan following consideration of each subsequent Outlook Report. The forum may consider information from other sources to inform the review of the Plan. This includes the views of partners and scientific and government advice.

Glossary of commonly used terms and acronyms

Adaptive management: a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs.

AG: Australian Government

AIMS: Australian Institute of Marine Science

AMPTO: Association of Marine Park Tourism Operators

AMSA: Australian Maritime Safety Authority

Biodiversity: the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (Convention on Biodiversity – Article 2. Use of terms)

Burra Charter: the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance, known as the Burra Charter, is a set of principles adopted to create a nationally accepted standard for heritage conservation practice in Australia.

Coastal ecosystem: inshore, coastal and adjacent catchment ecosystems that connect the land and sea and have the potential to influence the health and resilience of the Great Barrier Reef.

Community benefits of the environment: cultural, social and economic benefits such as employment, income, understanding, appreciation, enjoyment, personal connection, health benefits and access to Reef resources. (Great Barrier Reef Outlook Report 2014)

Comprehensive strategic assessment: comprises the strategic assessment of the GBRWHA by the GBRMPA and the strategic assessment of the GBR coastal zone by the Queensland Government. These are described under Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999*. The comprehensive strategic assessment was developed in response to recommendations of the UNESCO World Heritage Committee and the outcomes have informed this Plan.

Condition: the 'health' of a species or ecosystem, which includes factors such as the level of disturbance from a natural state, population size, genetic diversity, and interaction with invasive species and diseases. (State of the Environment Reporting, Department of the Environment)

(Good condition): a species or ecosystem would generally be considered to be in good condition when the level of exposure to anthropogenic pressures has little effect on its status and resilience. In application the following definitions will be used to develop quantitatively assessable targets (adapted from Great Barrier Reef Outlook Report 2014):

- **For habitats,** 'good' means some degradation or alteration may exist in some small areas, leading to minimal degradation but no persistent, substantial effects on populations of dependent species.
- **For species,** 'good' means most populations of species show no significant deterioration as a result of human activities or declining environmental conditions.
- **For processes,** 'good' means that some changes in processes as a result of human activities may have occurred in some areas, but these are not to the extent that they are significantly affecting ecosystem functions.

Condition indicators:

- Cover or biomass or abundance of key species or species groups in each ecosystem
- Status and trend in the above.

Connectivity: the extent to which a species or population can move among landscape elements in a mosaic of habitat types.

Conserved: to keep in a safe or sound state, preserve from loss, keep unimpaired.

Cooperative knowledge system: incorporates local, Indigenous and traditional knowledge of the GBR and its ecosystems.

Dredging: digging, excavating or removing material from waterways to deepen channels, create harbours, and keep channels and approaches to ports at defined depths. Dredging can either be capital dredging, for new channels and berths, or maintenance dredging, necessary to maintain existing and approved dredging areas. (Queensland Ports Association Fact Sheet, November 2013)

Ecologically sustainable development: conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased. (National Strategy for Ecologically Sustainable Development – Commonwealth Department of the Environment)

Ecosystem: a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. (Biodiversity Convention)

Ecosystem functions: the interactions between organisms and physical environment, such as nutrient cycling, soil development and water budgeting. (GBRMPA Outlook Report 2014)

GBR: Great Barrier Reef

GBRMPA: Great Barrier Reef Marine Park Authority

GBRWHA: Great Barrier Reef World Heritage Area

Great Barrier Reef (the Reef): in this document the Great Barrier Reef or the Reef, is taken to mean the Great Barrier Reef World Heritage Area.

Great Barrier Reef Intergovernmental Agreement: an agreement between the Commonwealth of Australia and the State of Queensland relating to the protection and management of the Great Barrier Reef. The agreement was signed in 2009 by the Prime Minister of the Commonwealth of Australia and the Premier of the State of Queensland.

Great Barrier Reef Ministerial Forum: oversees implementation of the GBR Intergovernmental Agreement 2009.

Great Barrier Reef Region: the area described in Schedule 1 of the *Great Barrier Reef Marine Park Act 1975*.

Healthy waters management plan: the Environmental Protection (Water) Policy 2009 establishes Healthy Waters Management Plans (HWMPs) as a key planning mechanism to improve the quality of Queensland waters. Matters to be addressed in a HWMP include identifying issues that affect

aquatic ecosystems, waterway uses and values, management goals and water quality objectives to protect values, and ways to monitor and assess the effectiveness of the protection. WQIPs can inform the development of a HWMP.

Historic heritage: includes places associated with the non-Indigenous cultural heritage of Australia encompassed in the country's history. It can include buildings, monuments, gardens, industrial sites, landscapes, cultural landscapes, archaeological sites, groups of buildings and precincts, or places which embody a specific cultural or historic value. It is important to note that equipment, furniture, fittings and articles associated or connected with a building or structure are included in the definition of place under the Act. Historic places tell us about national and social developments in Australia over the past few centuries, technical and creative achievements, and provide a tangible link to past events, processes and people. (Source: GBRMPA Heritage Strategy 2005)

Human-related causes: human impact on the environment and associated effects of these changes and adaptations.

Indigenous heritage: includes all places that are part of Aboriginal and Torres Strait Islander peoples' spiritual links to the land or which tell the story of Indigenous peoples from time immemorial to the present. It can include sacred sites, ceremonial sites like bora rings and rock art, fish traps, burials, middens, scarred trees, camp sites and semi/permanent settlements. (Source: GBRMPA Heritage Strategy 2005)

Integrity: for World Heritage properties, integrity relates to the 'wholeness and intactness' of the property and how it conveys the values it holds. Integrity can also relate to the size of the property (sufficient size to continue to represent the values) and to any threats affecting the property.

JCU: James Cook University

Landscape: describes how societies shape the land and are in turn, shaped by it. Local, Indigenous or traditional knowledge systems bridge the gap between biological and cultural diversities and guide the development of landscapes. Article 8(j) of the Convention on Biological Diversity gives particular recognition to this cultural dimension of biodiversity, as do all of UNESCO's cultural conventions. (Source: Convention on Biodiversity; UNESCO Declaration on Cultural Diversity)

Leading practice: a process or practice that is known to be highly efficient or effective and has been adopted by a range of industry leaders.

Listed species: includes the following –

- A migratory species that is native or is included under a relevant international convention, which has been included by the Minister on the published list of migratory species. (Adapted from the EPBC Act)
- A native species which is extinct, extinct in the wild, critically endangered, endangered, vulnerable or conservation dependent, as set out in the published list of threatened species established by the Federal Environment Minister. (Adapted from EPBC Act)
- A native species which is extinct in the wild, endangered, vulnerable, near threatened or least concern, as prescribed by the Queensland Environment Minister. (Adapted from NC Act)

LG: Local government

LGAQ: Local Government Association of Queensland

Local ecological knowledge and practices: a vital reservoir of experience, methods and skills that help different societies to manage their resources. (Source: Convention on Biodiversity; UNESCO Declaration on Cultural Diversity)

Management objective: a clear description of management intent that flows directly from the stated and desired outcome.

MNES: Matters of National Environmental Significance protected under the *Environment Protection and Biodiversity Act 1999*.

Net benefit: the purpose of net benefits is to enhance the condition of Matters of National Environmental Significance, including the Reefs Outstanding Universal Value. While offsets are focussed on addressing residual impacts associated with development actions, net benefits are focussed on delivering actions (above and beyond offset actions) which will restore or improve the Great Barrier Reef to a good condition.

NRMs: Natural Resource Management organisations.

Objective: medium-term goal that will contribute to achieving the outcome for each theme and vision for the Reef by 2050.

Outcome: an overall statement of what is expected to be achieved for each theme by 2050, which will collectively contribute to achieving the vision for the Reef.

Outstanding Universal Value: Outstanding Universal Value is the central concept of the World Heritage Convention. Its meaning follows the common sense interpretation of the words:

- **Outstanding:** For properties to be of outstanding universal value they should be exceptional, or superlative—they should be the most remarkable places on earth.
- **Universal:** Properties need to be outstanding from a global perspective. World heritage does not aim to recognise properties that are remarkable from solely a national or regional perspective. Countries are encouraged to develop other approaches to recognise these places. Australia does this through the national heritage listing process.
- **Value:** What makes a property outstanding and universal is its "value", or the natural and/ or cultural worth of a property. This value is determined based on standards and processes established under the World Heritage Convention's Operational Guidelines.

QG: Queensland Government.

Regional: refers to the scale of the Natural Resource Management (NRM) regional bodies which lie within the Reef catchment, unless referring specifically to the Great Barrier Reef Region (the Region), which is shown in Figure 1.

Reef: Great Barrier Reef World Heritage Area.

Reef associated industry: industries located in the Reef or its catchments that are not directly dependent on the Reef for their economic sustainability, for example, ports, construction, agriculture, forestry, shipping and mining.

Reef dependent industry: industries whose economic benefit is derived from the Reef's natural resources, either through extraction of those resources or through tourism and recreation focused on its ecosystem and heritage values (GBRMPA's Outlook Report 2014).

Reef Plan: The Reef Water Quality Protection Plan 2013. 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.

Reef Trust: joint Australian and Queensland Government program to deliver funding to address key threats to the Reef such as nutrient run-off, crown-of-thorns starfish and species protection. The Reef Trust includes initial investment of \$40 million by the Australian Government. (Adapted from Reef Trust Discussion Paper, Commonwealth Department of the Environment)

Resilience indicators: these incorporate and build on existing Marine Monitoring Program and Reef Plan report card indicators for key ecosystems and species and include:

- a. Resistance to perturbations
 - Health/stress indicators such as disease, physiological/molecular stress indicators, C:N ratios and epiphyte loads in seagrass, etc.
 - Trophic structure
 - Presence/abundance of out-breaking pest species
- b. Recovery from perturbations
 - Recently recorded rates of recovery from perturbations such as cyclones
 - Rates of reproduction and recruitment
 - Size/age frequency ratios.

Riparian: relating to, or situated on, the bed and banks of a river or watercourse.

Significant impact: an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts (EPBC Act).

SMART: Specific, Measurable, Achievable, Realistic, Time-bound.

Target: a measure for assessing progress and documenting success. Within the context of this Plan, targets are short term goals that will contribute to achieving the objectives for each theme.

Viable population: the number of individuals required for a high probability of survival of a population over a given period of time.

Vision: common goal that describes what Australians, as custodians for the international community, want the future of the Reef to be. The vision for the Reef will be achieved by 2050 through delivery of the actions, targets, objectives and outcomes of this Plan.

Water quality: refers to the chemical, physical, biological, and radiological characteristics of water. It is a measure of the condition of water relative to the requirements of one or more biotic species and or to any human need or purpose.

WQIP: Water Quality Improvement Plans are designed to identify the main issues that impact aquatic ecosystems from land-based activities and prioritise management actions to reduce the discharge of pollutants within a natural resource management region. WQIPs are non-legislative regional planning instruments and can inform the development of Healthy Waters Management Plans.

World Heritage Convention: a global instrument for the protection of cultural and natural heritage that aims to promote cooperation among nations to protect heritage around the world that is of such outstanding universal value that its conservation is important for current and future generations.

For comment

Appendix A: Statement of Outstanding Universal Value for the Great Barrier Reef World Heritage Area

Outstanding Universal Value of the Great Barrier Reef World Heritage Area

Criterion (vii): The Great Barrier Reef is of superlative natural beauty above and below the water, and provides some of the most spectacular scenery on earth. It is one of a few living structures visible from space, appearing as a complex string of Reefal structures along Australia's northeast coast.

From the air, the vast mosaic patterns of Reefs, islands and coral cays produce an unparalleled aerial panorama of seascapes comprising diverse shapes and sizes. The Whitsunday Islands provide a magnificent vista of green vegetated islands and spectacular sandy beaches spread over azure waters. This contrasts with the vast mangrove forests in Hinchinbrook Channel, and the rugged vegetated mountains and lush rainforest gullies that are periodically cloud-covered on Hinchinbrook Island.

On many of the cays there are spectacular and globally important breeding colonies of seabirds and marine turtles, and Raine Island is the world's largest green turtle breeding area. On some continental islands, large aggregations of over-wintering butterflies periodically occur.

Beneath the ocean surface, there is an abundance and diversity of shapes, sizes and colours; for example, spectacular coral assemblages of hard and soft corals, and thousands of species of Reef fish provide a myriad of brilliant colours, shapes and sizes. The internationally renowned Cod Hole near Lizard Island is one of many significant tourist attractions. Other superlative natural phenomena include the annual coral spawning, migrating whales, nesting turtles, and significant spawning aggregations of many fish species.

Criterion (viii): The Great Barrier Reef, extending 2,000 kilometres along Queensland's coast, is a globally outstanding example of an ecosystem that has evolved over millennia. The area has been exposed and flooded by at least four glacial and interglacial cycles, and over the past 15,000 years Reefs have grown on the continental shelf.

During glacial periods, sea levels dropped, exposing the Reefs as flat-topped hills of eroded limestone. Large rivers meandered between these hills and the coastline extended further east. During interglacial periods, rising sea levels caused the formation of continental islands, coral cays and new phases of coral growth. This environmental history can be seen in cores of old massive corals.

Today the Great Barrier Reef forms the world's largest coral Reef ecosystem, ranging from inshore fringing Reefs to mid-shelf Reefs, and exposed outer Reefs, including examples of all stages of Reef development. The processes of geological and geomorphological evolution are well represented, linking continental islands, coral cays and Reefs. The varied seascapes and landscapes that occur today have been moulded by changing climates and sea levels, and the erosive power of wind and water, over long time periods.

One-third of the Great Barrier Reef lies beyond the seaward edge of the shallower Reefs; this area comprises continental slope and deep oceanic waters and abyssal plains.

Criterion (ix): The globally significant diversity of Reef and island morphologies reflects ongoing geomorphic, oceanographic and environmental processes. The complex cross-shelf, longshore and vertical connectivity is influenced by dynamic oceanic currents and ongoing ecological processes such as upwellings, larval dispersal and migration.

Ongoing erosion and accretion of coral Reefs, sand banks and coral cays combine with similar processes along the coast and around continental islands. Extensive beds of *Halimeda* algae represent active calcification and accretion over thousands of years.

Biologically the unique diversity of the Great Barrier Reef reflects the maturity of an ecosystem that has evolved over millennia; evidence exists for the evolution of hard corals and other fauna. Globally significant marine faunal groups include over 4,000 species of molluscs, over 1,500 species of fish, plus a great diversity of sponges, anemones, marine worms, crustaceans, and many others. The establishment of vegetation on the cays and continental islands exemplifies the important role of birds, such as the Pied Imperial Pigeon, in processes such as seed dispersal and plant colonisation.

Human interaction with the natural environment is illustrated by strong ongoing links between Aboriginal and Torres Strait Islanders and their sea-country, and includes numerous shell deposits (middens) and fish traps, plus the application of story places and marine totems.

Criterion (x): The enormous size and diversity of the Great Barrier Reef means it is one of the richest and most complex natural ecosystems on earth, and one of the most significant for biodiversity conservation. The amazing diversity supports tens of thousands of marine and terrestrial species, many of which are of global conservation significance.

As the world's most complex expanse of coral Reefs, the Reefs contain some 400 species of corals in 60 genera. There are also large ecologically important inter-Reefal areas. The shallower marine areas support half the world's diversity of mangroves and many seagrass species. The waters also provide major feeding grounds for one of the world's largest populations of the threatened dugong. At least 30 species of whales and dolphins occur here, and it is a significant area for humpback whale calving.

Six of the world's seven species of marine turtle occur in the Great Barrier Reef. As well as the world's largest green turtle breeding site at Raine Island, the Great Barrier Reef also includes many regionally important marine turtle rookeries.

Some 242 species of birds have been recorded in the Reef. Twenty-two seabird species breed on cays and some continental islands and some of these breeding sites are globally significant; other seabird species also utilize the area. The continental islands support thousands of plant species, while the coral cays also have their own distinct flora and fauna.

Appendix B: A methodology to benchmark the outstanding universal value of the Great Barrier Reef World Heritage Area for condition and trend

Benchmarking the outstanding universal value of the Great Barrier Reef World Heritage Area

The assessments presented in this table are based on the same information used to assess current condition and trend in Sections 7.1 to 7.5 of the Great Barrier Reef Strategic Assessment. The references listed there also apply to this assessment.

Understanding the table			
<p>Very good: All elements necessary to maintain the outstanding universal value are essentially intact, and their overall condition is stable or improving. Available evidence indicates only minor, if any, disturbance to this element of outstanding universal value.</p>	<p>Good: Some loss or alteration of the elements necessary to maintain the outstanding universal value has occurred, but their overall condition is not causing persistent or substantial effects on this element of outstanding universal value.</p>	<p>Poor: Loss or alteration of many elements necessary to maintain outstanding universal value has occurred, which is leading to a significant reduction in this element of the outstanding universal value.</p>	<p>Very poor: Loss or alteration of most elements necessary to maintain the outstanding universal value has occurred, causing a major loss of the outstanding universal value.</p>
<p>Area (See Chapter 1, Figure 1.1)</p> <p>GBR Great Barrier Reef Region</p>	<p>Trends</p> <p>↑ Improving</p> <p>↔ Stable</p> <p>↓ Deteriorating</p> <p>— No clear trend</p>	<p>Confidence in condition and trend</p> <p>● Adequate high-quality evidence and high level of consensus</p> <p>◐ Limited evidence or limited consensus</p> <p>○ Very limited evidence, assessment based on anecdotal information</p>	

FOI

- a) **Natural beauty and phenomena (previously criterion (iii) now criterion (vii)):** contains unique, rare or superlative natural phenomena, formations or features or areas of exceptional natural beauty, such as superlative examples of the most important ecosystems to man.

	Condition and trend			
	Very good	Good	Poor	Very poor
Overview: 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 natural beauty of large areas remains intact, especially for offshore coral reefs in the far north and aerial vistas, as well as for neighbouring islands (many of which are national parks). While many of the natural phenomena remain intact, others are likely to have deteriorated; for example, some turtle nesting locations and coral spawning.	GBR	↓		

Excerpt from statement	Comment	Condition and trend				Confidence
		Very good	Good	Poor	Very poor	
<i>Superlative natural beauty above and below the water</i>	The natural beauty of most of the Region remains intact, especially for offshore coral reefs and aerial vistas, as well as for neighbouring islands. The significant loss of coral cover has reduced underwater aesthetic value.	GBR	↓			●
<i>Some of the most spectacular scenery on Earth</i>	Both above and below the water, the Region's scenery remains spectacular. There have been some declines in the aesthetics of inshore reefs in the southern two-thirds.	GBR	↓			●
<i>One of a few living structures visible from space</i>	The Reef remains visible from space and technological advances make these images more accessible.	GBR	↔			●
<i>A complex string of reefal structures along Australia's north-east coast</i>	Reefal structures remain intact. Recent estimates vastly increase the extent of coral with the identification of more deepwater reefs.	GBR	↔			●
<i>Unparalleled aerial panorama of seascapes comprising diverse shapes and sizes</i>	Aerial vistas remain spectacular, with scenic flights a popular tourism activity.	GBR	↔			●
<i>Whitsunday Islands provide a magnificent vista of green vegetated islands and white sandy beaches spread over azure waters</i>	The majority of the Whitsunday Islands are protected and managed as national parks. There have been some changes to island scenery, such as on resort islands.	GBR	↔			●

Excerpt from statement	Comment	Area	Condition and trend				Confidence
			Very good	Good	Poor	Very poor	
<i>Vast mangrove forests in Hinchinbrook Channel, or the rugged vegetated mountains and lush rainforest gullies</i>	All of Hinchinbrook Island is protected and managed as a national park. Patches of mangrove forests and rainforest were affected by cyclone Yasi.	GBR	↔				●
<i>On many of the cays there are spectacular and globally important breeding colonies of seabirds and marine turtles</i>	There have been serious declines in some populations of seabirds and some marine turtle species.	GBR			↓		●
<i>Raine Island is the world's largest green turtle breeding area</i>	Long-term data indicates that, since the mid-1970s, green turtle nesting on Raine Island has increased and then plateaued over the past two decades. It is thought to have declined recently.	GBR			↔		●
<i>Beneath the ocean surface, there is an abundance and diversity of shapes, sizes and colours... Spectacular coral assemblages of hard and soft corals</i>	Since 1986, average hard coral cover is estimated to have declined from 28 to 13.8 per cent, principally in the southern two-thirds of the Region. This is mainly due to storm damage (48 per cent), crown-of-thorns starfish (42 per cent), and bleaching (10 per cent).	GBR			↓		●
<i>Thousands of species of reef fish provide a myriad of brilliant colours, shapes and sizes</i>	There are about 1500 species of bony fish. Long-term monitoring of about 200 species of coral reef fish has not detected declines in the species monitored. A small number of targeted species are under significant pressure.	GBR	↔				●
<i>The internationally renowned Cod Hole is one of many significant tourist attractions</i>	There is anecdotal evidence of severe declines in the number and condition of potato cod at Cod Hole.	GBR			↓		◐
<i>Superlative natural phenomena include the annual coral spawning, migrating whales, nesting turtles, and significant spawning aggregations of many fish species</i>	The number of migrating humpback whales is increasing. Nesting numbers have declined for at least two of the six species of marine turtle. Protection for fish spawning aggregations has improved, but most sites are unknown.	GBR		—			●

b) Major stages of the Earth’s evolutionary history (previously criterion (i) now criterion (viii)):
 outstanding examples representing the major stages of the Earth’s evolutionary history

	Area	Condition and trend			
		Very good	Good	Poor	Very poor
<p>Overview: The Region remains a globally outstanding example of an ecosystem that has evolved over millennia, and almost all geomorphological evolutionary processes remain intact. Examples of all stages of reef development remain, although the overall health of reefs, especially in the southern two-thirds, has declined significantly.</p>	GBR				

Excerpt from statement	Comment	Area	Condition and trend				Confidence
			Very good	Good	Poor	Very poor	
<i>Globally outstanding example of an ecosystem that has evolved over millennia</i>	The Reef remains an outstanding example of evolutionary history. Recent research has identified deepwater reefs that extend for hundreds of kilometres along the outer shelf at between 40 and 70 metres depth.	GBR					
<i>Area has been exposed and flooded by at least four glacial and interglacial cycles, and over the past 18,000 years reefs have grown on the continental shelf</i>	The deepwater reefs are providing valuable records of past coral reef responses to climate and sea level change.	GBR					
<i>Today, the Great Barrier Reef forms the world’s largest coral reef ecosystem... Including examples of all stages of reef development</i>	The Great Barrier Reef remains the world’s largest coral reef ecosystem and, while its condition has deteriorated, it remains one of the world’s most healthy reef systems, including examples of all stages of reef development.	GBR					
<i>Processes of geological and geomorphological evolution are well represented, linking continental islands, coral cays and reefs</i>	Geomorphological features and processes are well represented. Most remain in good condition but some processes are declining, especially in the inshore southern two-thirds.	GBR					
<i>The varied seascapes and landscapes that occur today have been moulded by changing climates and sea levels, and the erosive power of wind and water, over long time periods</i>	The impacts of modern climate change are beginning to have effects on seascapes; for example, through reduced reef building.	GBR					
<i>One-third of the Great Barrier Reef lies beyond the seaward edge of the shallower reefs (and) comprises continental slope and deep oceanic waters and abyssal plains</i>	Evidence of cold water coral communities has been found on deepwater knolls along the edge of the Great Barrier Reef at depths of more than 1000 metres, but these deep areas are hardly known.	GBR					

c) **Ecological and biological processes (previously criterion (ii) now criterion (ix)):** outstanding examples representing significant ongoing geological processes, biological evolution and man’s interaction with his natural environment

	Condition and trend			
	Very good	Good	Poor	Very poor
<p>Overview: Many ecosystem processes remain in good condition; however some, such as recruitment and reef building, are declining. Any processes associated with species groups that are in decline (for example, corals and seagrasses) have likely also declined. In the inshore southern two-thirds, there are particular concerns about some processes such as connectivity, nutrient cycling and sedimentation, principally associated with land-based activities in the catchment. Traditional Owners maintain their cultural practices and customs; however, Indigenous heritage values are under pressure, especially in the southern two-thirds of the Region.</p>	GBR			

Excerpt from statement	Comment	Area	Condition and trend				Confidence
			Very good	Good	Poor	Very poor	
<i>Significant diversity of reef and island morphologies reflects ongoing geomorphic, oceanographic and environmental processes</i>	There remains a diverse range of reef and island morphologies. Most geomorphic, oceanographic and environmental processes remain in good condition, but some are declining, especially in the inshore southern two-thirds.	GBR					
<i>Complex cross-shelf, longshore and vertical connectivity is influenced by dynamic oceanic currents</i>	Most marine species and habitats are thought to remain well connected. There is increasing evidence of intensified flow and accelerated warming in the East Australian Current.	GBR					
<i>Ongoing ecological processes such as upwellings, larval dispersal and migration</i>	Ecological processes remain in good condition in northern areas. Some processes are in poor condition inshore in the southern two-thirds of the Region and are deteriorating.	GBR					
<i>Ongoing erosion and accretion of coral reefs, sand banks and coral cays combine with similar processes along the coast and around continental islands</i>	Reef building is likely to be in good condition for much of the Region, especially in the north, but has been affected by cyclones and reduced coral cover, especially in the southern two-thirds of the Region.	GBR					
<i>Extensive beds of Halimeda algae represent active calcification and accretion over thousands of years</i>	<i>Halimeda</i> beds are poorly studied, but are likely to be in very good condition given their isolation from land-based impacts and level of protection from trawling.	GBR					

Excerpt from statement	Comment	Area	Condition and trend				Confidence
			Very good	Good	Poor	Very poor	
<i>Biologically, the unique diversity of the Great Barrier Reef reflects the maturity of an ecosystem that has evolved over millennia; evidence exists for the evolution of hard corals and other fauna</i>	The diversity of species remains high, but some species are in poor condition, especially inshore in the southern two-thirds of the Region.	GBR					
<i>Vegetation on the cays and continental islands exemplifies the important role of birds...in seed dispersal and plant colonisation</i>	Many islands are national parks or protected within the Marine Park. There are introduced plants on most islands.	GBR					
<i>Human interaction with the natural environment is illustrated by strong ongoing links between Aboriginal and Torres Strait Islanders and their sea country, and includes numerous shell deposits (middens) and fish traps, plus the application of story places and marine totems</i>	Traditional Owners with connections to the Great Barrier Reef maintain their cultural practices and customs. Indigenous heritage is under pressure, especially in the southern two-thirds of the Region.	GBR					

For comment

d) Habitats for conservation of biodiversity (previously criterion (iv) now criterion (x)): habitats where populations of rare or endangered species of plants and animals still survive

	Area	Condition and trend			
		Very good	Good	Poor	Very poor
<p>Overview: There are significant concerns about some key habitats, particularly coral reefs and seagrass meadows, the latter of which is significant for species such as dugong and turtles. Many of the key habitats and species, for which the Great Barrier Reef was inscribed on the World Heritage List (coral reefs, seagrasses, islands, open waters, dugongs, turtles, whales, dolphins and seabirds) are in poor and declining condition, especially in the southern two-thirds of the property. The concerns are not as great in far northern areas, which remain relatively intact. Populations of humpback whales, estuarine crocodiles, loggerhead turtles and green turtles (southern stock) are recovering from historical declines. There have been no records of species extinction, although there is concern that spartooth shark has not been recorded in or near the Region since 1982.</p>	GBR				

Excerpt from statement	Comment	Area	Condition and trend				Confidence
			Very good	Good	Poor	Very poor	
<p><i>One of the richest and most complex natural ecosystems on Earth, and one of the most significant for biodiversity conservation</i></p>	<p>The Great Barrier Reef remains a complex ecosystem, rich in biodiversity. Some key habitats are under pressure, especially in southern inshore areas.</p>	GBR					
<p><i>Tens of thousands of marine and terrestrial species, many of which are of global conservation significance</i></p>	<p>Some populations (dugong, sharks, seabirds and marine turtles) are known to have declined. Others such as humpback whales, loggerhead turtles and estuarine crocodiles are increasing.</p>	GBR					
<p><i>The world's most complex expanse of coral reefs...Contain some 400 species of corals in 60 genera</i></p>	<p>Although there is no published evidence of loss of species associated with coral reefs, there has been a serious decline in hard coral cover and deterioration of coral reef habitats in the southern two-thirds of the Region.</p>	GBR					
<p><i>Large ecologically important interreefal areas. The shallower marine areas support half the world's diversity of mangroves</i></p>	<p>The Region's mangrove forests remain very diverse with at least 39 mangrove species and hybrids recorded.</p>	GBR					
<p><i>Large ecologically important interreefal areas. The shallower marine areas support...many seagrass species</i></p>	<p>Seagrass diversity remains; however, there have been recent severe declines in abundance and community composition in the inshore southern two-thirds of the Region.</p>	GBR					
<p><i>Waters also provide major feeding grounds for one of the world's largest populations of</i></p>	<p>The dugong population in northern areas remains robust. The population in the</p>						

Excerpt from statement	Comment	Area	Condition and trend				Confidence
			Very good	Good	Poor	Very poor	
<i>the threatened dugong</i>	southern two-thirds of the Region was very low at the time of listing, and remains so. Declines in the condition of seagrass meadows have had profound effects on dugongs in recent years.	GBR					
<i>At least 30 species of whales and dolphins occur here</i>	Little is known about the populations of most whale species. Two inshore dolphin species are known to be at risk.	GBR					
<i>A significant area for humpback whale calving</i>	The humpback whale population is recovering strongly after being decimated by whaling. The calving habitats are well protected.	GBR					
<i>Six of the world's seven species of marine turtle occur in the Great Barrier Reef. As well as the world's largest green turtle breeding site at Raine Island, the Great Barrier Reef also includes many regionally important marine turtle rookeries</i>	Of the habitats that support marine turtles, the condition of seagrass meadows and coral reefs have declined significantly. While nesting habitats are generally in good condition, sea level rise, increasing air temperature and extreme weather events are affecting their condition.	GBR					
<i>Some 242 species of birds have been recorded in the Great Barrier Reef. Twenty-two seabird species breed on cays and some continental islands, and some of these breeding sites are globally significant</i>	While the nesting habitats for seabirds remain in generally good condition, declines of up to 70 per cent in some nesting populations have been recorded. There is evidence this may relate to reduced availability of pelagic prey.	GBR					
<i>The continental islands support thousands of plant species, while the coral cays also have their own distinct flora and fauna</i>	Plant diversity is generally well protected, with about one-third of the islands contained within national parks.	GBR					

Benchmarking the integrity of the Great Barrier Reef World Heritage Area

Based on the extent to which the property meets the criteria set out in the *World Heritage Convention Operational Guidelines*.

	Area	Condition and trend			
		Very good	Good	Poor	Very poor
<p>Overview: The Great Barrier Reef is the world's third largest World Heritage Area and encompasses all but the most northerly part of the Great Barrier Reef ecosystem. Except for small exclusions, it is all within a marine protected area and is, therefore, afforded a high level of direct protection and management. External pressures such as climate change, catchment run-off and coastal development are affecting its overall integrity.</p>	GBR				

	Area	Condition and trend				Confidence	
		Very good	Good	Poor	Very poor	Condition	Trend
<p>Includes all elements necessary to express its outstanding universal value: The Great Barrier Reef meets all four natural criteria. While some ecosystems, habitats and populations are under pressure, the elements remain largely intact, particularly in the northern third of the Region.</p>	GBR						
<p>Is of adequate size to ensure the complete representation of the features and processes which convey the property's significance: The Great Barrier Reef Region is vast, covering 14 degrees of latitude and extending 80 to 250 kilometres from the coast. Except for some small exclusions and about 600 of the 1050 islands, almost all of the World Heritage Area is within marine or national parks and is, therefore, afforded a high level of protection and management. While it is of adequate size to ensure complete representation of features and processes, increasing pressures from outside the Region are affecting them.</p>	GBR						
<p>Is protected from the adverse effects of development and/or neglect: While activities within the property are comprehensively managed and use is generally sustainable, the remoteness of some of the property poses challenges for managing agencies. This, and previous assessments, have demonstrated that the most significant impacts on the property's values arise from external pressures such as climate change, catchment run-off and coastal development. In the southern two-thirds of the Region, where there are greater levels of development, the condition and trend of some values are in decline.</p>	GBR						

Appendix C: Links between comprehensive strategic assessment commitments and actions in the Plan

Great Barrier Reef Region Program Commitments	Reef 2050 Long-Term Sustainability Plan Outcomes Framework Actions
New initiatives	
Outcomes and targets (strategic assessment recommendation 25)	All
Offset guidelines and net benefit policy (strategic assessment recommendation 8A)	EHA4, EBA4, EBA5
Cumulative impact assessment guidelines (strategic assessment recommendation 7)	EHA2, HA4, EBA5
Reef recovery program - regionally-based cooperative management approaches (strategic assessment recommendation 22, 24, 27, 29, 14, 38)	WQA14, WQA18, EHA7, EHA12, BA14, GA8, GA9
Reef integrated monitoring and reporting program (strategic assessment recommendation 31)	WQA5, WQA15, WQA17, WQA18, BA17, BA18, BA19, CBA3, CBA11, EBA1, EBA7, GA5, GA6, GA8, GA9, GA10
Foundational management	
Spatially explicit tools - Zoning Plan, Plans of Management, Traditional Owner Agreements, Site-specific management arrangements, Site infrastructure	EHA5, EHA8, BA1, BA9, BA10, BA11, HA2, HA3, HA6, HA7, CBA9
System-based tools - Permissions, fees & charges, compliance, Field management operations, Statutory reporting, policy	EHA5, BA3, BA4, BA5, BA7, BA8, BA9, EBA5, EBA12, GA3
Partnerships, e.g. Reef Water Quality Protection Plan, High Standard Tourism program, Reef Guardians.	WQA1, WQA10, WQA14, WQA16, WQA17, EHA7, EHA14, EHA15, EHA16, EHA17, BA12, BA15, HA7, CBA7, CBA8, CBA9, CBA10, EBA14, EBA15, GA2, GA8, GA9
Education and community awareness, including Reef HQ Aquarium	HA8, CBA10
Measures to strengthen management	
Environmental regulation	
Regionally-based standards for ecosystem health (strategic assessment recommendation 18, 20, 30)	WQ18, EHA1, EHA18
Dredging and dredge material disposal policy (strategic assessment recommendation 11A)	WQA6, WQA7, WQA8
Strengthened guidelines (e.g. water quality) (strategic assessment recommendation 7, 18, 19, 21, 25)	WQA18, EHA2, HA4, EBA5
Measures to enhance alignment of permission system with EPBC Act assessment processes (strategic assessment recommendation 8A)	CBA3, HA1
Streamlining, harmonising and enhancing management tools (strategic assessment recommendation 8, 9, 10, 12)	EHA5, EBA5
Improving assessment of matters of national environmental significance (strategic assessment recommendation 1, 3, 4, 8A)	EHA2, EHA4, EHA5, HA4, HA5, HA10, CBA1, CBA2, CBA3

Great Barrier Reef Region Program Commitments	Reef 2050 Long-Term Sustainability Plan Outcomes Framework Actions
Further develop operational activities that support recovery and build resilience (strategic assessment recommendation 12, 15, 17, 17A, 25, 35, 36, 37, 38)	GA7
Improving certainty for planning and management (strategic assessment recommendation 11)	CBA1, CBA2, CBA4
Strengthening protection of natural, cultural, and historic heritage values (strategic assessment recommendation 4,5,13,28)	WQA6, WQA7, EHA21, HA1-11, CBA4, EBA3
Improving compliance (strategic assessment recommendation 16, 8A)	EHA8
Improving incident response capacity (strategic assessment recommendation 10A)	EHA9, EBA15
Engagement	
Influencing drivers and activities affecting the Region (strategic assessment recommendation 27,37,38)	WQA2, WQA6, WQA7, WQA8, WQA11, WQA14, WQA16, WQA18, EHA11, BA3, BA4, BA5, EBA11, EBA12
Supporting best practice and stewardship (strategic assessment recommendation 14)	WQA2, WQA11, WQA16, EHA15, EHA16, EHA17, HA9, CBA6, CBA7, CBA8, CBA10, EBA1, EBA3, EBA8, EBA11, EBA12, EBA13
Improving consultation arrangements (strategic assessment recommendation 34A)	GA2, GA10
Establishment of a peak Reef advisory committee (strategic assessment recommendation 34A)	GA2
Knowledge, innovation and integration	
Improving identification and understanding of matters of national environmental significance (strategic assessment recommendation 3, 6, 32)	EHA12, EHA21, BA12, HA1, HA9, HA10, CBA11, EBA1, EBA16
Improving identification of Indigenous heritage values (strategic assessment recommendation 4,5,13,28)	HA9, HA10
Developing a historic heritage database (strategic assessment recommendation 5,13)	HA11
Improving understanding of community benefits (strategic assessment recommendation 8,33)	CBA5, CBA10, CBA11
Improving alignment and coordination of research priorities (strategic assessment recommendation 20, 30)	Science strategy, WQA19, EHA11, EHA19, EHA20, BA10, BA11, BA20, EBA16, GA5, GA6
Increasing emphasis on use of modelling (strategic assessment recommendation 20,31)	Science Strategy; EHA11, EHA19, EHA20
Better integration of knowledge into management (strategic assessment recommendation 31)	Science strategy and Information management strategy; EHA19, EHA21

Great Barrier Reef Region Program Commitments	Reef 2050 Long-Term Sustainability Plan Outcomes Framework Actions
Forward commitments	
Reef 2050 Long-Term Sustainability Plan	All
Adaptive management — review cycles (strategic assessment recommendation 31)	GA5
Governance (Ministerial Forum) (strategic assessment recommendation 34)	GA1

Coastal Zone Program Commitments	Reef 2050 Long-Term Sustainability Plan Actions that reflect commitment
The Queensland Government will complete regional plans in the GBR coastal zone where there is a gap and continue to update other regional plans to ensure they respond to the latest information and pressures.	EHA1, CBA2
The Queensland Government will maintain and work to add to its protected area estate and continue to provide funding for protected area management in the GBR coastal zone.	EHA6, EHA8, GA3
The Queensland Government will undertake on-ground actions which will deliver long-term benefits for threatened species.	BA1, BA3, BA4, BA5, BA7, BA8, BA10, BA11, BA14, BA16, BA17, BA18, BA19,
The Queensland Government will introduce legislation to implement key actions of the QPS. The legislation will concentrate development at five PPDA's and introduce port master planning which will incorporate environmental considerations and community engagement. The QPS also prohibits dredging within and adjoining the GBRWHA for the development of new, or the expansion of existing port facilities outside PPDA's, for the next 10 years.	WQA6, WQA7, EHA3, HA5, EBA2, EBA10, GA3
The Queensland Government will meet the EPBC Act requirements set out in Table 5.	Legal obligation
The Queensland Government is committed to working with the Australian Government, including GBRMPA, to develop MNES guidelines for proponents to consider when assessing impacts on MNES during the EIS processes under the Program.	EHA2 EHA21, HA4, HA5, HA10, CBA1, CBA2, EBA5
The Queensland Government will apply the Australian Government Offsets Policy until the Queensland Offsets Framework is accredited by the Australian Government. Offsets guidelines that deliver net benefits will be prepared for application by planning and development decision-makers in consultation with the Australian Government.	EHA4, EHA7, EBA4, EBA5, GA7

Coastal Zone Program Commitments	Reef 2050 Long-Term Sustainability Plan Actions that reflect commitment
The Queensland Government will develop an offsets register to spatially identify areas used as offsets under Queensland legislation and priority areas for future offsets.	EBA4, EBA5
The Queensland Government will develop a single Direct Benefit Management Plan for the GBRWHA consistent with the accredited Queensland Offsets Framework.	EHA4, EBA4, EBA5, GA7
The Queensland Government will use the Australian Government 'Protected Matters Search Tool' in conducting planning and making EIS decisions related to EPBC Act protected matters.	EHA19
The Queensland Government will ensure that stringent conditions addressing MNES and OUV will be incorporated into approval recommendations.	EHA2, EBA5, GA3
The Queensland Government will prioritise actions to recover species, taking into account national recovery plans, threat abatement plans and conservation advice.	EHA12, BA1, BA3, BA4, BA5, BA7
The Queensland Government will continue to work with the Australian Government and other states and territories to achieve consistent national listing of threatened species.	Beyond the scope of the Long-Term Sustainability Plan
The Queensland Government will require project proponents to apply the Australian Government's guidelines for consulting with Indigenous peoples in relation to cultural heritage and the management of traditional use. The Australian Government guidelines will be developed in cooperation with Queensland and the State will also explore ways to streamline Indigenous consultation processes between the two governments.	EHA5, EHA21, BA15, HA4, HA5
The Queensland Government will work with the Australian Government, including GBRMPA, to develop guidelines for proponents to consider when assessing cumulative impacts on MNES in the GBRWHA.	EHA2, HA4, EBA5
The Queensland Government will ensure that fisheries are managed for the purpose of ecological sustainability, supported by the ongoing collection of commercial and recreational data through various monitoring programs.	BA3, BA6, BA14, BA16
The Queensland Government will incorporate reporting on MNES into Queensland State of the Environment reporting.	BA17, BA18, BA19, HA10, CBA3, GA5, GA6
The Queensland Government is providing \$12 million over three years in grants under the Everyone's Environment Grants program.	EH7, EHA12, EHA15, EHA16, CBA8

Coastal Zone Program Commitments	Reef 2050 Long-Term Sustainability Plan Actions that reflect commitment
The Queensland Government will provide \$30 million of NRM funding to the reef for biodiversity, wetlands, water quality, coastal risk, sustainable agriculture and weeds and pest management projects over the next five years. This will support the sustainable management of natural resources and help protect significant natural assets.	WQA4, EHA7, EHA12, EHA15, CBA1, CBA8, GA4, GA7
The Queensland Government will continue to support programs that improve the OUV of the Wet Tropics World Heritage Area.	WQA1, WQA2, WQA4, WQA6-10, WQA12-18, EHA3, EHA4, EHA7, EHA8, EHA11, EHA12, EHA13, EHA15, EHA16, BA1, BA3-5, BA7, BA10, BA11, CBA8, EBA4, EBA8, HA6, GA3, GA7
The Queensland Government will continue to support the Queensland Wetlands Program to deliver a range of new mapping, information and decision-making tools and products to enable local, state and federal government agencies, landowners, regional natural resource management bodies and conservation groups to protect and manage wetlands into the future.	EHA1, EHA12, EHA18, EHA19, CBA8
The Queensland Government is committed to providing 40 new Indigenous Land and Sea Rangers in Queensland over three years, bringing the total number of Indigenous Land and Sea Rangers to 80.	WQA11, EHA14, EHA17, BA15, HA7
The Queensland Government will continue to work closely with GBRMPA to increase the implementation of complementary actions across protected area jurisdictions, including the streamlining of assessment and joint permitting processes, the formulation of joint park user policies, and discouraging repeat offending.	EHA6, EHA8, CBA8, CBA7
The Queensland Government will continue to fund and support ongoing joint field management activities with the Australian Government, including GBRMPA.	EHA6, EHA8, GA3
The Queensland Government will advise the Australian Government of any proposed changes of substance to the Program and will prepare a MNES Impact Statement in such cases.	Legal obligation
The Queensland Government will report to the Australian Government regarding proposed developments that may impact upon world heritage properties to ensure Australia's international obligations continue to be met.	Legal obligation
The Queensland Government will report annually to the Great Barrier Reef Ministerial Forum on implementation of the Reef 2050 – Long Term Sustainability Plan.	GA1, GA9

Coastal Zone Program Commitments	Reef 2050 Long-Term Sustainability Plan Actions that reflect commitment
The Queensland Government will work with the Australian Government, including GBRMPA, to develop a Reef 2050 – Long Term Sustainability Plan for the GBRWHA by the end of 2014 and ensure its implementation.	All
The Queensland Government will work with the Australian Government, including GBRMPA, to develop an outcomes-based framework for the GBRWHA as part of the Reef 2050 – Long Term Sustainability Plan.	All
The Queensland Government will work with the Australian Government, including GBRMPA, to establish an integrated monitoring framework and program for the GBRWHA as part of the Reef 2050 – Long Term Sustainability Plan.	GA1, GA5
The Queensland Government will continue to work with industry and other stakeholders in Gladstone Harbour through the Gladstone Healthy Harbour Partnership to ensure open and accountable management of Gladstone Harbour, including annual reporting on ecosystem health and future actions underpinned by rigorous monitoring and science.	WQA7, WQA17, EBA2, EBA3, EBA8, EBA10, EBA14
The Queensland Government is committed to reducing the risk of shipping incidents and potential pollution of the marine environment, including implementing its responsibilities as part of the North East Shipping Management Group.	WQA12, BA2, EBA11, EBA13, EBA15
The Queensland Government is committed to funding of \$55 million over the next five years to develop, promote and install best management practice systems to improve reef water quality.	WQA1, WQA2, WQA5, WQA10, WQA12, WQA13, WQA14, WQA15, WQA16
The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan and the associated Paddock to Reef monitoring program to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR. Consideration will be given to the inclusion of other pollutants other than broadscale land use during the Plan's next review in 2018.	WQA1, WQA10, WQA12, WQA14, WQA15, WQA17

Appendix D: The Outcomes Framework - clear measures to protect Outstanding Universal Value

The Plan sets out clear measures for identification, protection, conservation, presentation and transmission to future generations the Outstanding Universal Value of the Reef. Through an Outcomes Framework, clear measures will be guided by medium-term objectives, linked to each of the World Heritage criterion, for each of the outcome themes (Table 1). Linkages between objectives and Outstanding Universal Value criterion were identified based on the values to which they protect and/or represent.

Table 1: How the Outcomes Framework protects the Outstanding Universal Value of the Great Barrier Reef

Theme and Context	Objectives	Criterion vii	Criterion viii	Criterion ix	Criterion x	Integrity
Water quality Improving the quality of water in the Reef is critical to maintaining the Outstanding Universal Value of the Great Barrier Reef and improving its health and resilience. Water quality is fundamental to the health of Reef ecosystems and its biodiversity.	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.	●	●	●	●	●
	The quality of water in or entering the Reef from industrial, port (including dredging), urban waste and stormwater sources has no detrimental impact on the health and resilience of the Great Barrier Reef.	●		●	●	●
Ecosystem health The ecosystem health outcome relates to the ecological systems that support the integrity, biodiversity and heritage values of the Reef and the economic and community benefits it supports. Targets and actions relate to those aspects of ecological systems (e.g. coral, seagrass, and coastal habitats) that support or best represent ecological and biological processes of the Reef, provide the natural habitats for biodiversity including threatened species, and support community benefits (e.g. the natural beauty).	The Great Barrier Reef World Heritage Area retains its integrity and system functions by maintaining and restoring the connectivity, resilience and condition of marine and coastal ecosystems.	●	●	●	●	●
	Trends in the condition of key ecosystems including coral reefs, seagrasses, estuaries, islands, shoals and inter-reefal areas are improved over each successive decade.	●	●	●	●	●
	Direct, indirect and cumulative impacts on marine and coastal ecosystems are avoided, mitigated or offset to achieve a net benefit for Reef resilience and ecosystem health.	●		●	●	●
	To respect, preserve and maintain the knowledge, innovations and practices of Indigenous communities relevant for the conservation and cultural use of biocultural diversity.			●	●	●

Theme and Context	Objectives	Criterion vii	Criterion viii	Criterion ix	Criterion x	Integrity
<p>Biodiversity</p> <p>Biodiversity is the variety among all plants and animals. It encompasses all living things, from microbes and single celled algae to marine turtles and whales, and their habitats. This theme relies on some species acting as indicators of broader biodiversity health—best represented by consideration of extent, condition and trend for species or their habitat.</p>	Indices of biodiversity are in good or very good condition at Reef wide and regionally relevant scales.	●		●	●	●
	Stable or positive trends in populations of indicator species across their natural range.	●		●	●	●
	Reef habitats and ecosystems are managed to sustain healthy and diverse populations of indicator species across their natural ranges.	●		●	●	●
	The survival and conservation status of listed species within the Great Barrier Reef World Heritage Area is promoted and enhanced.	●		●	●	●
	Traditional Owners are engaged and participate in the conservation and sustainable use of cultural keystone species and biocultural resources.	●		●	●	●
<p>Heritage</p> <p>Heritage encompasses Indigenous and non-Indigenous values. It values include the natural and cultural environment, having aesthetic, historic, scientific or social significance or other significance for current and future generations.</p> <p>Many traditional cultural practices include plants, animals and the environment, making nature inseparable from cultural identity.</p> <p>Natural heritage, including the Reef's outstanding universal value, is further addressed throughout the outcomes framework. It cuts across themes including biodiversity and ecosystem health together with community benefits, and underpins our understanding of the 'world heritage values of the Reef'.</p>	Traditional Owners have joint management responsibilities for the documentation and conservation of Indigenous heritage values.	●	●	●	●	●
	Non-Indigenous heritage including natural, aesthetic, historic, scientific, and social values are identified, conserved and managed in partnership with the community.	●	●	●	●	●

Theme and Context	Objectives	Criterion vii	Criterion viii	Criterion ix	Criterion x	Integrity
<p>Community benefits</p> <p>Local residents and visitors from around the world are drawn to the Reef for its exceptional natural beauty, and many people have strong connections with the Reef, through culture, occupation, or through familiarity.</p> <p>Human wellbeing is inextricably linked to environmental health.</p> <p>Traditional Owners have long highlighted the benefits that their communities derive from the Region's environment, including access to the Reef's resources, employment and improved health outcomes.</p> <p>People also derive less tangible benefits from healthy ecosystems such as nature appreciation, opportunities for relaxation and enjoyment.</p>	A healthy Reef that supports sustainable lifestyles and livelihoods, and provides coastal communities with protection from extreme weather events.		●	●		●
	Community benefits provided by the Reef, including its exceptional natural beauty, are maintained for current and future generations.	●				●
	The rights of Traditional Owners to derive benefits from the conservation and cultural use of biological resources are recognised.	●				●
	Local, regional and Reef-wide community benefits are understood and the community is actively engaged in Reef management.			●	●	●
<p>Economic benefits</p> <p>Addressing the interplay between environmental, social and economic factors through improved planning and decision-making and an outcomes focused approach will contribute to sustainable communities, a healthy environment and the transmittal of the Reef's Outstanding Universal Value to future generations.</p>	Protecting the Reef's Outstanding Universal Value is embedded within decision-making, with impacts first avoided, then mitigated and then as a final consideration, any residual impacts are offset to achieve a net environmental benefit.	●	●	●	●	●
	Reef dependent and Reef associated industries are sustainable, productive and profitable.	●	●	●	●	●
	Traditional owners derive economic benefits from conservation and sustainable use of biological resources.	●	●	●	●	●

OUV Criteria and Integrity:

- (vii) Contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance.
- (viii) Be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features.
- (ix) Be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals.
- (x) Contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Integrity relates to the 'wholeness and intactness' of the heritage property and how it conveys the values it holds.

* **Indicator species** include, but are not limited to, bony fish, sharks and rays, sea-snakes, marine turtles, seabirds, shorebirds, coastal dolphins, humpback whales and dugongs. Stable is the objective where the condition of the population is good or very good and Improving is the objective when the condition of the population is poor or very poor.

Appendix E: How the Plan will lead to the protection, maintenance and transmission of the Reef's Outstanding Universal Value

Criteria for Outstanding Universal Value
<p>The Plan will: <i>'Lead to the protection of the Outstanding Universal Value (OUV) of the property'.</i></p> <p>Response: Protecting the OUV of the property is a cross-cutting theme that is addressed throughout the Plan and the management system of the property, guided by the following vision. 'In 2050, the Great Barrier Reef continues to demonstrate the Outstanding Universal Value for which it was listed a World Heritage Area, and supports a wide range of sustainable economic, social, cultural, and Traditional activities.' Objectives, targets and actions achieve the vision.</p>
<p>The Plan will: <i>'Address the OUV of the property as a clearly defined and central element within the management system of the property, including as a principal reference in the decision-making process regarding all development and use that may negatively impact the property or in areas adjacent'.</i></p> <p>Response: Overarching decision making principles are set out (page 21). Protection of OUV is paramount. In addition the principles state that: <i>'OUV is embedded within planning and decision-making'</i> and <i>'Protection of OUV still enables sustainable economic growth'</i> Once finalised, the Plan including the outcomes framework, will become a schedule to the Great Barrier Reef Intergovernmental Agreement.</p>
Criteria for developing the Plan
<p>The Plan will: <i>'Be completed in a coordinated and fully consultative process'.</i></p> <p>Response: A <i>Partnership Group</i> was formed, representing key sectors and stakeholders, to assist in the Plan's development and ensuring the Plan was developed in a coordinated and fully consultative process. The Plan will also undergo a 6-week public consultation process to inform its finalisation.</p>
<p>The Plan will: <i>'Receive key input from an independent review of the institutional and management arrangements for the property'.</i></p> <p>Response: The Australian Government has commissioned an independent review of the institutional and management arrangements for the property. The review will inform the final Plan.</p>

The Plan will:

'Result in concrete and consistent management measures that are sufficiently robust, effectively governed and adequately financed'.

Response:

(Concrete consistent and robust measures)

The Plan is an outcome focused framework with defined objectives, SMART targets and actions, implemented to protect the overall long-term conservation of the property.

(Effectively governed)

The Great Barrier Reef Ministerial Forum will be the key decision-making body for the Plan supported by an Intergovernmental Operational Committee, created to oversee the implementation of the Plan.

A multidisciplinary Reef Advisory Committee will be formed to ensure a consultative approach to the implementation and review of the Plan. In addition, an independent science panel will provide advice to inform adaptive management of the Plan.

(Adequately financed measures)

The Plan is founded on actions already identified through existing science or which have been committed to by government or industry over coming years.

An investment baseline and associated investment strategy to inform the future delivery of actions under the Plan will also be developed.

Criteria for the outcomes framework

The Plan will:

'Provide a clear and target-driven framework to support planning and assessment of development proposals'.

Response:

The Plan including the outcomes framework, will inform relevant development decisions.

The Plan will:

'Fully address direct, indirect and cumulative impacts on the Great Barrier Reef'.

Response:

The Plan commits to developing a *cumulative impact assessment policy* and a *net benefit policy* to guide future planning and development decisions. Many of the actions and targets in the Plan are aimed at reducing impacts to the Reef to ensure cumulative impacts are managed below threshold levels and ensures protection and transmission of the Reef's OUV.

The Plan will:

'Adopt clearly defined and scientifically justified targets'.

Response:

The objectives, targets and actions in the Plan will undergo a peer review process by independent experts during the public consultation period.

Criteria for ports management

The Plan will:

'Include a fully integrated approach to planning, regulation and management of ports and shipping activity, including: ensuring no new development outside of long-established major port areas; development focused to Priority Port Development Areas that exclude Fitzroy Delta, Keppel Bay and North Curtis Island; ensuring ports and shipping activity meet the highest international standard'.

Response:

The plan adopts an integrated approach to ports management and shipping by referencing targets and actions consistent with the *Queensland Ports Strategy* and the *North East Shipping Management Plan*, notably the establishment of Priority Port Development Areas (PPDAs) and adopting best practice standards for shipping. Fitzroy Delta, Keppel Bay and North Curtis Island are in the Port of Rockhampton which will not be established as a PPDA.

The Plan also details commitments to a cross jurisdictional dredge management policy and a dredging management strategy encompassing both industry and government-led initiatives.

The spatial boundary of each PPDA will be determined through a port-specific master planning process that requires careful consideration of issues beyond the port.

Criteria for governance

The Plan will:

'Be agreed at Federal and State levels, addressing the entire property and adjacent areas that may impact its OUV'.

Response:

The Plan is a joint Australian and Queensland government initiative and its implementation and review will be overseen by the Great Barrier Reef Ministerial Forum. The Plan will form a schedule to the *Intergovernmental Agreement 2009*.

The scope of the Plan addresses activities that occur across the property and in areas adjacent that may affect the OUV of the property.

The Plan will:

'Provide a strategy that will sustain the long-term sustainable development of the property, including consideration of all economic sectors'.

Response:

The Plan commits to objectives, targets and actions across ecological, economic and social themes.

Sectoral-based implementation plans to be developed will integrate and guide actions across government and relevant economic sectors to inform sustainable development.

The Plan will:

'Increases public confidence on their ability to engage with and influence policy'.

Response:

The Plan has been developed in consultation with the *Partnership Group* and will undergo a public comment process.

A multidisciplinary Reef Advisory Committee will ensure a consultative approach to the implementation and review of the Plan.

Reporting and reviewing requirements of the Plan include an annual report on implementation, made available to the public and a five-yearly review of its effectiveness.

Incorporating diverse knowledge systems (through existing community networks and stewardship programs) is a key principle under the Plan and will be used to drive innovation and influence future target and action-setting.

**Italics represent recommendations of the World Heritage Committee.*

Appendix F: The outcomes framework—actions by strategies

Reef 2050 Long Term-Sustainability Plan—Actions

Actions		Objective	Target
Management guidance			
WQA1	By 2018, review and update the Reef Water Quality Protection Plan and its targets. (QG, AG, GBRMPA, Partners)	WQO1 EHO1, EHO2, EHO3	WQT1, WQT2 EHT1, EHT2, EHT3
WQA2	Implement innovative management approaches through the Reef Trust for improving water quality. (AG, QG, GBRMPA)	WQO1, WQO2 EHO3	WQT1, WQT2, WQT5 EHT2
WQA3	Review and set regionally relevant standards for urban and point-source discharges into Reef and coastal waters and ensure licensees meet these standards. (Industry, QG, LG)	WQO2 EHO3	WQT3 EHT2
WQA4	Identify, pilot and, where feasible, implement voluntary cost-effective market-based trading programs and other innovative mechanisms for point and diffuse sources of pollution. (QG, Industry, Service providers, LG)	WQO1, WQO2 EHO3	WQT5 EHT2
WQA5	Establish a performance-based voluntary reporting framework across agriculture, urban, ports and industry to measure management efforts to achieve best management practice and to inform regional report cards. (Industry, QG, LG)	WQO1, WQO2 EHO2 GO2	WQT2, WQT3 WQT4, WQT5 EHT2, EHT3 GT5
WQA6	Prohibit dredging within and adjoining the Great Barrier Reef World Heritage Area, for the development of new, or the expansion of existing port facilities outside priority port development areas, for the next 10 years. (QG)	WQO2 EHO3 EBO1, EBO2	WQT3, WQT5 EHT2 EBT1
WQA7	Undertake dredging in a planned, structured and strategic manner for each port as part of a port safety and planning process that prioritises opportunities for the beneficial re-use of dredged material, without undue risks to human health or the environment. (QG, GBRMPA)	WQO2 EHO3	WQT3, WQT5 EHT2, EHT3
WQA8	Develop and implement a dredging management strategy that includes: <ul style="list-style-type: none"> a principle-based dredge management policy that prioritises the beneficial re-use of dredged material (AG, GBRMPA, QG, Ports Australia, Industry) develop a pilot program to test different treatment and use options for dredge spoil (Ports Australia, AG) measures to address dredging related impacts on Reef water quality and ecosystem health. (GBRMPA, Ports Australia) 	WQO2 EHO3	WQT3, WQT5 EHT2, EHT3

Actions		Objective	Target
	<ul style="list-style-type: none"> a 'code of practice' for port related dredging activities. (Ports Australia, Industry, QG, GBRMPA) 		
WQA9	<p>Develop a statewide coordinated maintenance dredging program that is consistent with the dredge management policy and considers:</p> <ul style="list-style-type: none"> each port's maintenance dredging needs historical dredging volumes and likely future requirements and limits availability of cost-effective dredge equipment identification of environmental windows to avoid coral spawning, seagrass recruitment, turtle breeding, weather events risk-based monitoring programs. (Industry, QG, AG, GBRMPA) 	WQO2 EHO2	WQT3, WQT5 EHT2, EHT3
EHA1	Further develop regionally relevant standards for ecosystem health (desired state, critical thresholds and health indicators). (GBRMPA, QG, AIMS, NRM, LG)	EHO1, EHO2, EHO3 GO3	EHT2, EHT3, EHT5 GT3
EHA2	Develop guidelines for assessing cumulative impacts on Matters of National Environmental Significance in the Great Barrier Reef World Heritage Area. (QG, AG, GBRMPA, LGAQ)	EHO3 BO3 HO2	EHT2 HT2
EHA3	Ensure Great Barrier Reef ports planning incorporates measures to support protection, restoration and management of coastal ecosystems that contribute to Reef health and resilience. (Industry, QG, AG)	WQO2 EHO1, EHO2, EHO3	WQT3, WQT5 EHT1, EHT2, EHT3, EHT5
EHA4	Develop a net benefit policy to restore ecosystem health, improve the condition of values and manage financial contributions to that recovery. (GBRMPA, AG, QG, LGAQ, NRM)	EHO3	EHT1, EHT2, EHT3
EHA5	Acknowledge the unique and long-term presence of Indigenous Australians in Great Barrier Reef ecosystems in policy and planning documents aimed at the conservation and cultural use of biodiversity. (GBR Traditional Owners, GBRMPA, AG, QG)	WQO1 EHO4 HO1 EBO3	WQT4 EHT4 HT1 EBT4, EBT5
BA1	Further develop and implement dugong and turtle protection plans using the Reef Trust and associated initiatives. (AG, QG, GBRMPA)	EHO4 BO1 – O4	EHT4 BT1, BT2
BA2	Develop and implement the recommendations of the National Vessel Strike Strategy. (AG, GBRMPA, QG)	BO1-O4	BT1, BT2
HA1	Update the Great Barrier Reef Marine Park Heritage Strategy 2005 to more comprehensively address Indigenous and non-Indigenous heritage. (GBRMPA)	HO1, HO2 EHO4	HT1 EHT4
HA2	Complete heritage management plans for Low Isles and North Reef light stations. (GBRMPA)	HO2	HT1

Actions		Objective	Target
HA3	Update existing conservation management plans for historic shipwrecks—the <i>SS Yongala</i> (1911), <i>Gothenburg</i> (1875), and <i>SS Llewellyn</i> (1919). (GBRMPA)	HO2	HT1, HT2
HA4	Develop impact assessment guidelines for cultural heritage values in the Great Barrier Reef region. (AG, QG, GBRMPA, LGAQ)	HO1, HO2	HT1
HA5	Facilitate robust consideration of heritage values in planning and port development and associated activities (including dredging). (AG, QG, GBRMPA, Ports Australia, NRMs, GBR Traditional Owners)	HO1	HT1, HT2
CBA1	Ensure the impact on Reef health and resilience is addressed when responding to coastal hazards. (LG, QG, GBRMPA)	CBO1 EHO1	CBT4 EHT1, EHT5
CBA2	Ensure community benefits derived from the Reef are considered in local and State-level policy and planning instruments and development and management decisions. (QG, GBRMPA, LGAQ, LG, NRMs)	CBO1, CBO2	CBT1, CBT2
CBA3	Establish and adopt standards to report on condition and trend of aesthetic qualities of the reefs, islands and coasts. (GBRMPA, QG)	CBO2 BO2 HO2	CBT1 BT1 HT1
CBA4	Ensure the aesthetic qualities of the reefs, islands and the coast are considered and protected through planning and development decisions. (QG, GBRMPA, LGAQ, LG)	CBO1, CBO2 HO2	CBT1, CBT2 HT1
CBA5	Review current mechanisms and processes to improve benefits to Traditional Owners engaged in sea country management. (GBR Traditional Owners, GBRMPA)	EHO4 HO1 CBO3 EBO3	EHT4, EHT5 HT1, HT2 CBT3 EBT5
CBA6	Work with Traditional Owners to identify world's best practice in agreement making, strategic planning, and management and implementation of Indigenous programs in relation to the Great Barrier Reef sea country estate. (GBR Traditional Owners, GBRMPA, QG)	WQO1 EHO4 HO2 CBO3, CBO4 EBO3	WQT4 EHT4 HT2 CBT3, CBT2 EBT4
EBA1	Identify, test and use economic indicators as a component of the Integrated Monitoring Reporting Program. (GBRMPA)	CBO4 EBO2 GO3	CBT1 EBT2 GT5
EBA2	Introduce a guideline for port master planning for Priority Port Development Areas that considers the relationships beyond traditional port boundaries, operational, economic, environmental and social, including supply chains and surrounding land issues. (QG)	EHO3 EBO1, EBO2	EHT2 EBT1, EBT2, EBT3

Actions		Objective	Target
EBA3	Adopt the best practice principles identified in the Gladstone Independent Review Reports, provide guidance on where they can be applied, and integrate into port planning and development. (GBRMPA, AG, QG)	EBO1, EBO2	EBT1, EBT2, EBT3
EBA4	Develop and adopt an intergovernmental net benefit policy for the Reef. (GBRMPA, AG, QG, LGAQ)	EHO3 EBO1	EHT2 EBT1
EBA5	Continue to refine and improve guidance and procedural requirements for avoiding, mitigating and offsetting impacts to the Reef using standardised policies, procedures and guidelines. (AG, GBRMPA, QG)	WQO1, WQO2 EHO1, EHO2, EHO3 EBO1, EBO2	WQT3, WQT5 EHT1, EHT2, EHT3 EBT1, EBT3
EBA6	Develop and implement an Indigenous Business Development Plan including a comprehensive review of processes and systems to identify existing and potential economic benefits to Traditional Owners. (GBR Traditional Owners, QG, AG, GBRMPA)	CBO3 EBO2, EBO3	CBT3 EBT4, EBT5
EBA7	Identify, test, and, if appropriate, use indicators of Reef-dependent industry viability and its relationship with Reef health as part of the Integrated Monitoring and Reporting Program. (GBRMPA)	CBO4 EBO2 GO3	CBT1 EBT2 GT5
GA1	Establish an Intergovernmental Operational Committee comprising senior officials from the Australian, including the Great Barrier Reef Marine Park Authority, and Queensland governments to oversee the implementation of the Plan, facilitate coordination of Reef related activities and report annually to the Great Barrier Reef Ministerial Forum. (GBRMPA, QG, AG)	GO1, GO3	GT1, GT2
GA2	Establish a multi-sectoral Reef Advisory Committee to facilitate engagement with industry and the broader community regarding the implementation and review of the Plan. (GBRMPA)	GO2	GT3
GA3	Review and update relevant agreements, policies, plans, strategies and programs to support the Plan's outcomes and targets. <ul style="list-style-type: none"> • update the <i>Great Barrier Reef Intergovernmental Agreement 2009</i> to explicitly include OUV • adopt the Reef 2050 Long-Term Sustainability Plan as a schedule to the <i>Great Barrier Reef Intergovernmental Agreement 2009</i> • fund and support ongoing joint field management activities. (QG, AG, GBRMPA, Industry, Regional Bodies, LG) 	GO1, GO2, GO3	GT1, GT2
GA4	Develop an investment baseline and associated investment strategy to inform the future delivery of actions under the Plan. (AG, QG, Partners, GBRMPA)	GO1, GO2	GT4

Actions		Objective	Target
GA5	Develop, implement, and operate an Integrated Monitoring and Reporting Program to facilitate adaptive management for the Reef. (GBRMPA, QG, AG, Partners)	GO3	GT5
GA6	Establish a Steering Committee to review, coordinate and align monitoring and reporting activities to inform the development and operation of an Integrated Monitoring and Reporting Program. (GBRMPA)	GO2, GO3	GT4, GT5
On-ground actions			
WQA10	Continue improvement in water quality from broadscale land use through implementation of Reef Water Quality Protection Plan 2013 actions. (QG, AG, GBRMPA, Industry, NRMs)	WQO1	WQT1, WQT2
WQA11	Identify and action opportunities for Traditional Owner engagement in on-ground water quality improvement and monitoring programs. (NRMs, GBRMPA, GBR Traditional Owners)	WQO1, WQO2 EHO4 HO1	WQT4 EHT4 HT2
WQA12	Increase adoption of leading practice in the management and release of point-source water affecting the Reef. (Industry, QG, LG, Reef Guardians)	WQO2	WQT3, WQT5
WQA13	Implement best practice stormwater management (e.g. erosion and sediment control and water sensitive urban design) for new development in coastal catchments. (LG, QG, Industry)	WQO1, WQO2	WQT3, WQT5
WQA14	Finalise plans (Water Quality Improvement Plans - Healthy Waters Management Plans) for Reef catchments and key coastal areas, identifying priorities for protection of the Reef. (NRMs, QG, GBRMPA, AG, Industry, LG)	WQO1, WQO2	WQT1, WQT2, WQT3, WQT5
WQA15	Expand 'nested' integrated water quality monitoring and report card programs at major ports and activity centres (e.g. Gladstone), in priority catchments (e.g. Mackay Whitsundays) and Reef-wide (i.e. Reef Report Card), to guide local adaptive management frameworks and actions. (Industry, LG, NRMs, QG, GBRMPA)	WQO1, WQO2	WQT3, WQT5
EHA6	Maintain and work to add to the island and coastal protected area estate and continue to provide funding for protected area management in the Great Barrier Reef coastal zone. (QG)	EHO1, EHO2	EHT1, EHT3, EHT5
EHA7	Improve protection, restoration and management of Reef priority coastal ecosystems including islands through innovative and cost-effective measures. (AG, QG, LG, Reef Guardian, stewardship programs, NRMs, Industry)	EHO1, EHO2	EHT1, EHT6
EHA8	Maintain the Great Barrier Reef Marine Park and Great Barrier Reef Coast Marine Park Zoning Plan and enhance compliance through improved enforcement, and adoption of new technologies. (GBRMPA, QG)	EHO1, EHO2 EBO1	EHT1 EBT3

Actions		Objective	Target
EHA9	Improve shipping and other incident response capacity. (AMSA, QG, GBRMPA)	EHO1 EB01	EHT2 EBT3
EHA10	Establish a baseline for marine debris on the Great Barrier Reef's islands, beaches and coastlines and reduce debris by 20 per cent from this baseline. (GBRMPA, QG, GBR Traditional Owners)	EHO3	EHT2
EHA11	Improve integration and effectiveness of crown-of-thorns starfish research, management and control. (GBRMPA, AG, QG, AMPTO)	EHO1, EHO2	EHT1, EHT2
EHA12	Identify and prioritise key sites of high ecological value and implement recovery programs. (GBRMPA, QG)	EHO1, EHO2 BO1, BO3	EHT1, EHT3, EHT5 BT1, BT2
EHA13	Implement ecosystem health initiatives through the Reef Trust investment strategy. (AG, QG)	EHO1, EHO2, EHO3	EHT1, EHT2, EHT3, EHT6
EHA14	Invest in building Traditional Owner capacity in planning and managing the conservation and sustainable use of the Reef's biological resources. (GBR Traditional Owners, GBRMPA, AG)	EHO4 BO5 HO1 EBO3	EHT4 BT4 HT2 EBT4
BA3	Implement further actions to reduce human-related causes of dugong mortality. (QG, GBRMPA)	BO1, BO2, BO3, BO4, BO5	BT1, BT2, BT5
BA4	Continue implementation of the Raine Island Recovery project. (AG, QG, GBRMPA)	BO1, BO2, BO3, BO4	BT1, BT2
BA5	Reduce cumulative impacts on coastal dolphin populations especially Indo-Pacific humpback and snubfin dolphins. (QG, GBRMPA, AG)	BO1, BO2, BO3, BO4	BT1, BT2
BA6	Complete Queensland's fisheries management review and implement measures to achieve and maintain sustainable commercial and recreational fisheries. (QG)	BO1, BO2, BO3, BO4 CBO2	BT1, BT3
BA7	Ensure that through the Field Management Program resources are available for island habitat restoration projects and pest eradication particularly at critical seabird and turtle nesting sites. (GBRMPA, QG)	BO1, BO2, BO3, BO4	BT1, BT2
BA8	Operate an effective marine animal stranding response program. (QG, GBRMPA)	BO1, BO2, BO3, BO4	BT1, BT2
BA9	Where agreed, apply traditional knowledge and customary use of biological diversity, including the use of community protocols for managing protected areas. (GBR Traditional Owners, GBRMPA, QG)	BO1, BO2, BO3, BO4, BO5 EHO4 HO2	BT1, BT2, BT4 EHT4 HT1
BA10	Identify, protect and manage key marine turtle breeding areas and foraging grounds. (QG, GBRMPA)	BO1, BO2, BO3, BO4	BT1, BT2
BA11	Identify, protect and manage key seabird islands and foraging grounds. (QG, GBRMPA)	BO1, BO2, BO3, BO4	BT1

Actions		Objective	Target
BA12	Work with Traditional Owner groups to identify biological resources within their sea country and develop plans of management for conservation and use of those resources. (GBR Traditional Owners, GBRMPA, QG)	BO1, BO2, BO3, BO4, BO5 EHO4 CBO3 EBO3	BT1, BT2, BT3, BT4 EHT4 CBT3 EBT4
BA13	Develop a guideline on assessing and managing underwater noise on species. (GBRMPA, AG, QG)	BO3, BO4	BT1, BT2
HA6	Complete and implement conservation management plans for key historic shipwrecks— <i>HMS Pandora</i> (1791), <i>HMCS Mermaid</i> (1829) and <i>Foam</i> (1893). (GBRMPA)	HO2	HT1, HT2
CBA7	Industry, community and governments work together to implement programs such as the Great Barrier Reef Marine Park Authority's Recreation Management Strategy to: <ul style="list-style-type: none"> • implement best practice approaches and certification programs to ensure protection and sustainable use of the Great Barrier Reef • maintain visitor satisfaction through high quality presentation and tourism services, including cultural heritage interpretation • maintain recreational opportunities for Reef visitors (e.g. recreational fishing, sailing and diving) • ensure that tourism and recreation activities are sustainable • maintain and apply a contemporary and adaptive set of management arrangements • coordinate field management activities for Reef visitors • promote voluntary compliance and Reef-friendly behaviour • provide adequate and well-maintained visitor infrastructure such as moorings, reef protection markers, island facilities and interpretative signs. (GBRMPA, AMPTO, LGAQ, QG, NRMs) 	CBO1, CBO2, CBO4	CBT2
EBA8	Support the uptake of sustainable practices by Reef dependant and Reef associated industries to limit impacts on the Reef's Outstanding Universal Value. (GBRMPA, QG, AG)	BO1, BO2, BO3, BO4, BO5 CBO2, CBO4 EBO1, EBO2	BT1, BT2, BT3, BT4 CBT2 EBT1, EBT2, EBT3
EBA9	Implement the Queensland Ecotourism Plan: 2013-2020. (QG)	EBO2	EBT2

Actions		Objective	Target
EBA10	Establish Priority Port Development Areas at long-established major ports of Port of Abbot Point, Port of Gladstone, Port of Hay Point and Mackay, and Port of Townsville. (QG)	EBO1	EBT1
EBA11	Implement commitments for best-practice commercial vessel operation including those aimed at: <ul style="list-style-type: none"> reducing collisions with marine fauna (AG) reducing interference with species behaviour (GBRMPA) undertaking further research and investigate appropriate measures to manage cumulative impacts from shipping. (AG, GBRMPA) 	EBO1, EBO2 BO1, BO2, BO3, BO4	EBT1, EBT3 BT1, BT2
EBA12	Fully vet 100 per cent of all bulk carriers traversing the Great Barrier Reef to an appropriate standard* by an independent industry endorsed ship-vetting provider. (Industry)	EBO1, EBO2	EBT3
EBA13	Encourage industry adoption of vessel assessment activities and approval processes that incorporate key crew competency evaluations to help ensure safe operations and compliance with regional and port requirements.** (Industry)	EBO1, EBO2	EBT3
GA7	Develop, implement and maintain mechanisms and policies to enhance investment in delivering on-ground activities that support the Plan's outcomes and targets, and which contribute to a net benefit policy to ensure the Outstanding Universal Value and integrity of the Reef is maintained or enhanced. (AG, QG, GBRMPA, Partners)	CBO2 GO2, GO3	CBT2 GT3, GT4, GT5
Stewardship and community participation			
WQA16	Build capacity for local government and the development industry to improve water quality management in urban areas. (AG, QG, LG, LGAQ, GBRMPA)	WQO2	WQT3, WQT5
WQA17	Increase resource sector participation in regional water quality improvement initiatives and partnerships aimed at managing, monitoring and reporting of water quality. These should build on existing initiatives such as: <ul style="list-style-type: none"> Fitzroy Partnership for River Health Gladstone Healthy Harbours Partnership Mackay Whitsunday Healthy Rivers to Reef Partnership. (QG, Industry, NRMs) 	WQO2 CBO4	WQT3, WQT5 CBT2
EHA15	Support best practice and community stewardship activities that contribute to Reef health and resilience, for example through Reef Guardian programs, Natural Resource Management plans, industry Best Management Programs and Stewardship programs, Reef Plan and High Standard Tourism Operators. (AG, QG, LG, GBRMPA, Industry)	EHO1, EHO2, EHO4 CBO4	EHT1, EHT2 CBT2

Actions		Objective	Target
EHA16	Support Traditional Owners and stakeholders, including Reef Guardians, to clean up and, where possible, identify the sources of marine debris. (GBRMPA, GBR Traditional Owners, Industry, NRMs, QG)	EHO1	EHT2
EHA17	Increase engagement and participation of Traditional Owners in joint management of existing and new protected areas in the Great Barrier Reef coastal zone and region. (GBR Traditional Owners, GBRMPA, QG)	EHO1, EHO4 BO4	EHT1, EHT2, EHT3, EHT4
BA14	Reduce the incidental catch of species of conservation concern through regionally-based cooperative management approaches. (GBRMPA, QG, Commercial and Recreational Fishers)	BO1, BO2, BO3, BO4 CBO2	BT1, BT2, BT3 CBT2
BA15	Improve Traditional Owner engagement to strengthen participation in decision making at all levels relating to the conservation and cultural use of biodiversity. (GBRMPA, AG, GBR Traditional Owners, QG)	EHO4 BO1, BO2, BO3, BO4, BO5 HO1 CBO3	EHT4 BT1, BT2, BT4 HT1 CBT3
HA7	Build capacity for the involvement of Traditional Owners and community members in cooperative management (AG, QG, GBRMPA, NRMs, GBR Traditional Owners) and port planning. (Industry, GBR Traditional Owners)	EHO4 HO1, HO2	EHT4 HT1, HT2 CBT3
HA8	Increase community awareness and appreciation of heritage values. (AG, QG, GBRMPA, LG)	HO1, HO2 CBO4	HT1, HT2 CBT2
CBA8	Strengthen and integrate programs such as the Great Barrier Reef Marine Park Authority's Reef Guardian stewardship program, to promote the: <ul style="list-style-type: none"> • Reef's values and the community benefits they provide • threats to the Reef and what people can do to address them • implications of climate change for the Reef and coastal ecosystems • role of the Reef, coastal ecosystems and physical coastal processes in protecting communities from extreme weather events • opportunities to contribute/play a role in protecting and managing the Reef. (GBRMPA, AMPTO, LGAQ, Industry, QG) 	CBO1, CBO2, CBO4 EBO1	CBT2, CBT4 EBT1
CBA9	Develop collaborative working arrangements with Traditional Owners which establish mutual trust and build Indigenous capacity. (GBRMPA, AG, QG)	EHO4 BO5 CBO3	EHT4 BT4 CBT2, CBT3
CBA10	Improve the involvement and support of local communities in protecting, managing and sustainably using the Reef, including through Local Marine Advisory Committees. (GBRMPA)	CBO4	CBT2

Actions		Objective	Target
EBA14	Continue to engage in and support the Gladstone Healthy Harbour Partnership. (AG, QG)	EBO1, EBO2	EBT1, EBT2, EBT3
EBA15	Support the North-east Shipping Management Group and the Water-Space Management Group on environment protection measures, preparedness and response protective measures, management of major anchorages, and stakeholder engagement. (AG, GBRMPA, QG)	EBO1, EBO2	EBT1, EBT3
GA8	Work with industry, regional bodies, local governments, research institutions, and the community to prioritise and develop regionally tailored implementation plans and reporting protocols addressing the Plan's targets and actions. (QG, AG, LG, GBRMPA Industry, NRMs)	GO2	GT1, GT3
GA9	Prioritise and develop sectoral implementation plans and reporting protocols addressing the Plan's targets and actions in consultation with the community. (Industry, AG, QG, LG, GBRMPA, NRMs)	GO2	GT1, GT3
Research and information management			
WQA18	Review and update water quality objectives and Great Barrier Reef Marine Park Authority Water Quality Guidelines at Reef-wide and regionally relevant scales based on scientifically verified monitoring and research. (QG, GBRMPA, Industry, LG)	WQO1, WQO2	WQT3
WQA19	At each major port, understand the port sediment characteristics, risks and how they interact and contribute to broader catchment contributions within the Great Barrier Reef World Heritage Area. (Industry, QG, GBRMPA)	WQO2	WQT3
EHA18	Finalise classification of marine ecosystems. (QG, GBRMPA)	EHO1, EHO2	EHT1
EHA19	Improve mapping and modelling of ecosystems important for the protection of the Reef to inform planning, assessment and decision making. (GBRMPA, AIMS, QG, NRMs, LGAQ)	EHO1, EHO2	EHT1, EHT3, EHT5
EHA20	Address key knowledge gaps identified in Great Barrier Reef Outlook Report 2014 through the National Environment Science Program. (AG, GBRMPA)	EHO1, EHO2, EHO3	EHT1, EHT2, EHT3, EHT5
EHA21	Develop, implement and coordinate a protocol and knowledge management system for collecting, handling and sharing culturally sensitive information, and its integration in decision making. (GBR Traditional Owners, GBRMPA, AG, QG)	EHO1, EHO4 GO3	EHT4 GT5
BA16	Complete a stock assessment of coral trout every five years. (QG)	BO1, BO2, BO3, BO4	BT1, BT3
BA17	Continue to survey the dugong population every five years. (JCU, GBRMPA, QG)	BO1, BO2, BO3, BO4	BT1, BT2

Actions		Objective	Target
BA18	Monitor and report turtle breeding success at key locations. (QG, GBRMPA)	BO1, BO2, BO3, BO4	BT1, BT2
BA19	Monitor key seabird populations for changes on a regular basis. (GBRMPA, QG)	BO1, BO2, BO3, BO4	BT1
BA20	Invest in research to address key Indigenous knowledge gaps identified in the Great Barrier Reef Outlook Report, in particular an assessment of Traditional Fisheries. (GBR Traditional Owners, GBRMPA)	BO1, BO2, BO3, BO4, BO5	BT1, BT2, BT4
HA9	Work with and support Traditional Owners to collect, store and manage their own information, including cultural heritage value assessments. (GBRMPA, GBR Traditional Owners, AG, QG)	HO1	HT1, HT2
HA10	Further identify, map, monitor and report on key Reef heritage values and sites, including comprehensive maritime surveys in priority sections of the Reef. (GBRMPA, QG, AG)	HO1, HO2	HT1
HA11	Consolidate Reef heritage data, and identify priorities for protective action. (GBRMPA, QG, AG)	HO1, HO2	HT1
CBA11	Continue developing a long-term social and economic monitoring program. (GBRMPA)	CBO1 GO3	CBT1 GT5
EBA16	Identify the risk and associated management measures to deal with impacts of coal dust on the Reef. (AG)	EBO1	EBT1
GA10	Establish an Independent Science Panel with an independent chair to provide advice to the multi-sectoral Reef Advisory Committee and the Intergovernmental Operational Committee regarding the implementation and review of the Plan and associated Integrated Monitoring and Reporting Program. (GBRMPA, QG, AG)	GO1, GO3	GT2, GT5



environment.gov.au