



Australian Government

Great Barrier Reef  
Marine Park Authority

GREAT BARRIER REEF REGION STRATEGIC ASSESSMENT

# Program Report

Draft for public comment



The Great Barrier Reef Marine Park Authority acknowledges the continuing sea country management and custodianship of the Great Barrier Reef by Aboriginal and Torres Strait Islander Traditional Owners whose rich cultures, heritage values, enduring connections and shared efforts protect the Reef for future generations.

None of the recommendations in the report, if implemented, are intended to have the effect of extinguishing native title.



**Australian Government**

**Great Barrier Reef  
Marine Park Authority**

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# **Program Report**

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Published by the Great Barrier Reef Marine Park Authority 2013

ISBN 978-1-922126-25-2

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Great Barrier Reef World Heritage Area, Region and Marine Park





# 1 Introduction

## Purpose

The purpose of this report is to provide the strategic direction for management of the Great Barrier Reef Region (the Region) by the Great Barrier Reef Marine Park Authority (the Authority). It describes the Authority's future management program to protect and manage matters of national environmental significance in the Region, including the outstanding universal value of the Great Barrier Reef World Heritage Area.

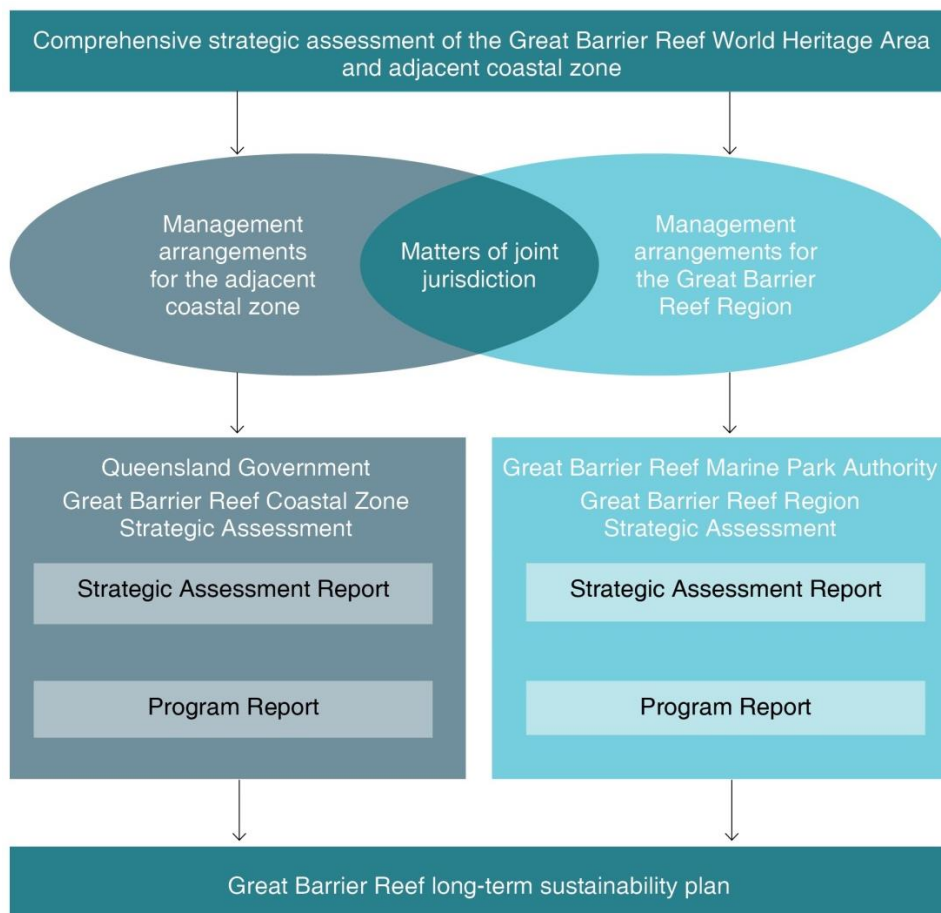
It is intended to set out the future management activities of the Authority and provide guidance to its partners.

## Two complementary strategic assessments

This report forms part of the comprehensive strategic assessment of the Great Barrier Reef World Heritage Area being carried out under Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The comprehensive strategic assessment analyses impacts affecting the World Heritage Area, from activities on the land and on the water.

As part of the assessment, the Authority is responsible for preparing a strategic assessment of the Great Barrier Reef Region, as set out in an agreement with the then Minister for Sustainability, Environment, Water, Population and Communities (Appendix 1). The strategic assessment for the Region is complemented by a strategic assessment of the Great Barrier Reef coastal zone being undertaken by the Queensland Government.

Building on the findings of both strategic assessments, the Authority will work with all relevant partners to develop a whole of government long-term sustainability plan for the Great Barrier Reef World Heritage Area (Figure 1).



**Figure 1 Comprehensive strategic assessment of the Great Barrier Reef World Heritage Area and adjacent coastal zone**

The findings of each assessment are presented in individual reports. The areas of overlap and joint management responsibility are addressed in both strategic assessments. It is intended that the findings will inform development of a long-term sustainability plan for the world heritage area.

### **Informed by the strategic assessment report**

The strategic assessment of the Region has resulted in two reports — this Program Report and the accompanying Strategic Assessment Report. Development of this report has been informed by the findings and recommendations of the strategic assessment report (Appendix 2), and the future management program outlined in this report is designed to implement the recommendations of the assessment.

### **Protecting matters of national environmental significance**

The comprehensive strategic assessment aims to strengthen protection of matters of national environmental significance in the Great Barrier Reef. The matters of national environmental significance relevant to the Great Barrier Reef Region are:

- world heritage properties
- the Great Barrier Reef Marine Park
- national heritage places
- Commonwealth marine areas
- listed migratory species
- listed threatened species and ecological communities
- wetlands of international importance.

There is substantial overlap and connections between these matters of national environmental significance. Their effective future protection relies on the integration of management measures and a focus on protecting the Great Barrier Reef environment as a whole. Recognising this, the report considers all the matters collectively, with a focus on the key values and environmental processes that are relevant to the matters (Appendix 3).

The strategic assessment provides a comprehensive analysis of the drivers, activities and impacts affecting the Region's values. A list of the impacts considered is presented in Appendix 4, along with a summary of the likely future risk of each of the impacts assessed.

### **Scope**

The area to which the management program applies is the Great Barrier Reef Region, as defined in the *Great Barrier Reef Marine Park Act 1975*, and places outside the Region to the extent that the Region may be affected by actions in those places.

The Region extends in latitude from the tip of Cape York in the north to just past Lady Elliot Island in the south. Its western boundary is mean low water of the mainland coast of Queensland and it extends eastwards between 80 and 250 kilometres. It covers 346,000 square kilometres and includes Commonwealth islands. It does not include Queensland islands or internal waters.

The report describes the future management arrangements of the Authority. However, as the Great Barrier Reef is so large and has a wide range of users plus a large area of adjacent catchment, environmental impacts occur at a range of scales and arise from many sources. As a result, the Authority's management activities have a wide scope, focusing on activities both within the Region and external to it and involving ongoing engagement and partnerships with a range of government bodies, Traditional Owners, stakeholders and the community. This is recognised throughout the report.

### **Timeframe**

The timeframe of the management program is 25 years. It is anticipated the management arrangements developed in this report will provide sufficient flexibility to deal with changing circumstances over that period and allow for modifications as required.

### **Program definition**

The word 'program' is used throughout the report and it means those management arrangements (policies, plans or programs) under the Authority's jurisdiction. Management arrangements include, but are not limited to:

- statutory instruments, including Regulations, zoning plans, plans of management and permits
- non-statutory mechanisms including policies, position statements and guidelines
- partnership and collaborative arrangements with Queensland and other Australian government agencies
- partnerships with Traditional Owners in the management of marine resources
- partnership and stewardship programs, including education programs and engagement, with local governments, communities, Indigenous persons, business and industry
- research and monitoring
- compliance and enforcement programs
- resourcing.

## 2 Background

### 2.1 The Great Barrier Reef

The Great Barrier Reef is an Australian icon and one of the most precious ecosystems on Earth. It is a world heritage property, recognised internationally for its outstanding universal value. Containing a maze of reefs and islands, it stretches more than 2300 kilometres along the Queensland coast. It is the world's largest coral reef ecosystem and is rich in biodiversity — from mangroves and seagrasses to coral reefs and open waters.

Aboriginal and Torres Strait Islander people are the Traditional Owners of the Great Barrier Reef area and there are about 70 Aboriginal and Torres Strait Islander Traditional Owner clan groups whose customary estates include land and sea country within the Great Barrier Reef. The Authority acknowledges the Reef's Traditional Owners, past and present, and their unique and continuing connection with the area.

The Great Barrier Reef is critical to the cultural, economic and social wellbeing of the more than one million people who live in its catchment, and is valued by the national and international community. It is a marine protected area, conserving the Reef's environment and supporting a wide range of activities, including tourism, fishing, recreation, traditional use, research, defence, shipping and ports. The Reef's environment helps bring billions of dollars to Australia's economy each year and supports almost 70,000 jobs.<sup>1</sup>

### 2.2 International recognition

On 26 October 1981, the Great Barrier Reef was inscribed on the World Heritage List of the Convention Concerning the Protection of the World Cultural and Natural Heritage<sup>2</sup>, on the basis of its outstanding universal value.

The Great Barrier Reef was the first coral reef ecosystem in the world to be made a world heritage area, recognised for its natural beauty and natural phenomena; its representation of major stages in the Earth's evolutionary history, including man's interaction with the environment; its ecological and biological processes; and its habitats for the conservation of biodiversity. The Great Barrier Reef is one of only a small number of marine world heritage properties inscribed for meeting all four 'natural' criteria. When considering the Reef's nomination for world heritage listing, the then International Union for the Conservation of Nature and Natural Resources (IUCN) stated:

*... if only one coral reef site in the world were to be chosen for the World Heritage List, the Great Barrier Reef is the site to be chosen.*<sup>3</sup>

Articles 4 and 5 of the convention set out the obligation and responsibility to protect, conserve and rehabilitate the Reef's values for all future generations and to present those values to the world.<sup>2</sup>

Notably, a criterion at the time of listing referred to the "interaction between man and his natural environment". In the context of the Great Barrier Reef, this is recognition of the strong and continuing connections between Traditional Owners and their land and sea country — an aspect reflected in the consideration of values that underpin matters of national environmental significance in this assessment.

### 2.3 National importance

The Great Barrier Reef ecosystem has long been recognised for its remarkable biodiversity — from coastal estuarine systems, inshore fringing reefs and seagrass meadows to islands and spectacular outer barrier reefs. The Reef is an integral part of the Australian national identity. It is a subject of national pride, reflected in both the number of people who visit it and in the continuing public interest shown in its future health and management.

Early concerns for the Reef's future culminated in the Australian Government introducing the *Great Barrier Reef Marine Park Act 1975* (the Act). Today 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 Authority and defined the Great Barrier Reef Region. It also enabled declaration of the Great Barrier Reef Marine Park (the Marine Park), introducing the concept of a multiple-use marine park where 'reasonable use' of natural resources could coexist with conservation.

Over subsequent years, sections of the Region were progressively declared as marine park. Today 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 form part of the Great Barrier Reef World Heritage Area.

The Great Barrier Reef is also formally listed as a national heritage place under Australia's national environment legislation, the *Environment Protection and Biodiversity Conservation Act*.

## 2.4 Great Barrier Reef Marine Park Authority

The Great Barrier Reef Marine Park is an Australian Government statutory agency, reporting to the Australian Government Minister responsible for the environment. The Great Barrier Reef Marine Park Act confers responsibility for management of the Region to the Authority and sets out the Authority's role. In managing the Region, the Authority must have regard to, and seek to act in a way that is consistent with, the objects of the Act, the protection of the world heritage values of the Great Barrier Reef World Heritage Area, and the principles of ecologically sustainable use.

### **Objects of the *Great Barrier Reef Marine Park Act 1975* — Section 2A**

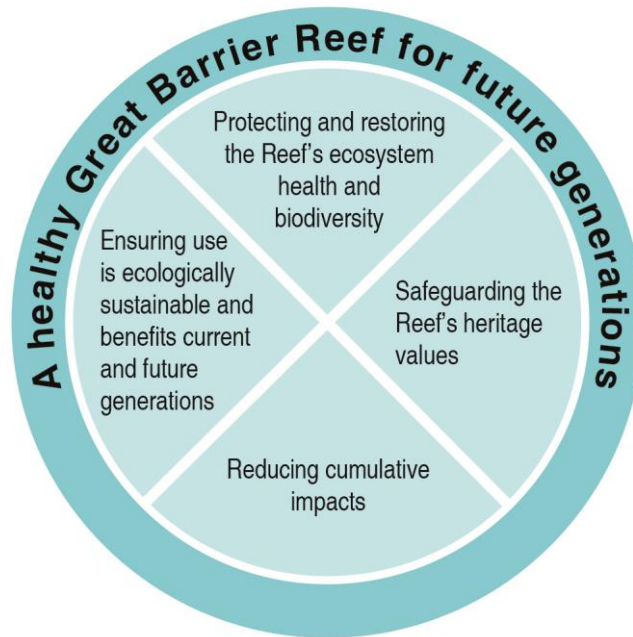
- (1) The main object of this Act is to provide for the long term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region.
- (2) The other objects of this Act are to do the following, so far as is consistent with the main object:
  - (a) allow ecologically sustainable use of the Great Barrier Reef Region for purposes including the following:
    - (i) public enjoyment and appreciation
    - (ii) public education about and understanding of the Region
    - (iii) recreational, economic and cultural activities
    - (iv) research in relation to the natural, social, economic and cultural systems and value of the Great Barrier Reef Region;
  - (b) encourage engagement in the protection and management of the Great Barrier Reef Region by interested persons and groups, including Queensland and local governments, communities, Indigenous persons, business and industry;
  - (c) assist in meeting Australia's international responsibilities in relation to the environment and protection of world heritage (especially Australia's responsibilities under the World Heritage Convention).
- (3) In order to achieve its objects, this Act:
  - (a) provides for the establishment, control, care and development of the Great Barrier Reef Marine Park; and
  - (b) establishes the Great Barrier Reef Marine Park Authority; and
  - (c) provides for zoning plans and plans of management; and
  - (d) regulates, including by a system of permissions, use of the Great Barrier Reef Marine Park in ways consistent with ecosystem-based management and the principles of ecologically sustainable use; and
  - (e) facilitates partnership with traditional owners in management of marine resources; and
  - (f) facilitates a collaborative approach to management of the Great Barrier Reef World Heritage area with the Queensland government.

The Authority's vision for the Great Barrier Reef is:

**A healthy Great Barrier Reef for future generations**

To make the vision a reality, the Authority will focus its management on achieving four goals:

- protecting and restoring the Reef's ecosystem health and biodiversity
- safeguarding the Reef's heritage values
- ensuring use is ecologically sustainable and benefits current and future generations
- reducing cumulative impacts.



These goals are not mutually exclusive. In particular, the goal of protecting and restoring ecosystem health and biodiversity is fundamental to both safeguarding heritage, particularly Indigenous heritage values, and ensuring ecologically sustainable use. Success in achieving these goals depends on cumulative impacts from all sources being reduced.

## 2.5 Intergovernmental agreement

Since commencement of the Act in 1975, the Australian and Queensland governments have worked in a long-term partnership to protect and manage the Region. This cooperative approach was initially formalised by the Emerald Agreement in 1979 and reaffirmed in the *Great Barrier Reef Intergovernmental Agreement* signed in 2009. The objective of this agreement is to ensure an integrated and collaborative approach is taken by the Australian and Queensland governments to manage marine and land environments within and adjacent to the Great Barrier Reef World Heritage Area so as to:

- provide for the long-term protection and conservation of the environment and biodiversity of the Great Barrier Reef ecosystem, as encompassed by the World Heritage Area, and its transmission in good condition to future generations
- allow ecologically sustainable use of the Great Barrier Reef ecosystem subject to the overarching objective of long-term protection and conservation
- provide for meeting Australia's international responsibilities for the World Heritage Area under the World Heritage Convention.

The Field Management Program, established through the intergovernmental agreement, is a jointly-funded, cooperative partnership between the Authority and the Queensland Government. It undertakes operations and routine day-to-day management activities in the Marine Park, the adjacent Queensland Great Barrier Reef Coast Marine Park and on national park islands.



### 3 Proposed program

#### 3.1 Protecting matters of national environmental significance

In fulfilling its responsibilities under the Act, the Authority seeks to achieve the long-term protection and ecologically sustainable use of the Great Barrier Reef for all Australians and the international community.

Into the future, the Authority will integrate this responsibility with the achievement of outcomes for the protection of matters of national environmental significance in the Region as set out in Table 1.

**Table 1 Outcomes for matters of national environmental significance relevant to the Region**

These outcomes have been adapted from the Australian Government’s draft Framework of Standards for Accreditation of Environmental Approvals under the *Environment Protection and Biodiversity Conservation Act 1999*.

Matter of national environmental significance	Outcome
World heritage properties	The outstanding universal value of the Great Barrier Reef World Heritage Area is identified, protected, conserved, presented, rehabilitated and passed on to future generations.
Great Barrier Reef Marine Park	The environmental, biodiversity and heritage values of the Great Barrier Reef Marine Park are protected and conserved; use is ecologically sustainable; and the community is engaged in its protection and management.
National heritage places	The outstanding value to the nation of Great Barrier Reef national heritage place is identified, protected, conserved, presented and passed on to future generations of Australians.
Commonwealth marine areas	The ecosystem functioning and integrity of the Commonwealth marine area in the Great Barrier Reef Region are maintained and enhanced in full conformity with relevant plans.
Listed migratory species	The survival and conservation status of listed migratory species within the Great Barrier Reef Region and their critical habitat is promoted and enhanced, consistent with Australia’s international obligations.
Listed threatened species and ecological communities	The survival and conservation status of listed species within the Great Barrier Reef Region is promoted and enhanced, including through the conservation of critical habitat and other measures contained in any recovery plans, threat abatement plans or conservation advices.
Wetlands of international importance	The ecological character of the wetland of international importance within the Great Barrier Reef Region is maintained, and conservation and wise and sustainable use of the wetland is promoted for the benefit of humanity in a way that is compatible with maintenance of the natural properties of the ecosystem. This is to be achieved through the implementation of ecosystem approaches, within the context of sustainable development.

The high level outcomes outlined above will be supported by a comprehensive suite of ‘operational level’ outcomes for the values and processes which underpin matters of national environmental significance and targets to guide management (see Section 5.2.1).

Combined, this approach provides a comprehensive basis for ensuring all matters of national environmental significance, including attributes central to the Reef’s outstanding universal value, are explicitly considered in the Authority’s decision making processes.

## 3.2 Program elements

The strategic assessment demonstrated that the Authority’s management is effective for activities within the Region for which the Authority has direct jurisdictional control. However, for more jurisdictionally complex issues, management is not keeping pace with the many impacts acting on the Region. Without substantial strengthening of the full scope of management arrangements, the Great Barrier Reef’s health is likely to continue to deteriorate, principally as a result of increasing external pressures.

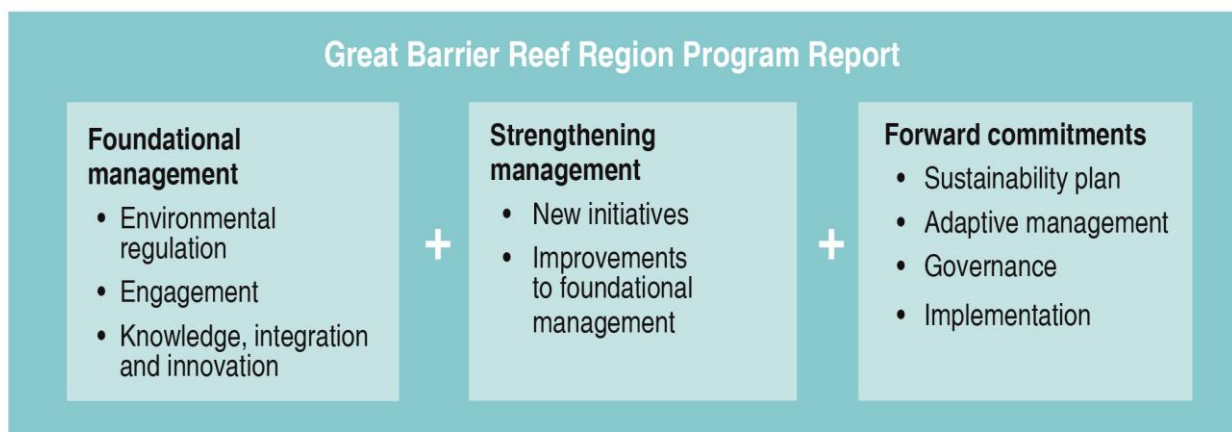
Successful achievement of outcomes will rely on a continued commitment to the strong **foundational management arrangements** already in place to protect biodiversity and heritage values and provide for ecologically sustainable use. The Authority will continue those current arrangements assessed to be effective in protecting matters of national environmental significance and necessary to carry out the functions under the Act.

In addition, the Authority recognises the results of the strategic assessment that demonstrate the need for additional management intervention to halt and reverse declines in ecosystem health and enhance the condition of matters of national environmental significance in the Region. To address these findings, the Authority will **strengthen management** by building on current management arrangements. A comprehensive suite of measures — including five **new initiatives** — are proposed to meet the challenges identified in the strategic assessment.

As the program has a timeframe of 25 years, the Authority has also identified **forward commitments** to improve integration of management arrangements across jurisdictions and inform adaptive management approaches across the life of the program.

The proposals to strengthen management, including the new initiatives, and the forward commitments form the basis of the Authority’s program for which it will be seeking endorsement by the Minister under the EPBC Act. If endorsed by the Minister, this program of improvements will strengthen protection and management of matters of national environmental significance in the Region and inform decision-making under the EPBC Act.

A description of the Authority’s management program, including its foundational management arrangements, measures to strengthen management and forward commitments, is provided in Chapters 4, 5 and 6.



**Figure 2 Great Barrier Reef Region Program Report**

The Authority’s program is made up of three elements. It has been developed from the Authority’s current management arrangements and the findings of the strategic assessment, including the recommendations for improvements to strengthen protection of all relevant matters of national environmental significance within the Region.



### 3.3 Reef-wide, regional and local scales

The *Operational guidelines for the implementation of the World Heritage Convention*<sup>4</sup> highlight the importance of protecting the integrity of a natural system. Integrity is a measure of wholeness and intactness of the natural system and its attributes. Taking into account the wide spatial variations reported in the strategic assessment, the Authority considers that to maintain and improve the Region's integrity, actions will be required at all geographic scales. There will be a need to maintain overall protection and management while working at finer scales to preserve areas of high conservation values and to focus more locally on high risk impacts.

The Authority intends to maintain its solid management foundation at a Reef-wide scale, continuing to implement comprehensive management arrangements such as regulations, zoning and permits that apply to all users in all areas.

Within the Region, the Authority intends to more explicitly adopt different management approaches between the northern third and the southern two-thirds. This recognises clear differences in the condition of values and the impacts affecting them.

In the north, values generally remain in good to very good condition — a result of the fewer impacts arising from the adjacent catchment and the remoteness of the area. In contrast, the southern two-thirds of the Region is generally in poorer condition, especially inshore. It is adjacent to more developed, more densely populated catchment areas with stronger economic growth and it supports a greater range of more intensive uses.

The importance of maintaining the health and resilience of the northern third is recognised and, for that area, the Authority intends to focus on safeguarding values and maintaining the area in a natural state. Further south, the Authority's emphasis will be on restoring the condition of values and reducing impacts, while continuing to provide for a range of sustainable use opportunities.

In addition, local variations require a bay-by-bay and reef-by-reef understanding of the ecosystem and its catchment. To this end, the Authority will support collaborative approaches working with government agencies, Traditional Owners, industries and communities to implement on-ground actions to address issues at a local scale. Local actions are particularly important in protecting and restoring the condition of adjacent terrestrial habitats, with the aim of improving both the quality of catchment run-off and connectivity between freshwater and marine habitats. They also play a role in managing or restoring marine areas of high conservation value or those subject to significant impacts. Already, local actions are being taken to control the serious effects of the current crown-of-thorns starfish outbreak.



## 4 Foundational management

The Authority's foundational management arrangements are built around three program areas:

- **Environmental regulation** — the Authority is the primary environmental regulator for the protection of the Great Barrier Reef. Through management tools such as regulations, the Zoning Plan, plans of management, permits and compliance, the Authority will continue to set and refine environmental standards necessary to achieve its goals, outcomes and targets for the values of the Region.
- **Engagement** — the Authority recognises that protection of the Great Barrier Reef requires local, national and international effort. It will continue to work with Traditional Owners, the community, business, industry and local government, together with Australian and Queensland government agencies to influence best practice and find pragmatic solutions to secure the future health of the Reef. By establishing ongoing and collaborative working relationships, the Authority aims to instil a sense of collective stewardship. This approach will provide a strong foundation for maintaining a balance between protecting the Reef, managing competing demands and supporting sustainable use.
- **Knowledge, integration and innovation** — the Authority strives to access and capture the best available science from a network of science providers, both nationally and internationally, as well as drawing on traditional ecological knowledge and information from the wider community. Filling key information gaps through targeted research will be critical, and monitoring will be used to assess the success of management measures.

### 4.1 Environmental regulation

The Authority's current regulatory arrangements, including its field management activities, provide a strong foundation for its future management program. In partnership with other relevant government agencies, the Authority will continue to use its comprehensive range of regulatory tools to fulfil its statutory obligations, and drive environmental performance, adapting them as required to address emerging risks and changing circumstances. The Great Barrier Reef Marine Park Act and its Regulations govern protection and management of the Great Barrier Reef Region. The Act provides the Authority's head of power to regulate certain activities in the Region. It provides for the Zoning Plan and plans of management, governs permitting decisions and allows for the development of policies to guide decision making and the application of fees and charges.

#### 4.1.1 Zoning Plan

The Great Barrier Reef Marine Park Zoning Plan 2003 is a fundamental tool in protecting the Region's biodiversity and allowing ecologically sustainable use and the continuation of traditional activities. In particular, the Zoning Plan provides protection of biodiversity values through a network of no-take zones for 33 per cent of its area and for at least 20 per cent of every bioregion. It achieves biodiversity protection by providing spatial control of use (predominantly extractive activities) and, to a lesser extent, access within the Great Barrier Reef Marine Park. In particular, the plan plays a key role in managing the location of fishing activities, separating competing uses and building the resilience of the Reef ecosystem. It establishes the need for permits for some uses in the Marine Park, such as tourism, infrastructure and research and the accreditation of other activities, such as Traditional Use of Marine Resources Agreements as well as low impact research and educational activities. It also provides for emergency responses in relation to incidents such as risks to human life, pollution threats or vessel groundings.

There are complementary zoning arrangements in adjacent areas under Queensland jurisdiction within the Great Barrier Reef Coast Marine Park.

#### 4.1.2 Plans of management

There are four plans of management for areas in the Marine Park, covering about eight per cent of the Marine Park. They set out specific management arrangements for areas, species, ecological communities or activities and are important in protecting biodiversity and heritage values while ensuring sustainable use (especially tourism and recreation activities). They complement zoning and

permitting arrangements. The plans for the Cairns Area, the Whitsundays and Hinchinbrook set out detailed management arrangements applying to all users of these areas, with a focus on protecting key natural values and allowing a range of uses. The Shoalwater Bay (Dugong) Plan of Management aims to manage activities in the bay that threaten its dugong population or impact on its seagrass meadows. Some provisions of each plan are legally binding.

### **4.1.3 Permits**

Permits facilitate opportunities for use of the Marine Park and are a tool to reduce impacts, separate potentially conflicting activities, collect data for planning, and monitor potentially damaging activities. They are issued mainly for marine tourism, research, dredging and infrastructure (for example jetties and marinas). Harvest (dive-based) fishery operations within the Marine Park require a Marine Park permit, as do netting activities (other than bait netting) in the Special Management Area within Princess Charlotte Bay. Developmental fishery programs also require a permit from the Authority. During 2011–12, 625 permissions were granted, 36 permissions were varied and 70 were transferred.

As part of the permitting process, there is a formal environmental impact assessment under the Act for evaluating the likely possible risks or impacts to the environment from a proposed activity or development. Common activities where a detailed assessment process is undertaken include, but are not limited to, the construction and operation of pontoons, jetties, moorings, pipelines and marinas as well as dredging. The assessment criteria include ecological, social and economic considerations, Traditional Owner interests, as well as current and future use of the proposed location. These assessments will continue to be informed by the best available information and include opportunities for public comment where the public's reasonable use of the Marine Park may be affected.

Joint Queensland Government–Authority permits may be issued for activities which operate across jurisdictions.

### **4.1.4 Traditional Owner agreements**

Formal Traditional Use of Marine Resources Agreements describe how Traditional Owner groups work with Australian and Queensland governments to manage traditional use activities in sea country. Indigenous Land Use Agreements are agreements between one or more native title groups and other people or parties about the use and management of land and waters.

The agreements address issues such as the sustainable take of culturally significant species and supporting Traditional Owner cultural practice in the conservation and management of the Great Barrier Reef. The agreements incorporate traditional and contemporary scientific knowledge and environmental management for the ongoing protection of the Great Barrier Reef and are used by Traditional Owners as a formal tool to conserve and protect species and ecosystems critical to the health of people, culture and country. Agreements can incorporate specific management strategies for the conservation and sustainable use of key species, as well as habitats. Other management activities that Traditional Owners may identify in the implementation plan for their agreement include restoring and maintaining waterways and coastal ecosystems; maintaining and protecting significant heritage values including sites; sharing and documenting traditional ecological knowledge, culture and language; and research and monitoring of sea country including through partnerships with managing agencies and leading scientific institutions.

There are currently six Traditional Use of Marine Resources Agreements — for Wuthathi, Lama Lama, Yuku-Baja-Muliku, Giringun, Woppaburra and Port Curtis Coral Coast. There is one Indigenous Land Use Agreement with the Kuuku Yau Traditional Owners. The agreements cover approximately 23 per cent of the Region's coast and about 12 per cent of its area.

### **4.1.5 Field management operations**

Field management activities, as part of the Field Management Program, underpin regulatory approaches. They are a significant proportion of the Authority's work program and are at the frontline of efforts to protect the Great Barrier Reef by ensuring use remains ecologically sustainable. Activities that support environmental regulation include: on-ground visitor management; monitoring and assessment of habitats and vulnerable species; incident response (for example, extreme weather events and shipping incidents); compliance and visitor infrastructure and facilities (refer Sections 4.1.6 and 4.1.7 below).

### 4.1.6 Compliance

Compliance activities — both through education and enforcement — encourage adherence to legal requirements such as those contained in permits, plans of management and zoning. These help to ensure balanced and sustainable use of the Marine Park. The Field Management Program plays a key role in compliance activities in the Region, including in relation to fishing. A cooperative multi-agency approach allows a broad range of legislation and compliance tools to be used, with vessel and aerial surveillance activities by all agencies coordinated by the Field Management Compliance Coordination Unit. The Authority works closely with Traditional Owners in relation to traditional use of marine resources and in managing any risks associated with poaching of species of conservation concern (for example, dugongs and green turtles), including through Indigenous community compliance liaison officers<sup>5</sup>. Activities under community-based programs, such as the Eyes and Ears Incident Reporting program, help inform compliance actions.

### 4.1.7 Site infrastructure

On-ground infrastructure is installed to manage use and protect values at individual sites throughout the Region. For example, facilities such as moorings, no-anchoring areas and transit lanes support sustainable use of popular sites within planning areas and elsewhere. Site infrastructure is installed and maintained by the Authority and the Queensland Government through the joint Field Management Program.

### 4.1.8 Fees and charges

Three main fees and charges apply in the Marine Park:

- The cost of assessing an application for a permit for commercial activities is partly recovered through payment of a permit application assessment fee.
- The environmental management charge applies to some commercial activities, primarily tourism operations, operating under a permit issued by the Authority. The revenue is applied to Marine Park management.
- Bonds (usually as a bank guarantee) may be held by the Authority to cover the risks associated with a proposed activity.

### 4.1.9 Policy

Developed by the Authority under section 7(4) of the Great Barrier Reef Marine Park Act, policies guide decision makers and the public. They are not legislative instruments. They detail the way in which the Authority intends to manage the Marine Park or perform its other functions and the way in which the Authority considers that the Act or other legislative instruments apply.

Types of policy documents include strategies, policies, site management arrangements, position statements and guidelines. Examples include policies on the management of tourism permits, dredging and spoil disposal, sewage discharges from marine outfalls, together with standards and guidelines such as the *Water quality guidelines for the Great Barrier Reef Marine Park, 2010*<sup>6</sup>.

## 4.2 Engagement

The Authority's non-regulatory approaches focus on enhancing protection measures within the Region and influencing drivers and activities which affect the Region but fall outside of the Authority's jurisdictional control. It recognises that protection of the Great Barrier Reef requires local, national and international effort.

The Authority will continue to work with Traditional Owners, the community, business, industry and government agencies to encourage best practice and find pragmatic solutions to secure the future health of the Reef. By establishing ongoing and collaborative working relationships, the Authority aims to influence actions which affect the Reef and instil a sense of collective stewardship.

The Authority's policies not only guide its regulatory decision making, they also inform the Authority's partners and the wider community about how the Authority intends to manage the Region and perform its other functions. They are central to developing and maintaining open and effective engagement. For

example the *Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012–2017*<sup>7</sup> and the *Great Barrier Reef Biodiversity Conservation Strategy 2013*<sup>8</sup> set out the Authority's approach to addressing key issues where partnerships and engagement are fundamental.

#### **4.2.1 Partnerships**

Partnerships are formal arrangements, often executed through a memorandum of understanding or an agreement, to improve management outcomes for the Region. They detail how the parties will work together to advance their mutual interests.

The partnership between the Australian and Queensland governments established through the Great Barrier Reef Intergovernmental Agreement 2009 is fundamental to management of the Reef. The agreement underpins the many joint Australian and Queensland government programs and management arrangements which are central to the protection of the Reef, including the joint Field Management Program.

The Authority has a number of other formal partnerships with individual government agencies, industry bodies, Traditional Owners and community groups. Examples include: the Reef Rescue marine monitoring program which is a commitment under the *Reef Water Quality Protection Plan*<sup>9</sup> (Reef Plan); and the High Standard Tourism program<sup>10</sup> which is aimed at achieving best practice standards and governed by a deed of agreement with Ecotourism Australia, the certification body.

#### **4.2.2 Advisory role**

As highlighted in the strategic assessment, many of the impacts affecting the values of the Region arise from activities that are beyond the direct jurisdiction of the Authority. Therefore, in addition to implementing formal agreements with key partners, the Authority works directly with a range of Australian and Queensland government agencies, local government and industries by providing technical and policy advice in relation to matters that affect the Reef.

#### **4.2.3 Education and community awareness**

The Reef supports a diverse range of commercial and recreational users. It is also a place of intense local, regional, national and international interest. Programs to inform and motivate Reef users, visitors and the local community about the Great Barrier Reef and its protection and management underpin much of the Authority's management. Such activities encourage compliance with management principles and legislation, and inform the community about ways they can contribute to improving the future health of the Reef.

The vast distances between major coastal communities adjacent to the Region means that Community Access Points, such as at boating and fishing outlets, along the coastline are essential in providing local access to information, including zoning maps and educational material.

The Authority's Reef HQ Aquarium, located in Townsville, provides people of all ages and physical abilities the chance to see and gain an appreciation for a living coral reef ecosystem, what makes it special and why it needs to be protected. More than 3.5 million local, national and international visitors have visited the facility since it opened in 1987, and visitation continues to increase. Since 2009, the facility's reef videoconferencing program has showcased the living reef to more than 700 locations nationally and internationally, directly engaging more than 55,000 people.

#### **4.2.4 Stewardship and best practice**

The Authority works with its stakeholders to build enduring relationships and provides the opportunity to contribute to protection and management. There are a suite of stewardship and best practice initiatives with local government, volunteer groups, schools, tourism operators, fishers, farmers and graziers. Examples include the Reef Guardian program which is a voluntary stewardship program for schools, local government, fishers and farmers; Eyes and Ears incident reporting program; Pro-vision Reef Stewardship Action Plan; High Standard Tourism program; and Responsible Reef Practices for tourism and recreation.

The Authority also provides technical expertise and advice to its stakeholders, including local government, natural resource management bodies and industry, to promote collaborative arrangements which encourage development and adoption of best environmental practices.

## 4.2.5 Consultation

The Authority seeks public comment on significant changes to its management arrangements, for example in the development or amendment of its Zoning Plan, plans of management and policies. It also publicly advertises applications to undertake activities in the Marine Park that are likely to affect the public's reasonable use of a part of the Marine Park.

The Authority maintains Reef Advisory Committees to advise the Authority on its management actions in relation to key issues. They are competency-based, comprising a cross-section of stakeholder interests. At a local level, the Authority receives advice from voluntary, community-based Local Marine Advisory Committees.

## 4.3 Knowledge, integration and innovation

A comprehensive and up-to-date understanding about the Great Barrier Reef, its values, the processes that support it and the impacts that are affecting it is fundamental to managing the Region. Within the Region, knowledge and understanding is improved through the activities of a wide range of research providers such as the Australian Institute of Marine Science (AIMS), CSIRO, government agencies (such as the Authority, the Queensland Parks and Wildlife Service and the Queensland Department of Agriculture, Fisheries and Forestry) and universities, as well as by commercial companies and consultants, stakeholders, Traditional Owners and community members.

### 4.3.1 Identifying values

The Authority manages a vast amount of information about the Region's biodiversity and is placing an increasing focus on understanding heritage values and community benefits derived from the Region's environment. It also applies the latest available information and expert knowledge on impacts on those values to assess their condition and trend. The strategic assessment has provided an opportunity to more systematically and comprehensively identify, collate and present that information, particularly spatially.

Maintaining and enhancing collaboration with other agencies and research bodies is an important aspect of the Authority's program, helping to ensure all information relevant to the Region's values is available for management planning and decision making.

### 4.3.2 Research and monitoring

The Authority undertakes, commissions, influences or is a partner in a wide range of research and monitoring activities relating to the Region. The outcomes of these activities are designed to better inform decisions on protection and management of the Great Barrier Reef. Key information needs to improve management of the area are identified in the Authority's *Scientific information needs for the management of the Great Barrier Reef Marine Park 2009–2014*<sup>11</sup>. This document, along with partnership agreements with key research institutions, provides the basis for focusing research on matters relevant to the long-term protection and management of the Reef.

Examples of the Authority's activities include:

- guiding, coordinating and supporting relevant environmental, social and economic research to improve understanding of the risks facing the Reef and their likely effects
- investigating impacts caused by major storms,<sup>12</sup> flooding, mass bleaching,<sup>13</sup> outbreaks of pests and diseases,<sup>14</sup> shipping incidents and direct use
- monitoring the condition of the environment
- monitoring impacts and drivers of environmental change.

### **4.3.3 Reporting**

The Authority has a number of statutory, national and international obligations to report on the Great Barrier Reef, its condition and management arrangements. Analysis and reporting also provides direction for strategic planning within the agency. Examples of reporting include:

- an annual report to the Parliament of Australia
- five-yearly reporting, including on reef condition, resilience and management effectiveness, through the Outlook Report — a requirement under the Great Barrier Reef Marine Park Act
- responses to government priorities, for example this strategic assessment
- international reporting obligations such as contributing to world heritage reporting.

### **4.3.4 Building corporate knowledge**

Based on nearly 40 years of managing the Region, the Authority has developed an extensive body of corporate knowledge about the Region and its management. This is also the case for many of its management partners, such as the Queensland Parks and Wildlife Service and natural resource management bodies. The knowledge is applied to all aspects of the Region's management and is also available to other partners and stakeholders to support their contributions to protecting the Region's values.



## 5 Strengthening management

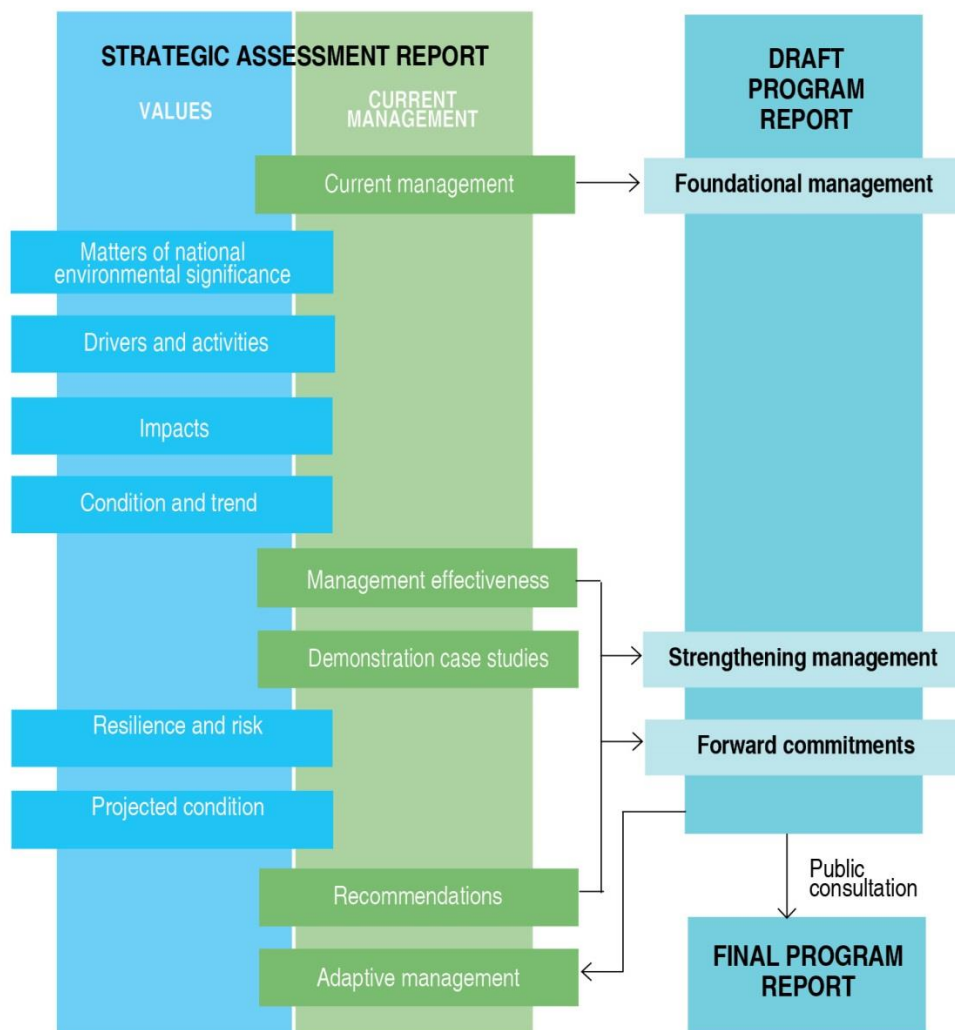
### 5.1 Findings from the strategic assessment report

The independent assessment of management effectiveness conducted as part of the strategic assessment for the Region found that actions to date have delivered benefits for the Reef’s resilience, however more is required to halt and reverse observed declines in Reef health.

The assessors considered that the Authority’s management of activities for which it has jurisdiction within the Region is effective. However, there are management effectiveness challenges for those issues which are broadscale — often extending well beyond the Region — or are complex socially, biophysically and across jurisdictions. These include ports, shipping, climate change and extreme weather, coastal development and catchment run-off. For commercial and recreational fishing, the reviewers identified particular challenges in monitoring and compliance.

The independent reviewers assessed the management of consequential and cumulative impacts, the application of socio-economic and Indigenous knowledge, and the setting of targets to benchmark performance as only partially effective for most management topics.

The findings of the independent assessment informed development of the recommended improvements to management presented in the strategic assessment report and summarised in Appendix 2. In turn, these recommendations have informed the suite of measures to strengthen the protection of matters of national environmental significance outlined in this section (Figure 3).



**Figure 3 Relationship between Strategic Assessment Report and Program Report**

The findings and recommendations of the Great Barrier Reef Region Strategic Assessment Report have informed development of the measures to strengthen the Authority’s management arrangements.

## 5.2 Proposed new initiatives

Building on the findings of the strategic assessment, the Authority will deliver a number of new initiatives to enhance protection and reduce impacts on values relevant to matters of national environmental significance. They include:

- adopting a **management framework based on outcomes and targets** to guide decision making and actions required to maintain and restore the condition of values
- developing a **cumulative impact assessment policy** to inform a transparent, consistent and systematic approach to the assessment of cumulative impacts across jurisdictions from activities within and adjacent to the Region
- developing a **net benefit policy** to guide actions required to restore ecosystem health, improve the condition of values and manage financial contributions to that recovery
- implementing a **Reef recovery program** to restore sites of high environmental value, applying the measures above and cooperative management approaches
- implementing a Reef-wide **integrated monitoring and reporting program** which directly links to the outcomes-based management framework and underpins the Authority's adaptive management approach.

Building upon the Authority's foundational management arrangements, these initiatives will drive actions required to build a healthy and resilient Great Barrier Reef and enhance protection of matters of national environmental significance.

### 5.2.1 A management framework based on outcomes and targets

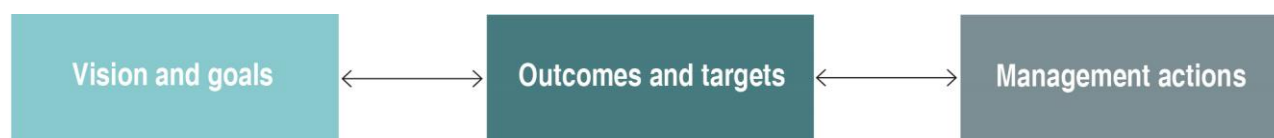
To achieve its goals and guide its actions, the Authority will implement a management framework that is focussed on clear outcomes (Section 5.2.2) and driven by specific measurable targets (Section 5.2.3). This comprehensive and systematic framework will guide all parties working together to protect matters of national environmental significance in the Region.

This approach was supported by the World Heritage Committee in its 2012 decision in relation to the Great Barrier Reef World Heritage Area. The Committee recommended the collaborative development and adoption of clearly defined and scientifically justified targets for improving the property's state of conservation and enhancing its resilience. The Committee also recommended that plans, policies and development proposals affecting the property demonstrate a positive contribution to the achievement of those targets, and an overall net benefit to the protection of outstanding universal value.

The strategic assessment found that under current management arrangements, the projected condition of many of the Region's values was likely to decline over the life of the management program. Outcomes and targets will provide operational level guidance for improving management actions and therefore improving the Reef's condition into the future. They link the Authority's vision and goals to its management actions (Figure 4) and underpin the Authority's adaptive management and continuous improvement cycle. They are designed to ensure that Reef conditions are below critical thresholds for environment (that is, those levels beyond which there is a significant risk that ecosystem health and natural processes will not be sustained), and to provide a net benefit to the environment.

Outcomes provide a comprehensive basis for decision making as they apply to the full suite of values and ecosystem processes relevant to matters of national environmental significance.

Targets provide focus for management actions, applying to a subset of key values, processes and impacts. They have been developed for both the protection and restoration of values and ecosystem processes, and the reduction of impacts. This recognises that the cause-and-effect relationship between impacts and values is complex and that a multi-pronged approach is required – tackling impacts at their source and directly enhancing the condition of values.



**Figure 4 Role of outcomes and targets**

Outcomes and targets provide a critical link between the Authority's vision and goals, which define the Authority's strategic intent, and its management actions.

## 5.2.2 Outcomes for the condition of values

### Purpose

To develop a comprehensive suite of outcomes for the condition of the Region's values and ecosystem processes to:

- provide direct links between the Region's condition and the Authority's management program in order to fulfil international and national obligations to protect and restore the Reef
- ensure all matters of national environmental significance, including the Reef's outstanding universal value, are explicitly considered in the Authority's decision-making processes.

### Context

To achieve a healthy Great Barrier Reef for future generations, there is a need to move beyond simply maintaining its current condition. Emphasis must be placed on actively restoring functional habitats and ecosystems that support and improve its health. This includes looking beyond the marine environment to the Reef's coastal linkages.

To this end, the Authority will implement a comprehensive outcomes-based management framework, explicitly identifying the desired outcomes for values and ecosystem processes relevant to matters of national environmental significance. These outcomes will provide a framework for all parties to work together to maintain and restore the condition of the Great Barrier Reef.

### Defining the outcomes

Outcomes will apply to the full suite of values and ecosystem processes relevant to matters of national environmental significance (see Appendix 3).

The desired outcomes have been developed to meet international and national obligations to protect the Reef's environment, including:

- obligations under the World Heritage Convention *to protect, conserve, present, rehabilitate and transmit to future generations the outstanding universal value of the Great Barrier Reef World Heritage Area and to ensure the conditions of integrity — at the time of listing, are maintained or enhanced over time*
- commitments under the Convention on Biological Diversity<sup>15</sup> *to respect, preserve and maintain the knowledge, innovations and practices of Indigenous communities*
- objectives under the EPBC Act and Great Barrier Reef Marine Park Act *to protect the environment, especially those aspects of the environment that are matters of national environmental significance, and to provide for the long-term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region*
- objectives under the Great Barrier Reef Intergovernmental Agreement *to provide for the long-term protection and conservation of the environment and biodiversity of the Great Barrier Reef ecosystem, as encompassed by the Great Barrier Reef World Heritage Area, and its transmission in good condition to future generations.*

These obligations can be summarised as a responsibility to 'maintain and enhance' the condition of the Region's values and to 'transmit' those values in good or very good condition to future generations.

The desired outcome for each value is informed by the assessment of its current condition and trend as evaluated in the strategic assessment. This approach recognises that the condition and trend of each value and process varies across the Region.

The outcome for each value and process is a combination of the strategic assessment findings on condition and trend and the international and national obligations to protect them (Table 2).

For example, if a value is assessed to be good condition, the outcome is that its condition is maintained and enhanced. However, if a value is assessed to be in poor condition, the outcome is that its condition is restored to good condition. If the trend of the value is assessed to be declining, the outcome is that the decline is halted and reversed.

**Table 2 Desired outcomes for the Region’s values and processes**

The outcomes reflect international and national obligations to protect the Region’s environment, based on the current condition and trend.

Current condition	Desired outcome
Very good	The condition is maintained
Good	The condition is maintained and enhanced
Poor	The condition is restored to Good
Very poor	The condition is restored to Good
Trend in condition	Desired outcome
Improving	The trend is maintained
Stable	The trend is maintained and improved
Deteriorating	The decline is halted and reversed

Using this approach the Authority has identified desired outcomes for the full suite of values and ecosystem processes relevant to matters of national environmental significance. Table 3 outlines the outcomes for the Region’s values and processes based on the assessment of current condition. Table 4 specifies the outcomes for the Region’s values and processes based on the assessment of current trend in condition.

Outcomes for geomorphological features, heritage values and community benefits derived from the environment are Reef-wide — a reflection of current understanding for these values. Those for biodiversity values and environmental processes describe regional differences in four broad geographic areas: northern inshore (NI), northern offshore (NO), southern inshore (SI), southern offshore (SO). While the boundaries are not precisely defined, the north-south dividing line is in the vicinity of Port Douglas, which marks the broad division between the more developed and less developed catchments adjacent to the Region. The inshore-offshore dividing line is generally about 20 kilometres offshore. It corresponds to enclosed coastal and open coastal water bodies described in the *Water Quality Guidelines for the Great Barrier Reef Marine Park*<sup>6</sup> but also includes areas further offshore that are habitats for recognised inshore specialist species such as dugongs.

Regionally-specific standards and guidelines will be developed to account for local variability in the condition of values (see Section 5.2.6 and Section 5.3.1).

In summary, outcomes for the Region’s values and processes highlight the need to:

- restore the condition of values and processes in poor or very poor condition in the southern two-thirds of the Region, including that of critical habitats such as coral reefs and seagrass meadows and ecological processes such as connectivity and recruitment
- maintain and enhance the condition of values and processes in the northern third of the Region.

### Applying and reviewing the outcomes

Desired outcomes for values and processes will guide the Authority’s planning and assessment decision-making processes. For example, if a value or process is likely to be affected by a planning decision or development proposal, the effect of such a decision should be consistent with achieving the identified outcome for the affected value or process.

Outcomes will inform the Authority’s adaptive management measures and public reporting processes (see Section 6.2). They will inform implementation of the net benefit policy (see Section 5.2.5) and actions under the Reef Recovery program (see Section 5.2.6). They will also provide a framework for a

more integrated and systematic approach to the acquisition and analysis of knowledge relevant to management of the Region's values (see Section 5.2.7).

Outcomes are a statement of management intent for the condition of the value over the life of the Program. For some values, achieving the desired outcomes may take decades.

Desired outcomes will be reviewed every five years in line with the Authority's Outlook Report cycle — a statutory reporting process which comprehensively assesses all the Region's values taking into account the best available information and consensus advice from experts in relevant fields. This process will include explicit reporting of factors influencing the achievement of outcomes, including those beyond the management control of the Authority.

The Authority will work with Australian and Queensland government agencies to seek broader uptake of the desired outcomes, including during the assessment of proposals to undertake activities with the potential to affect the Great Barrier Reef, and in assessments of management effectiveness. This would ensure a transparent, consistent and systematic approach to the protection of matters of national environmental significance and the values relevant to them in decision making across jurisdictions.

#### **Relevant recommendations of the strategic assessment**

The recommendation of the strategic assessment relevant to this new initiative is:

- **REC25:** Establish a management framework with clear outcomes and targets for the protection of values and the management of impacts, including cumulative impacts.

**Table 3 Desired outcomes for the condition of the Region’s values and processes**

Outcomes have been defined by linking international and national obligations to protect the Region’s environment to the assessment of the current condition of the Region’s values and processes.

NI – Northern Inshore; NO – Northern Offshore; SI – Southern Inshore, SO – Southern Offshore

Current condition	Biodiversity	Geomorphological features	Heritage values and community benefits	Environmental processes
	<b>Desired outcome:</b> The condition of these values and processes is maintained			
Very good	<ul style="list-style-type: none"> <li>Seagrass meadows and seagrasses (NI, NO)</li> <li>Beaches and coastlines (NI)</li> <li>Mangrove forests and mangroves (NI)</li> <li>Halimeda banks (NO)</li> <li>Macroalgae (NI, NO, SO)</li> <li>Benthic microalgae (NI, NO, SO)</li> <li>Other invertebrates (NI, NO, SO)</li> <li>Plankton and microbes (NI, NO, SO)</li> <li>Bony fish (NI, NO)</li> <li>Deeper reefs (&gt;30m) (NO)</li> <li>Continental slope (NO)</li> </ul>	<ul style="list-style-type: none"> <li>Channels and canyons</li> <li>Halimeda banks</li> </ul>	<ul style="list-style-type: none"> <li>Enjoyment</li> <li>Personal connection</li> <li>Health benefits</li> </ul>	<ul style="list-style-type: none"> <li>Waves, currents and tides (NI, NO)</li> <li>Sedimentation (NI, NO)</li> <li>Light (NI, NO)</li> <li>Freshwater inflow and salinity (NO, SO)</li> <li>Microbial processes (NI, NO, SO)</li> <li>Connectivity (NI, NO)</li> </ul>
	<b>Desired outcome:</b> The condition of these values and processes is maintained and enhanced			
Good	<ul style="list-style-type: none"> <li>Islands (NI, NO, SI, SO)</li> <li>Beaches and coastlines (SI)</li> <li>Benthic microalgae (SI)</li> <li>Macroalgae (SI)</li> <li>Coral reefs and corals (NI, NO)</li> <li>Mangrove forests and mangroves (SI)</li> <li>Deeper reefs (&gt;30 m) (SO)</li> <li>Lagoon floor</li> <li>Shoals</li> <li>Continental slope</li> <li>Open waters (NI, NO, SO)</li> <li>Plankton and microbes (SI)</li> <li>Bony fish (SI, SO)</li> <li>Estuarine crocodiles</li> <li>Whales (NI, SI)</li> <li>Dolphins (NI, NO, SO)</li> <li>Dugongs (NI)</li> <li>Other invertebrates (SI)</li> <li>Sharks and rays (NO, SO)</li> <li>Sea snakes</li> <li>Marine turtles (SI, SO)</li> <li>Seabirds (NI, SI)</li> </ul>	<ul style="list-style-type: none"> <li>Coral reefs</li> <li>Islands and shorelines</li> <li>River deltas</li> </ul>	<ul style="list-style-type: none"> <li>Indigenous cultural practices, observances, customs and lore</li> <li>Places of historic significance — historic shipwrecks</li> <li>Places of historic significance — World War II features and sites</li> <li>Places of historic significance — lightstations</li> <li>Places of historic significance — other</li> <li>Places of scientific significance</li> <li>Places of social significance — iconic sites</li> <li>Income</li> <li>Employment</li> <li>Understanding and appreciation</li> <li>Access to Reef resources</li> <li>Aesthetics</li> </ul>	<ul style="list-style-type: none"> <li>Waves, currents and tides (SI, SO)</li> <li>Cyclones (NI, NO)</li> <li>Wind</li> <li>Sedimentation (SO)</li> <li>Sea level</li> <li>Light (SO)</li> <li>Nutrient cycling (NI, NO, SO)</li> <li>Ocean acidity</li> <li>Freshwater inflow and salinity (NI)</li> <li>Microbial processes (SI)</li> <li>Particle feeding</li> <li>Primary production — pelagic (NI, NO, SO)</li> <li>Primary production — benthic (NI, NO)</li> <li>Herbivory (NI, NO, SO)</li> <li>Predation</li> <li>Symbiosis (NI, NO)</li> <li>Competition (NI, NO, SO)</li> <li>Connectivity (SO)</li> <li>Recruitment (NI, NO, SO)</li> <li>Reef building (NI, NO)</li> </ul>
	<b>Desired outcome:</b> The condition these values and processes is restored to Good			
Poor	<ul style="list-style-type: none"> <li>Open waters (SI)</li> <li>Seagrass meadows and seagrasses (SO)</li> <li>Terrestrial ecosystems that support the Region</li> <li>Sharks and rays (NI, SI)</li> <li>Marine turtles (NI, NO)</li> <li>Seabirds (NO, SO)</li> <li>Shorebirds (SI, NI)</li> <li>Dolphins (SI)</li> <li>Coral reefs (SO)</li> </ul>	<ul style="list-style-type: none"> <li>Seagrass meadows</li> </ul>	<ul style="list-style-type: none"> <li>Indigenous sacred sites, sites of particular significance, places important for cultural tradition</li> <li>Indigenous stories, songlines, totems and languages</li> <li>Indigenous structures, technology, tools and archaeology</li> </ul>	<ul style="list-style-type: none"> <li>Sedimentation (SI)</li> <li>Sea temperature</li> <li>Light (SI)</li> <li>Nutrient cycling (SI)</li> <li>Freshwater inflow and salinity (SI)</li> <li>Primary production — pelagic (SI)</li> <li>Primary production — benthic (SI, SO)</li> <li>Herbivory (SI)</li> <li>Symbiosis (SI, SO)</li> <li>Competition (SI)</li> <li>Connectivity (SI)</li> <li>Recruitment (SI)</li> <li>Reef building (SI, SO)</li> </ul>
	<b>Desired outcome:</b> The condition of these values is restored to Good			
Very poor	<ul style="list-style-type: none"> <li>Seagrass meadows and seagrasses (SI)</li> <li>Coral reefs (&lt;30 m) and corals (SI)</li> <li>Dugongs (SI)</li> </ul>	<ul style="list-style-type: none"> <li>Seagrass meadows</li> </ul>		

**Table 4 Desired outcomes for the trend of the Region's values and processes**

Outcomes have been defined by linking international and national obligations to the assessment of the current trend of the Region's values and processes.

NI – Northern Inshore; NO – Northern Offshore; SI – Southern Inshore, SO – Southern Offshore

Current trend	Biodiversity	Geomorphological features	Heritage and community values	Environmental processes
Improving	<b>Desired outcome:</b> The trend in condition of these values is maintained			
	<ul style="list-style-type: none"> <li>• Estuarine crocodiles</li> <li>• Whales</li> </ul>			
Stable	<b>Desired outcome:</b> The trend in condition of these values is maintained and improved			
	<ul style="list-style-type: none"> <li>• Islands (NI, NO, SO)</li> <li>• Beaches and coastlines (NI)</li> <li>• Mangrove forests and mangroves</li> <li>• Seagrass meadows and seagrasses (NI, NO, SO)</li> <li>• Coral reefs and corals (NI, NO)</li> <li>• Deeper reefs (&gt;30m)</li> <li>• Lagoon floor</li> <li>• Shoals</li> <li>• <i>Halimeda</i> banks</li> <li>• Open water (NI, NO, SO)</li> <li>• Continental slope</li> <li>• Macroalgae</li> <li>• Benthic microalgae</li> <li>• Other invertebrates (NI, NO, SO)</li> <li>• Plankton and microbes</li> <li>• Bony fish</li> <li>• Marine turtles (SI, SO)</li> <li>• Seabirds (NI, SI)</li> <li>• Dolphins (NI, NO, SO)</li> <li>• Dugongs (NI)</li> </ul>	<ul style="list-style-type: none"> <li>• Channels and canyons</li> <li>• <i>Halimeda</i> banks</li> </ul>	<ul style="list-style-type: none"> <li>• Indigenous cultural practices, observances, customs and lore</li> <li>• Places of historic significance — historic shipwrecks</li> <li>• Places of historic significance — WWII features and sites</li> <li>• Places of historic significance — other</li> <li>• Places of scientific significance</li> <li>• Income</li> <li>• Employment</li> <li>• Understanding and appreciation</li> <li>• Enjoyment</li> <li>• Access to Reef resources</li> <li>• Personal connection</li> <li>• Health benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Waves, currents and tides</li> <li>• Cyclones (NI, NO)</li> <li>• Sedimentation (NI, NO, SO)</li> <li>• Light (NI, NO, SO)</li> <li>• Nutrient cycling (NI, NO, SO)</li> <li>• Freshwater inflow and salinity (NO, SO)</li> <li>• Microbial processes</li> <li>• Particle feeding</li> <li>• Primary production — pelagic (NI, NO, SO)</li> <li>• Primary production — benthic</li> <li>• Herbivory (NI, NO, SO)</li> <li>• Predation</li> <li>• Symbiosis (NI, NO)</li> <li>• Competition (NI, NO, SO)</li> <li>• Connectivity (NI, NO, SO)</li> <li>• Recruitment (NI, NO, SO)</li> </ul>
Deteriorating	<b>Desired outcome:</b> The decline is halted and reversed			
	<ul style="list-style-type: none"> <li>• Islands (SI)</li> <li>• Beaches and coastlines (SI)</li> <li>• Seagrass meadows and seagrasses (SI)</li> <li>• Coral reefs (&lt;30m) and corals (SI, SO)</li> <li>• Open waters (SI)</li> <li>• Terrestrial ecosystems that support the Region</li> <li>• Other invertebrates (SI)</li> <li>• Sharks and rays</li> <li>• Sea snakes</li> <li>• Marine turtles (NI, NO)</li> <li>• Seabirds (NO, SO)</li> <li>• Shorebirds (NI, SI)</li> <li>• Dolphins (SI)</li> <li>• Dugongs (SI)</li> </ul>	<ul style="list-style-type: none"> <li>• Coral reefs</li> <li>• Islands and shorelines</li> <li>• River deltas</li> <li>• Seagrass meadows</li> </ul>	<ul style="list-style-type: none"> <li>• Indigenous sacred sites, sites of particular significance, places important for cultural tradition</li> <li>• Indigenous stories, songlines, totems and languages</li> <li>• Indigenous structures, technology, tools and archaeology</li> <li>• Places of historic significance — lightstations</li> <li>• Places of social significance — iconic sites</li> <li>• Aesthetics</li> </ul>	<ul style="list-style-type: none"> <li>• Cyclones (SI, SO)</li> <li>• Wind</li> <li>• Sedimentation (SI)</li> <li>• Sea level</li> <li>• Sea temperature</li> <li>• Light (SI)</li> <li>• Nutrient cycling (SI)</li> <li>• Ocean acidity</li> <li>• Freshwater inflow and salinity (NI, SI)</li> <li>• Primary production — pelagic (SI)</li> <li>• Herbivory (SI)</li> <li>• Symbiosis (SI, SO)</li> <li>• Competition (SI)</li> <li>• Connectivity (SI)</li> <li>• Recruitment (SI)</li> <li>• Reef building</li> </ul>

### 5.2.3 Targets to guide management

#### Purpose

The purpose of the targets is to:

- guide and focus the management activities of the Authority and its partners
- allow the effectiveness of management activities to be measured.

Designed to support achievement of management outcomes, specific and measurable targets will focus management efforts on actions critical to the protection of matters of national environmental significance.

#### Context

The strategic assessment has shown that the health of the Great Barrier Reef is declining, particularly inshore areas in the southern two-thirds of the Region. A business-as-usual approach to managing impacts will not be enough. A strong commitment to the future protection and restoration of the Region's values is required across all levels of government.

To this end, it is proposed to extend the theme of 'halt and reverse the decline' that began with water quality, and its associated target-driven framework, to other areas of management critical to the health of the Great Barrier Reef.

#### Developing targets

The development of targets will be a collaborative process between the Australian and Queensland governments, stakeholders and the broader community based on the successful Reef Plan model.

It is intended that targets will be developed for a suite of key indicators. They will guide management actions required to:

- build the health and resilience of habitats and species
- restore connectivity and improve the functioning of coastal and inshore ecosystems
- enhance understanding and protection of Indigenous and historic heritage values
- ensure use of the Region remains ecologically sustainable and continues to deliver community benefits
- reduce high risk impacts and cumulative impacts affecting the Region.

The targets will be specific, measurable and time bound. They will establish a clear path forward for management activities driving improvements in outcomes.

A preliminary set of targets has been developed for comment as part of the strategic assessment process (Table 5). They include targets for biodiversity (habitats and species), heritage values and community benefits, as well as for some impacts from direct use that are rated as high risk. They are intended to complement Reef Plan water quality targets<sup>9</sup>.

While the Authority intends to work towards restoring the values of the Great Barrier Reef that have declined, it is not possible to quantify the pre-European baseline conditions of these values. As a result, the proposed targets aim to maintain and enhance values and reduce impacts to levels that are predicted to ensure long-term protection of the biodiversity and heritage values of the Region and the community benefits they provide. For habitats and species, the targets are based on either the best available understanding of what is required to return each value to good condition, or on available baseline information from about the time of world heritage listing. For heritage values, the limited understanding of both previous and current conditions dictates that the targets are more focused on management actions that can be taken to both better understand the values and protect them, than on the condition of the values themselves.

#### Applying and reviewing the targets

It is intended that targets will support a collaborative approach to implementing management actions required to protect matters of national environmental significance, including the property's outstanding universal value.

They will serve to focus management activities and enable all parties with a stake in protection and management of the Great Barrier Reef to more clearly and specifically report on their contributions and effectiveness.

Achievement of targets will be monitored and reported on as part of the integrated monitoring program. The metrics to be monitored for each target will be based upon best available science.



It is intended that the targets be collaboratively reviewed and updated every five years as part of the Authority's Outlook reporting cycle and Reef Plan reporting, as well as more frequently as understanding improves and circumstances change.

**Table 5 Preliminary targets for Great Barrier Reef values and impacts**

Adopting the approach used in Reef Plan as a model, the Authority proposes to work with relevant partners to develop and implement measurable targets. A preliminary set of targets has been developed for the protection of key habitats, species, heritage and community values, and the reduction of impacts.

Values and impacts	Preliminary targets for 2019
<b>Habitats</b>	
<b>Coral reefs and corals</b>	<ul style="list-style-type: none"> <li>Trends in coral reef condition and resilience indicators are improved (including herbivory, coral diversity, disease and recruitment)</li> <li>Coral mortality resulting from exposure to human activities (including overfishing, sedimentation and physical damage) is reduced</li> <li>Coral mortality at sites of high ecological and tourism value is reduced, particularly predation by crown-of-thorns starfish</li> <li>Coral cover is showing an increasing trend towards the Reef-wide and regional levels measured by the AIMS long-term monitoring program at its inception in 1985<sup>16</sup></li> </ul> <p><i>Note: The Authority will further examine the development of targets for corals that specify ranges for condition and resilience indicators for regions and subregions</i></p>
<b>Seagrass meadows and seagrasses</b>	<ul style="list-style-type: none"> <li>Spatial extent and condition of seagrass in each natural resources management region is improved to good condition as defined in the Reef Rescue marine monitoring program<sup>17</sup></li> </ul> <p><i>Note: The Authority will further examine the development of targets for seagrass meadows that specify ranges for distribution, density and condition for regions and subregions</i></p>
<b>Terrestrial habitats that support the Great Barrier Reef</b>	<ul style="list-style-type: none"> <li>Protection of remaining high quality terrestrial habitats that support the Reef is increased</li> <li>Connectivity of slightly to moderately disturbed terrestrial habitats that support the Reef is increased and their functioning is improved</li> <li>The extent of riparian vegetation is increased</li> <li>There is no net loss of the extent, and an improvement in the ecological processes and environmental values, of natural wetlands</li> </ul>
<b>Species</b>	
<b>Marine turtles</b>	<ul style="list-style-type: none"> <li>Foraging habitats (seagrass meadows and coral reefs) in the southern two-thirds of the Region are restored as per above targets</li> <li>Foraging habitats (seagrass meadows and coral reefs) in the northern third of the Region are maintained and enhanced as per above targets</li> <li>Nesting habitats (islands and coastal beaches) are maintained and enhanced</li> <li>Populations of loggerhead, southern Great Barrier Reef green, and flatback turtle stocks continue to recover</li> <li>Declines in populations of hawksbill and northern Great Barrier Reef green turtle stocks are halted and reversed</li> </ul>
<b>Inshore dolphins</b>	<ul style="list-style-type: none"> <li>Cumulative impacts on habitats used by the Indo-Pacific humpback and the Australian snubfin dolphin are reduced</li> <li>Declines in Great Barrier Reef Indo-Pacific humpback and Australian snubfin dolphin populations are halted and reversed</li> <li>The mortality of Great Barrier Reef Indo-Pacific humpback and snubfin dolphin from all human related causes is reduced to zero</li> </ul>
<b>Dugongs</b>	<ul style="list-style-type: none"> <li>Foraging habitat (seagrass meadows) in the southern two-thirds of the Region is restored and maintained as per above set targets</li> <li>Foraging habitat (seagrass meadows) in the northern third of the Region is maintained as per above set targets</li> <li>Southern population: the mortality of dugongs from human-related causes other than traditional use of marine resources is reduced to as close to zero as possible</li> </ul>

<b>Values and impacts</b>	<b>Preliminary targets for 2019</b>
	<ul style="list-style-type: none"> <li>Northern population: dugong surveys continue to demonstrate a stable population</li> </ul>
<b>Heritage values and community benefits</b>	
<b>Indigenous heritage</b>	<ul style="list-style-type: none"> <li>A protocol and knowledge management system for the collection, handling and sharing of culturally sensitive information, and its integration in decision making, is developed and implemented</li> <li>Existing Indigenous heritage information held by the Authority is incorporated into knowledge management systems</li> <li>An assessment of Indigenous heritage values is completed for 20 per cent of the Region</li> <li>Cooperative management arrangements are in place with 40 per cent of Great Barrier Reef Traditional Owner groups</li> </ul>
<b>Historic heritage</b>	<ul style="list-style-type: none"> <li>An historic heritage database for the storage and handling of historic heritage information, and its integration in decision making, is developed and implemented</li> <li>The number of World War II features and other historic sites with statutory protection is increased</li> <li>Heritage management plans for Low Isles and North Reef lightstations are completed and heritage management plans for the four Commonwealth heritage listed lightstations implemented</li> </ul>
<b>Community benefits</b>	<ul style="list-style-type: none"> <li>There is local, regional, national and international community awareness of the Great Barrier Reef World Heritage Area; appreciation of its biodiversity and heritage values; and understanding of its issues</li> <li>Tourism and recreation users of the Region are highly satisfied with their experiences</li> <li>Traditional Owners, stakeholders, visitors and local residents maintain their personal connections to the Great Barrier Reef</li> <li>The Great Barrier Reef continues to provide personal and community health benefits</li> </ul>
<b>Impacts</b>	
<b>Direct use</b>	<p><b>Illegal fishing and poaching</b></p> <ul style="list-style-type: none"> <li>A reducing trend in the incidence of illegal fishing and poaching through: <ul style="list-style-type: none"> <li>Implementation of a remote vessel monitoring system on the commercial fishing fleet by 2015</li> <li>The maintenance of an effective field compliance presence in the Region</li> </ul> </li> </ul> <p><b>Death of discarded species</b></p> <ul style="list-style-type: none"> <li>The incidental catch of species of conservation concern is reduced by 50 per cent</li> </ul> <p><b>Marine debris</b></p> <ul style="list-style-type: none"> <li>The volume of marine debris on the Great Barrier Reef's islands, beaches and coastlines is reduced by 20 per cent</li> <li>The mortality of species of conservation concern due to ingestion of or entanglement in marine debris is reduced by 20 per cent</li> </ul>

## 5.2.4 Cumulative impact assessment policy

### Purpose

To inform development of a transparent, consistent and systematic approach to the assessment of cumulative impacts across jurisdictions from activities within and adjacent to the Great Barrier Reef Region.

### Context

The strategic assessment found impacts — whether the result of human activities or natural forces — affecting the Region's values do not operate in isolation but overlap and interact with each other and that their accumulation through time and over an ever-increasing area is diminishing the ecosystem's ability to recover from disturbances.

The declining health of the Great Barrier Reef indicates the need to not only protect and restore the condition of values and processes but to improve our management of high risk and cumulative

impacts. This will be vital to improving the Reef's health and resilience and safeguarding its heritage values and community benefits.

The focus of this policy is on developing processes to improve the way in which cumulative impacts are assessed and considered in planning and assessment decision making.

### **Policy intent**

The policy will guide how the specific challenges associated with managing cumulative impacts in the Great Barrier Reef Region are addressed. It will be underpinned by a set of principles and will outline the steps required to assess cumulative impacts and associated risks in the Region.

**Principles** The Australian Government *Guide to undertaking strategic assessments*<sup>18</sup> advocates the hierarchy of 'avoid, mitigate, offset and adaptive management' in managing impacts. Each of these steps is directly relevant to managing impacts on the Region's values. The hierarchy will be formally adopted by the Authority through development and implementation of this policy.

In addition, in accordance with the Great Barrier Reef Marine Park Act, the Authority is required to adhere to the principles of ecologically sustainable use. These include: that conservation of biodiversity and ecological integrity should be a fundamental consideration in decision-making; the precautionary principle; intergenerational equity; integrating both long-term and short-term considerations; and improving pricing and incentive mechanisms.

The Authority is proposing to adopt a set of principles for managing impacts (see breakout box) which reflects both sets of requirements and interprets them in the context of the Region, its current condition and the risks it is facing. They recognise the national and international significance of the Region and that protecting and restoring its integrity is fundamental to protecting its outstanding universal value.

**Process** Building upon the findings of the strategic assessment, the policy will outline the steps required to assess cumulative impacts in the Region (Figure 5). It will provide a comprehensive and systematic approach for both the Authority and proponents in:

- identifying values and ecosystem processes relevant to matters of national environmental significance
- identifying impacts affecting the Region, including past, present and likely future impacts
- determining the spatial and temporal scales (zones of influence) at which direct and indirect impacts should be considered
- selecting the tools to assess cumulative impacts, including methods to improve understanding of the cause-and-effect relationships of multiple or 'compounding' impacts on values
- determining the standards and guidelines to be applied
- determining requirements for peer and expert review
- meeting data collection standards and protocols (see Section 5.2.7).

## Principles for managing environmental impacts within the Great Barrier Reef Region

### 1. **Conservation of biodiversity and ecological integrity should be the fundamental consideration in decision making**

The natural environment is the foundation of the Region's values and there are limits to the amount of disturbance it can absorb without compromising its integrity. Decisions about managing impacts should support the outcomes of maintaining and restoring the condition of values and processes. Improvements in biodiversity and ecological integrity also represent the best opportunity to protect Indigenous heritage values and community benefits for generations to come.

### 2. **Decision making should integrate long-term and short-term environmental, economic, social and equity considerations**

The full suite of values relevant to matters of national environmental significance are identified in the strategic assessment. They provide the basis for comprehensive decision making about impacts. Decisions made now should ensure that these values are maintained or enhanced for the benefit of future generations.

### 3. **Avoiding impacts is the highest priority**

Every effort must be made to avoid impacts on the Region's values, including considering prudent and feasible alternatives to a proposed activity. In considering alternatives, the Authority will have regard to any alternate sites for the activity, any alternative approaches to the activity, as well as the alternative of not carrying out the proposed activity.

### 4. **Mitigation measures must be employed**

Potential impacts on the Region's values that cannot be avoided should be minimised — addressing direct, indirect and cumulative impacts. Mitigation measures must consider and explicitly account for the likely spatial and temporal scales of impacts.

### 5. **Offsets must only be considered where impacts cannot be avoided or mitigated and where residual impacts will not exceed critical thresholds in the short, medium or long term**

Historically, environmental offsets have addressed 'significant' residual impacts. Given the declining health of the Reef and the Authority's goals of protecting and restoring the Reef's condition and ensuring ecologically sustainable use, offsets now need to be more widely applied to compensate for all residual impacts. They need to produce measurable conservation outcomes within timeframes relevant to affected values or processes.

### 6. **Management arrangements must incorporate systems for continually improving practices across the life of activities**

Ongoing adaptive management is critical to ensuring that ecosystem values and processes are maintained and enhanced over time. Environmental management plans and approval processes need to be flexible and responsive to changing circumstances, and linked to best practice standards.

### 7. **Best practice standards must be employed in managing impacts**

Recognising the world heritage status of the Region, management of impacts should always be to best practice standards. Innovative approaches which improve environmental outcomes and operational efficiency, and provide incentives to achieve best practice will be promoted. Planning and assessment decision making will be based on best practice assessment methods and the best available information. This will include the use of modelling and mapping to help understand the cause-and-effect relationships between impacts and values.

### 8. **Impacts must be managed such that ecosystem thresholds are not reached**

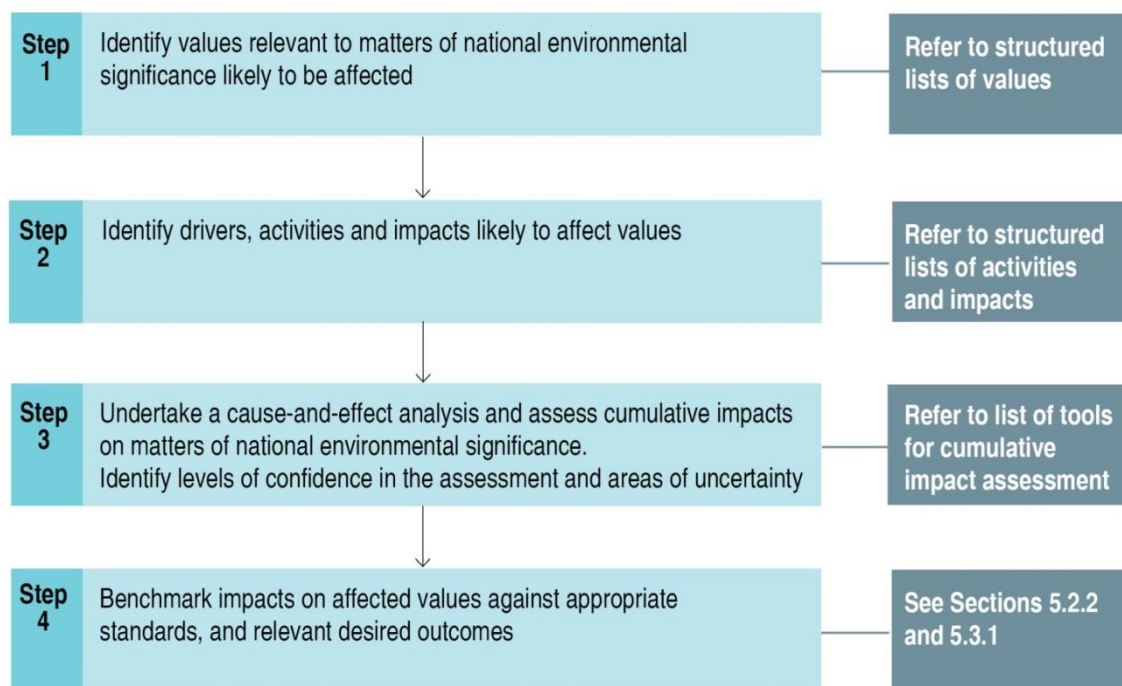
Management of impacts must be based on current and forward projections of condition for the Region's values and processes. As many values and processes have been assessed to be in poor condition, impacts deemed acceptable in the past may not be acceptable in the future. Where ecosystem thresholds have been exceeded, any further development activity must be able to demonstrate a net improvement in the condition of relevant values and processes.

### 9. **A risk-based approach should be adopted in managing impacts**

Assessing and managing for risk is an important part of effectively managing impacts. A comprehensive risk assessment should consider all likely impacts and the likelihood and consequence of those on the full suite of the Region's values and processes.

### 10. **In assessing impacts, uncertainty must be recognised and specified, but not delay protective actions**

Environmental assessment and planning processes must identify: the extent to which the limitations of available information may influence conclusions; any poorly understood variables or assumptions made; and the reliability of the information considered. This includes where ecosystem thresholds or trigger levels have not been established. In addition, the precautionary principle requires that the Authority not delay measures to prevent degradation in cases where there is a lack of certainty. This principle is particularly relevant to inshore areas in the southern two-thirds of the Region where, while there is still a high degree of uncertainty about impacts and their effects, there is a clear need to address environmental degradation from a range of sources.



**Figure 5 Summary of steps in the cumulative impact assessment framework**

**Risk** The strategic assessment provides a comprehensive basis for the analysis of risks posed by impacts affecting the Region, including a summary of the likely future risk of each of the 40 impacts assessed (summarised in Appendix 4).

In a similar manner, this policy will link the future assessment of impacts to the Authority’s risk-based approach to decision making, ensuring management actions focus not only on the highest risk impacts, but on areas where multiple impacts may be having a cumulative effect.

Combined, the integration of cumulative impact and risk-based assessment approaches will ensure cumulative risks, including those associated with a changing climate and extreme weather, are appropriately considered in regulatory processes.

**Developing, applying and reviewing the policy**

The Authority will finalise the cumulative impact assessment policy after comments made during public consultation on the strategic assessment are considered. In finalising the policy, the Authority will work closely with relevant Australian and Queensland government agencies responsible for assessing and determining proposals that may affect the Great Barrier Reef.

Once finalised, the Authority will have regard to the policy in its planning and permit assessment decision-making processes, ensuring all relevant drivers, activities, impacts and their effects are explicitly considered. The policy will also inform proponents and the community about the Authority’s approach to managing impacts by improving transparency and providing certainty about assessment requirements for development activities.

The Authority will promote the policy’s application in relevant assessment processes at both a national and state level with the objective of establishing a single, transparent and systematic approach to the consideration of cumulative impacts in decision making across jurisdictions.

The policy will be developed and reviewed in accordance with the Authority’s procedures for policy documents.

**Relevant recommendations of the strategic assessment**

The recommendation of the strategic assessment relevant to this new initiative is:

- **REC7:** Work closely with Australian and Queensland government agencies to improve understanding and management of cumulative impacts from activities within and adjacent to the Region and provide clearer guidance on how proponents and decision makers should address cumulative impacts in assessments.

## 5.2.5 Great Barrier Reef net benefit policy

### Purpose

To establish a strategic framework to guide actions and manage funds for protecting and restoring the values of the Great Barrier Reef.

### Context

The strategic assessment identified that, combined with natural events, the cumulative effects of past and present activities in the catchment and Region have significantly affected the Great Barrier Reef's values and the health of the ecosystem, particularly in the southern two-thirds of the Region. There is also increasing evidence that the ecosystem's resilience is being lost — a critical issue because resilience is fundamentally important to help protect the Region from impacts of a changing climate.

While avoiding and mitigating impacts remains the primary focus of management efforts, these are not sufficient on their own. Offsets and additional activities that deliver an overall positive effect or 'net benefit' are required to halt and reverse the decline in the Reef's health and ensure the long-term protection and restoration of the Region's values. In addition to offsets, there are other existing economic mechanisms and opportunities for the community to contribute to improving the Reef's resilience.

### Policy intent

This policy will guide actions required to support ecosystem health and deliver net benefits to the Region's values. It will facilitate a strategic and coordinated approach to delivering improvements to ecosystem health, and complement and support implementation of Australian and Queensland government offsets policies and restoration programs.

The policy will:

- provide a framework to ensure the management of impacts results in a net benefit to the Great Barrier Reef
- guide implementation of mandatory investments required under Marine Park permissions and for delivering offsets required under the EPBC Act
- guide voluntary actions and contributions to restore the health and resilience of the Reef, including the Authority's stewardship and partnership programs
- set out the arrangements for a Great Barrier Reef trust, including governance and administration.

Through the policy, priority will be given to actions to restore ecosystem health and resilience, as this is fundamental to protecting all matters of national environmental significance and the community benefits they support. The policy will set the basis for pre-identification of priority areas or management actions that will best tackle the most serious issues facing the Great Barrier Reef. It will provide greater certainty and deliver improved environmental outcomes, complementing the proposed arrangements of the Queensland Government.

The policy will be informed by the outcomes of the strategic assessment. It will also be informed by more focused assessments such as those undertaken for coastal ecosystems<sup>19</sup> which have systematically assessed and identified priority areas for restoration in the coastal-marine interface.

All actions will be consistent with, but additional to, the Authority's foundational management activities. Activities may encompass:

- restoration of habitats and species, such as active reattachment of dislodged coral following cyclones, and restoration and reconnection of coastal habitats of high value to the Reef
- enhanced protection of the Great Barrier Reef ecosystem, such as the control or mitigation of outbreaks (for example crown-of-thorns starfish), and installation of public infrastructure to protect fringing reefs.

The policy will link to the delivery of the Authority's outcomes for the condition of values (see Section 5.2.2) and its Reef Recovery program (see Section 5.2.6) to address high risk threats to biodiversity.

### Reef trust

The Australian Government will establish a Great Barrier Reef trust to receive and implement both mandatory and discretionary financial investments made for the purpose of restoring, maintaining and enhancing the values of the Great Barrier Reef.

Governance arrangements will be developed for the trust, including management arrangements that harness a range of expertise.

Investments in the trust will be managed separately from other sources of Authority funding to provide transparency to stakeholders and accountability in its regulatory requirements. There will be a public online register of investment activities.

#### **Developing, applying and reviewing the policy**

The Authority will finalise development of a net benefit policy after comments made during public consultation on the strategic assessment are considered. The Authority will work closely with relevant Australian and Queensland government agencies in finalising the policy.

The Authority will have regard to this policy in its planning and permit assessment decision-making processes. It will also inform the Authority's stewardship and partnership programs (for example, the Reef Guardian program).

The Authority will work closely with the Australian and Queensland government agencies to facilitate strategic and collaborative implementation of offsets across jurisdictions. The Authority will help inform Australian and Queensland government offsets arrangements and restoration programs by identifying actions that will maximise the delivery of environmental benefits to the Region.

The Authority will measure progress and achievement of outcomes through the policy by implementing a compliance and auditing strategy. In addition, the Authority will evaluate the policy's effectiveness in improving the condition of values as part of the assessment of measures to protect and manage the Region in each five-yearly Great Barrier Reef Outlook Report.

The policy will be reviewed in accordance with the Authority's procedure for the review of policy documents.

#### **Relevant recommendations of the strategic assessment**

The recommendations of the strategic assessment relevant to this new initiative are:

- **REC23:** Develop a policy and supporting mechanisms to facilitate strategic and collaborative implementation of offsets across jurisdictions.
- **REC24:** Inform implementation of Australian and Queensland government offsets policies and restoration programs by identifying actions that will maximise the delivery of environmental benefits to the Region.

### **5.2.6 Reef Recovery program**

#### **Purpose**

To restore sites of high environmental value through regionally-based cooperative management approaches.

#### **Context**

The strategic assessment clearly demonstrates connectivity within and between terrestrial and marine ecosystems is critical to the health and resilience of the Region. It also shows that inshore habitats south of about Cooktown (such as coral reefs and seagrass meadows) and many of the species that rely on them (such as dugongs, inshore dolphins and some sharks and rays) are in decline, having been affected by a range of impacts.

These impacts include declining water quality due to catchment run-off, loss of habitat due to coastal development, and extreme weather. Although considerable gains have been made in reducing fishing impacts, illegal fishing, poaching and incidental catch of fish and other marine animals remain a concern.

While there is a suite of common issues across the Region, the way these issues interact is often very localised and varies from place to place. These findings highlight the critical importance of having regional and local approaches to address threats to biodiversity and ensure use remains within sustainable limits.

#### **The program**

The Authority will implement a Reef Recovery program for the Great Barrier Reef Region. This will involve the adoption of regionalised and cooperative management approaches which support local communities and encourage cooperation between government agencies, the private sector and

research institutions in implementing actions to protect and restore biodiversity hotspots and support sustainable use.

The program will use the outcomes-based management framework, cumulative impact assessment policy and net benefit policy to build upon and better integrate current initiatives to reduce threats, restore degraded habits, improve water quality, and re-establish connectivity and functioning of coastal ecosystems. It will systematically address the cumulative impacts on the Region's biodiversity, giving priority to inshore areas and those threats that have been identified for at-risk species, species groups and habitats. Integral to the program will be the acknowledgement, promotion and transfer of the many rich sources of knowledge held within the community, along with supporting opportunities for local communities to develop and implement remedial actions to restore values.

In the northern third of the Region, the focus will be on safeguarding the Reef and maintaining the area in a natural state, largely unaltered by works or facilities. In the southern two-thirds of the Region, the focus will be on restoring the condition of values, and reducing impacts on those values, while continuing to provide for a range of sustainable use opportunities.

Recognising the inherent variability in the values and uses across the Region, the Authority will work with its partners to establish desired outcomes for individual regions. The outcomes will be based on national and international obligations to protect values and the levels of community acceptance of modifications to the system at local and regional levels to allow for ecological sustainable use.

This program will link to and inform the establishment of regionally-based standards and guidelines (see Section 5.3.1), including best practice approaches to meet the Authority's outcomes.

#### **Program delivery**

The program will be rolled out on a regional basis. Priority will be given to implementing the program in the Keppel Bay, Mackay and Townsville (Cleveland and Bowling Green bays) areas, as well as Princess Charlotte and Bathurst bays.

The Authority will seek to have relevant outcomes from the program formalised in relevant local, state and Australian government decision-making frameworks. The Authority will consider both regulatory and non-regulatory approaches to achieve the desired outcomes. Options range from partnerships and stewardship approaches to extending the Authority's regulatory powers for managing facilities and works that may pollute waters in a manner harmful to the Marine Park.

#### **Relevant recommendations of the strategic assessment**

The recommendation of the strategic assessment relevant to this new initiative is:

- **REC29:** Adopt regionally-based cooperative approaches to protect inshore biodiversity hotspots — supporting local actions and encouraging cooperation.

### **5.2.7 Integrated monitoring, reporting and adaptive management program for the Great Barrier Reef World Heritage Area**

#### **Purpose**

To establish an integrated Region-wide monitoring, reporting and adaptive management program to support implementation of the outcomes and targets and to guide future protection of the Great Barrier Reef.

#### **Context**

Monitoring provides information on the condition of the Region's values and the status of the impacts and activities affecting those values. It allows early detection of trends and changes and informs the assessment of future risks, as well as playing a fundamental role in evaluating management effectiveness. It is also critical to informing the development, refinement and application of models that help managers understand trends and patterns occurring in the Region. Monitoring data is used to meet statutory reporting requirements such as the Authority's five-yearly Outlook Report and its annual report, as well as other reporting obligations including communicating the outcomes of Reef Plan.

Within the Region, monitoring is carried out by a wide range of research providers such as the AIMS, CSIRO, government agencies (such as the Authority, Queensland Parks and Wildlife Service and the Queensland Department of Agriculture, Fisheries and Forestry) and universities, as well as by commercial companies, consultants, stakeholders and community members.



Existing monitoring programs have largely been designed to address and report on a specific issue, location or management initiative. A review of these monitoring programs has identified that most key management needs are currently being addressed by some form of monitoring, but in many cases it is too limited, either spatially or temporally, to adequately meet information needs. Additionally, there is a lack of indicators which address the full suite of biophysical and socio-economic values and a need for improved data standardisation, discoverability and accessibility.

### **The program**

The program will provide comprehensive and systematic monitoring and reporting of:

- the condition and trend of key values and processes related to matters of national environmental significance
- individual and cumulative impacts acting on the values
- ecosystem thresholds, environmental standards and trigger levels for the protection of values.

It will also contribute to the assessment of the effectiveness of policies, plans and programs implemented to protect matters of national environmental significance and ensure ecologically sustainable use.

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 integrated monitoring program will build upon existing monitoring programs of the Authority and its partners, including:

- long-term core monitoring programs — 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 (for example, construction of a marina or dredging program) in accordance with conditions specified in a permit, licence or approval.

The program will incorporate the knowledge and monitoring information of Traditional Owners, stakeholders and the broader community.

### **Program delivery**

The Authority will be the lead agency responsible for the implementation of the integrated monitoring program.

The Authority will seek to have standardised protocols for information collection, collation and data sharing adopted by Australian and Queensland government agencies with management responsibilities in the Region.

Development and implementation of the integrated monitoring program will be contingent on ongoing resourcing arrangements of both the Authority and its partner agencies.

### **Relevant recommendations of the strategic assessment**

The principle recommendations of the strategic assessment relevant to this new initiative are:

- **REC31:** Implement an integrated monitoring, reporting and adaptive management program for the Great Barrier Reef World Heritage Area, including more explicit reporting on the condition and trend of matters of national environmental significance.
- **REC32:** Maintain and improve monitoring, investigation and data management relating to critical species and habitats.
- **REC33:** Support implementation of a long-term social and economic monitoring program to improve understanding of changing use, investment and values.

## 5.3 Proposed measures to strengthen foundational management

In addition to the new initiatives outlined in Section 5.2, the Authority will work to strengthen its management through improvements to its foundational arrangements, as set out below.

### 5.3.1 Environmental regulation

#### **Regionally-based standards for ecosystem health**

Using its water quality guidelines as a model, the Authority will work with its partner agencies, local communities, the private sector and experts to cooperatively and progressively develop regionally-based ecosystem health standards. Standards will be based on the current condition of values and associated ecosystem processes and the desired condition for the area. Because many values and processes are currently in poor condition, standards deemed acceptable in the past may no longer be acceptable.

New and revised standards will include thresholds and management triggers for:

- key values assessed as being in poor or very poor condition
- key indicators for ecosystem health (for example, nutrient concentration or light penetration) for a range of habitats and species
- the cumulative impacts of multiple stressors (for example, nutrient concentration combined with light penetration) on a range of habitats and species.

#### **Strengthening guidelines**

The Authority's guidelines will be progressively updated to include the new and revised standards for ecosystem health (see above).

Guidelines will complement existing statutory arrangements and be developed in accordance with international and national obligations to protect the Region's values and the principles of ecologically sustainable use.

New and revised guidelines will include, but not be limited to:

- updating and strengthening the Great Barrier Reef water quality guidelines to include standards for a broader range of habitats and species, and thresholds for ecosystem health
- updating the Great Barrier Reef hydrodynamic modelling guidelines for dredging and spoil disposal to take into consideration the effects of longshore drift, resuspension and interannual variability in currents
- developing a new guideline on the assessment and management of underwater noise impacts on species.

#### **Streamlining, harmonising and enhancing regulatory tools**

The Authority will review the adequacy of its regulatory tools to protect areas within the Region that remain in good condition, areas of high conservation value and areas subject to high cumulative risk. Where necessary, it will strengthen its regulatory safeguards. This will include evaluating the adequacy of existing planning arrangements in areas north of Cooktown and areas subject to high growth in recreation and other uses (for example, Keppel Bay).

The Authority will improve alignment of its regulatory tools, reduce unnecessary regulatory burden and seek to harmonise definitions and provisions with other similar and relevant legislation, while maintaining strong levels of environmental protection and adequate safeguards. It will also seek to improve alignment between Commonwealth and Queensland protected area management arrangements including the application of standards and joint permitting and approval processes.

It will rationalise and streamline its tourism management arrangements to improve alignment between plans of management, policies and permitting processes and reduce regulatory burden commensurate with risk.

#### **Improving assessment of matters of national environmental significance**

In order to more explicitly consider all matters of national environmental significance in its assessments, the Authority will incorporate consideration of the full suite of values identified in the strategic assessment (Appendix 3) in its decision-making processes, including elements of the property's outstanding universal value. The need to consider the full suite of values will be made

explicit in the policies to be developed as part of the new initiatives outlined in Section 5.2 above, and will be progressively included in existing policies as they are updated.

The increasing significance of climate change and extreme weather in the Region means the Authority will also update its assessment processes so that impacts are appropriately considered in its decision-making processes.

The Authority will work towards improving its understanding of the values relevant to matters of national environmental significance, in particular at-risk species, Indigenous and historic heritage values and community benefits, and improve information management systems so that this information is more accessible to decision makers (see Section 5.3.3).

For assessments relevant to a number of agencies across jurisdictions, the Authority will work with these agencies to streamline the assessment processes and seek to have a more coordinated approach to community consultation.

### **Supporting recovery and managing for resilience**

The Authority will further develop operational activities that support recovery of the Reef ecosystem and improve the resilience of the ecosystem. For example, the Authority will support increased investment in site infrastructure recognising that these facilities will become more important as growth along the Queensland coast increases demand for visitor facilities, particularly on islands, and vessel-related infrastructure such as moorings and anchorages. The Authority will also support development of a collaborative Reef-wide management strategy for Great Barrier Reef islands.

In the short to medium term, there is an identified need to reduce illegal fishing in the Region as it is undermining biodiversity protection and compromising values. There are also opportunities to support recovery, for example through measures identified in the *Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012–2017*<sup>7</sup>.

### **Improving certainty**

Inherently, there is a large amount of uncertainty surrounding protection and management of the Great Barrier Reef — a vast and complex marine protected area which is managed for multiple use. The Authority deals with this uncertainty by basing its decisions on the best available knowledge and using its regulatory tools to provide certainty with regard to where activities may occur and under what conditions they may proceed. Where uncertainty exists, the Authority will continue to adopt a risk-based approach and apply the principles of ecological sustainable use to its decision making.

The strategic assessment demonstrated that, for many activities in many areas, such as tourism, research activities and shipping, the Authority's regulatory framework provides a high degree of certainty about where activities may occur and under what conditions.

The assessment identified there was less certainty in relation to the port activities within the Region. In line with the recommendations of the strategic assessment, the Authority will support development of a Queensland ports strategy that concentrates port development around long-established major ports in Queensland and encourage port master planning.

Recognising that continued population growth in the Great Barrier Reef catchment is likely to increase demand for facilities to enable access to the Region, the Authority will also promote a strategic approach to the development and operation of marinas and other access infrastructure along the Great Barrier Reef coast.

### **Strengthening protection and management of heritage values**

The *Great Barrier Reef Marine Park Heritage Strategy*<sup>20</sup> developed in 2005 under the EPBC Act will be reviewed and updated to more comprehensively address natural, Indigenous and historic heritage, with a view to improved understanding of heritage values and better integrating their consideration in decision-making processes.

The Authority will also consider pursuing an amended national heritage listing for the Great Barrier Reef or more formal arrangements under the *Great Barrier Reef Marine Park Act 1975* to strengthen recognition and protection of Indigenous and historic heritage values.

The Authority will work with Traditional Owners to develop a comprehensive management framework to promote and coordinate the contributions of Traditional Owners to management of the Great Barrier Reef, and to guide management of Indigenous heritage values in the Region. This will include development of a strategy specifically focused on Indigenous heritage.

### **Improving the compliance program**

One of the Field Management Program's key aims is to achieve effective compliance with relevant Commonwealth and Queensland laws among Reef users. While the Authority regards education and communication as the most effective means to encourage compliance with legislation, it also undertakes enforcement and prosecution action where it is deemed appropriate and necessary. Such actions are of vital importance as illegal activities remain a high risk to matters of national environmental significance.

The Authority will improve its compliance effectiveness across the Region through the adoption of advances in surveillance technology, improved coordination of compliance activities across jurisdictions and by strengthening powers to prevent repeat offending. It will seek to reduce illegal fishing in particular by working with its partners to achieve the installation of real-time vessel tracking of the commercial fishing fleet and improving the effectiveness of penalties for illegal activity as a deterrent. It will also strengthen its Indigenous community compliance program, in particular to address poaching and other illegal activities of shared concern.

### **Improving incident response capacity**

Increasing use of the Region and the likelihood of more frequent extreme weather events means the Authority and its management partners need to have a strong capacity to respond to incidents.

In relation to shipping, the Authority will work with other responsible agencies to implement the actions set out in the *North-East Shipping Management Plan*<sup>21</sup>, once finalised, including to:

- implement systems, training, equipment and procedures to ensure immediate response capacity to shipping and cargo incidents, including arrangements to fund necessary environmental responses not covered by the *National Plan to Combat Pollution of the Sea by Oil and other Hazardous and Noxious Substances*
- improve incident response capacity to and understanding of chemical and cargo spills
- improve capacity to treat marine pest incursions.

The Authority will also support initiatives to build the capacity of management agencies and Reef users to respond to incidents relating to climate change and extreme weather events.

## **5.3.2 Engagement**

### **Influencing drivers and activities affecting the Region's values**

The strategic assessment identified four categories of high risk impacts: climate change, catchment run-off, degradation of coastal ecosystems and direct use. Of these, only one — direct use — has components that are within the Authority's jurisdiction and regulatory control. The Authority's capacity to influence the drivers and activities causing most impacts on the Region relies on its capacity to engage and work collaboratively with its partners and stakeholders.

The Authority will strengthen and focus its engagement activities to improve its influence on high risk impacts affecting the Region's values. Potential approaches will include:

- working further with the Australian Government and the broader community to promote awareness of the effects of a changing climate on the Great Barrier Reef, to develop and implement climate change adaptation measures and to build ecosystem resilience
- continuing and strengthening partnerships with the Australian and Queensland governments local government, natural resource management bodies, the Authority's Reef Guardian networks and other stakeholders in relation to actions to improve catchment run-off, including actively promoting the uptake of improved land management practices to more rapidly achieve Reef Plan targets, and to support development and implementation of further regionally-based water quality improvement plans
- continuing and strengthening engagement with Australian, Queensland and local governments together with natural resource management bodies, the Authority's Reef Guardian networks and the community to highlight the importance of functioning coastal ecosystems to maintaining a healthy Reef and promoting a whole of ecosystem approach to management of the Reef and its catchment — informed by the Authority's coastal ecosystem basin assessments and management case studies

- continuing to work with its government partners, including ports corporations, to improve governance, strategic planning and the environmental sustainability of port activities at a Reef-wide scale
- continuing to work in close collaboration with the Australian Maritime Safety Authority, Maritime Safety Queensland and other relevant partners in the management of shipping within the Region, including through finalisation and implementation of the *North East Shipping Management Plan*<sup>21</sup>
- building on the significant progress made by the commercial fishing industry in achieving better sustainability, continuing to work with Australian and Queensland government partners, together with the fishing industry to further address the remaining risks. The Authority will also continue and enhance engagement aimed at ensuring the sustainability of recreational fishing.

### **Supporting best practice and stewardship**

Recognising the Region's world heritage status, an emphasis on best practice and stewardship encourages all regulated and unregulated activities within the Region to be carried out in accordance with world's best practice standards.

The Authority will work directly with Reef users and the broader community who undertake activities within the Region to promote awareness, understanding and appreciation of the Reef's outstanding universal value.

Building on the successes of its current programs, the Authority will strengthen its activities aimed at: encouraging development, refinement and implementation of best practices and innovative approaches; reducing impacts of activities; and improving sustainability.

The Authority recognises the role that the Reef's tourism industry plays in presenting the Great Barrier Reef World Heritage Area. It will continue to promote presentation of the Reef's values in partnership with the tourism industry, including through strengthening training and the development of educational material.

### **Improving consultation arrangements**

The Authority recognises the importance of consultation with interested parties in all of its management activities and will continue formal and informal consultation processes with Traditional Owners, Reef users and the broader community. It will work with other relevant agencies to adopt a more coordinated approach to community consultation in relation to the assessment of project proposals.

## **5.3.3 Knowledge, integration and innovation**

### **Improving identification and understanding of matters of national environmental significance**

Identifying and understanding the values relevant to matters of national environmental significance in the Region, especially through mapping, will continue to be an important input into planning and decision making through the life of the program. The Authority will work with other relevant agencies and research organisations to:

- improve the sharing of information about the Region's values, their distribution, condition and trend and the impacts that are affecting them
- improve spatial representation of information relating to the Region's values. This will provide greater certainty and transparency about the occurrence and distribution of particular values in the Region
- identify values of the Region that are not easily represented and measured, such as aesthetic values.

An important component will be improving the Authority's spatial mapping capabilities so that it can better identify and map values and the factors affecting them.

### **Identifying Indigenous heritage values**

The Authority will collaborate with Traditional Owners to undertake an assessment of the Indigenous heritage values of the Region and will implement an Indigenous knowledge management system to promote the use of traditional ecological knowledge and contribute to improved protection of Indigenous heritage values. This will include development of a protocol to ensure appropriate safeguards are in place to protect culturally sensitive information, and better practice guidelines for engagement with Traditional Owners.

### **Developing and maintaining an historic heritage database**

The Authority will develop and maintain a database of places of historic significance to improve the identification and protection of historic heritage values. The database will include information on historic shipwrecks, World War II artefacts and historic lightstations, together with places of scientific and social significance. The Authority will also establish protocols with other relevant Commonwealth and Queensland government agencies responsible for listed places (for example lighthouses and historic shipwrecks) to improve data sharing arrangements.

### **Improving understanding of community benefits**

The Authority recognises the range of important community benefits provided by the Region's environment and will promote research to improve understanding of the role that the Great Barrier Reef plays in the life of the community — incorporating relevant outcomes into planning and decision making.

The Authority will also support implementation of a long-term socio-economic monitoring program to improve understanding and consideration of community benefits derived from the environment in decision-making processes. This measure recognises the role of people and communities in the Region's ongoing management and the benefits the Region provides to the community. Building a clearer understanding of the social and economic benefits derived from the environment is fundamental to understanding the effects of impacts on those benefits and safeguarding the Region's future as a multiple-use area.

### **Improving alignment and coordination of research priorities**

The strategic assessment has identified research needs critical to the Region's management. To meet these needs, the Authority will seek to strengthen partnerships and improve alignment between the priorities of the Authority and those of its partners, stakeholders and research providers. Key focus areas over the next five years will be research which delivers improvements in:

- understanding how impacts interact with values and determining regionally-based ecosystem thresholds and tipping points for those interactions
- understanding the spatial and temporal scales (zones of influence) at which processes occur and interact with values
- understanding sensitivity and exposure to individual and cumulative impacts, particularly for key values
- understanding the ecosystem processes that operate in the Great Barrier Reef and the effects of a changing climate on the processes and the Reef's resilience
- informing qualitative and, where they exist, quantitative models of cause-and-effect relationships for the Great Barrier Reef, to improve understanding of interactions and to provide predictions
- synthesising monitoring data and other information to inform ecological and social risk assessments and developing guidelines and standards for management action
- uncovering new biodiversity values and hotspots
- testing management responses for their effectiveness in improving protection of values.

The Authority will also continue to encourage and support research and innovation that improves the sustainability of activities in the Region and reduces impacts on the Region's values. Examples of some of the key areas identified in the strategic assessment are:

- improving understanding of the cumulative impacts of port activities within the Region, including identifying key knowledge gaps and addressing critical information needs
- further research and development into better gear technologies designed to reduce interactions with protected species and bycatch in all commercial fisheries, and with protected species in shark control nets
- improving understanding and management of the impacts of noise on species, particularly at risk and inshore species.

### **Increasing emphasis on use of modelling approaches**

The Authority will place increased emphasis on the use of modelling approaches to improve its understanding of cause-and-effect relationships between drivers, activities, impacts and the Reef's values and the successive and combined effects of impacts on the Region's environment. It will employ a range of modelling tools to improve predictive capacity and to test the application of potential

approaches to addressing impacts. An increased emphasis on modelling will require the Authority to strengthen collaborative arrangements with its partner organisations with modelling expertise and to build its staff capacity in this field.

### **Better integrating knowledge into management**

The Authority will collaborate with other agencies to develop and refine data sharing systems so the outcomes of research and monitoring, modelling, community knowledge and innovation are better integrated in management planning and decision making, and are more publicly accessible. This will improve the interface between knowledge and management — providing information that can be collated, synthesised, interpreted and applied to refine targets, set priorities for planning and inform policies. Management activities that will benefit from the improved management and integration of knowledge include:

- ensuring targets are regularly reviewed and updated in line with the best available knowledge
- informing priorities for the Authority's strategic and annual operating plans
- promoting innovation, including the use of new technology, uptake of new practices and market-based or incentive-driven approaches
- rationalising, updating and improving alignment of the Authority's policy documents in line with the latest available information to inform regulatory and engagement processes
- developing and maintaining a register of critical knowledge needs to drive ongoing improvements and complete the adaptive management cycle.





## 6 Forward commitments

As part of the Authority's proposed program, a number of forward commitments are made which seek to further improve the integration of management arrangements across jurisdictions and inform adaptive management. These include commitments to work with the Australian and Queensland governments to develop and implement a long-term sustainability plan for the Great Barrier Reef to guide management actions required to protect matters of national environmental significance.

This chapter also outlines the Authority's continuing adaptive management measures, including its monitoring, evaluation and reporting processes, together with governance arrangements, to protect and manage the Great Barrier Reef Region over the life of the program.

### 6.1 Long-term sustainability plan for the Great Barrier Reef

The Authority is committed to working with the Australian and Queensland governments to develop and implement a long-term sustainability plan for the Great Barrier Reef World Heritage Area.

#### **Purpose**

To provide an over-arching framework to guide the protection and management of the Great Barrier Reef World Heritage Area's outstanding universal value and support ecologically sustainable development and use.

#### **Context**

The Reef faces a number of threats including climate change, and increased pressures from population and economic growth. To manage these emerging threats, the World Heritage Committee has requested that Australia:

*'...undertake a comprehensive strategic assessment of the entire property, identifying planned and potential future development that could impact the Outstanding Universal Value to enable a long-term plan for sustainable development that will protect the Outstanding Universal Value of the property'* (WHC Decision 35 COM 7B.10).

The plan will be a complementary output to the comprehensive strategic assessment of the Great Barrier Reef World Heritage Area and adjacent coastal zone. It will identify areas of joint action from the strategic assessments and seek to address gaps important to management of the Reef.

#### **The plan**

The plan will build on the Australian and Queensland governments' strong foundation of management measures to protect the Great Barrier Reef. It will provide a cohesive framework to bring together plans and policies relevant to protection and management of the Reef.

The plan will include the following four broad elements:

- a vision for the Great Barrier Reef World Heritage Area that reflects the diversity of use and interest in the property, protects the outstanding universal value, sustains its integrity and integrates the three pillars of sustainability (environmental, social and economic)
- an outcomes framework that includes measurable targets for protection of the property's outstanding universal value
- adaptive management actions to deliver outcomes and targets, primarily drawn from the two strategic assessments and with a focus on critical areas of new work
- integrated monitoring and reporting programs to measure the success of the plan.

#### **Implementation**

It is proposed that the Great Barrier Reef Ministerial Forum will be responsible for oversight of the plan's implementation. This will enable the Australian and Queensland governments to comprehensively monitor the success of actions to protect the Great Barrier Reef World Heritage Area, recognising that achieving change in environmental condition may take decades. The Forum provides a mechanism for evaluating where governments may need to prioritise protection; facilitates adaptive management; and guides future decision-making in the world heritage area and the coastal zone.

The Australian and Queensland governments are currently seeking input on the scope of the plan as part of the strategic assessment public comment process.

## 6.2 Adaptive management

The dynamic and complex nature of the Great Barrier Reef ecosystem, the pace of change in factors affecting it, and improving knowledge about both the ecosystem and its impacts means the Authority needs to be flexible and adaptive in its management into the future.

### Using adaptive management to protect and manage matters of national environmental significance

Adaptive management has played a central role in understanding and managing the Region in the past decade.<sup>22,23,24,25,26,27,28,29</sup> The Authority recognises that to achieve its outcomes for a system as dynamic and complex as the Great Barrier Reef — in both its natural and human dimensions — an ongoing adaptive approach will be required.

Adaptive management that responds to changing circumstances requires an up-to-date and comprehensive understanding of the status and trend of key indicators of matters of national environmental significance, the impacts that may be affecting them and the benefits being derived from the environment.

An integrated monitoring framework will guide the establishment of a standardised and integrated, ecological, social and economic monitoring program for the Great Barrier Reef as part of its adaptive management cycle (see Section 5.2.7).

### Monitoring environmental indicators

The effectiveness of the management program to achieve the Authority's outcomes and targets will be measured through monitoring a set of environmental indicators. The indicators represent the key attributes of the Great Barrier Reef Region's environment and the key impacts affecting them.

Indicators of the Region's environment include a selection of biodiversity values, ecosystem processes, heritage values and community benefits. Indicators of impacts on the Region include those related to climate change, water quality and pollution, coastal habitat degradation and direct use of the Region. The full set of indicators is set out in Table 6.

Criteria considered in selecting the indicators were:

- **Biodiversity** (habitats and species): a classification of 'at risk' in the Authority's vulnerability assessments; affected by a high or moderate level of single or cumulative impacts; a key ecological feature; a source of important community benefits; iconic status; specific reporting obligations (for example, World Heritage listing); or the subject of existing monitoring that is of value to management.
- **Ecosystem processes**: critical to the functioning of matters of national environmental significance; critical to the recovery of values assessed to be in poor, very poor or declining condition; affected by a high or moderate level of single or cumulative impacts; having specific reporting obligations; or not sufficiently informed by the monitoring of biodiversity values (see above) or key impacts (see below).
- **Impacts**: assessed to be of high or very high risk in the strategic assessment due to its effects on multiple values (acute or chronic) or over a broad scale (acute or chronic); or the subject of existing monitoring that is of value to management.

Indicators for the Region's **heritage values** and **community benefits** are less well developed than those for biodiversity, ecosystem processes and key impacts. Those identified are preliminary, based on work undertaken for the strategic assessment, expert opinion and legislative requirements. Mechanisms to systematically identify and monitor social, cultural and economic drivers and values across the Region are being developed.

The key indicators will be monitored as part of the integrated monitoring program (see Section 5.2.7), with contributions from the Authority and its partners. The list of indicators will continue to be refined to ensure they represent the best measures of the Great Barrier Reef Region's environment and key environmental impacts.

### Performance evaluation and reporting

The Authority will systematically and regularly monitor and evaluate its performance towards achieving the outcomes in the proposed program. Evaluating performance will allow the Authority to learn from its successes and failures, improve continually as an organisation, adapt its management arrangements and better deliver on its goals. By structuring its future program around outcomes, rather than outputs, the Authority will have the flexibility to continually adapt its management arrangements.

Future Outlook Reports will inform progress towards achieving outcomes, including condition and trend information for ecosystem processes, values and impacts. This information will directly facilitate assessment of management performance, as statements around condition and trend are generally the basis of targets for values and impacts. Importantly, the 'outlook' section of each five-yearly report will inform adaptive management by integrating current knowledge and modelling to produce a predicted future condition of the key indicators of matters of national environmental significance.

The integrated monitoring framework will support the Authority's management approach and is central to the Authority's adaptive management cycle.

At its highest level, evaluation of the effectiveness of the management program will be through the statutory five-year Outlook reporting cycle which includes a requirement to assess 'existing measures to protect and manage the Region's ecosystem'. The findings of each report will inform the Authority's five-yearly priorities and be the principle guide to adaptive management.

Annual strategic planning, taking into account emerging information and monitoring results, will inform finer scale adjustments to management arrangements.

The Authority will also assess the effectiveness of individual policies, plans and programs as part of its normal processes of project planning, implementation and review.

### **6.3 Governance**

The Authority is responsible for implementation of the management program. It is committed to implementing the outcomes of the strategic assessment in collaboration and consultation with the Queensland Government and other Australian Government agencies.

Recognising the central role of the Great Barrier Reef Ministerial Forum in facilitating an integrated and coordinated approach to protection and management of the Great Barrier Reef, it is proposed that a report be provided annually to the Forum on implementation of the proposed Great Barrier Reef long-term sustainability plan. This report would be developed collaboratively with the Queensland Government. This arrangement will allow identification of opportunities for further cooperation, resolve any emerging issues and maintain momentum from the strategic assessment process.

### **6.4 Implementation**

Table 7 outlines implementation arrangements for the delivery of the Authority's management program. Timeframes are included for measures to strengthen management and forward commitments. Activities are designed to improve protection of all matters of national environmental significance, including the outstanding universal value of the property.

**Table 6 Key indicators of the Region’s values, processes and impacts**

A set of key indicators will be monitored to inform the Authority’s assessment of management effectiveness, including meeting its outcomes and targets.

Values	Processes	Impacts
<p><b>Biodiversity</b></p> <ul style="list-style-type: none"> <li>• Islands</li> <li>• Beaches and coastlines</li> <li>• Mangrove forests</li> <li>• Coral reefs and corals</li> <li>• Seagrass meadows and seagrasses</li> <li>• Open water</li> <li>• Supporting terrestrial habitats</li> <li>• Other invertebrates</li> <li>• Bony fish</li> <li>• Sharks and rays</li> <li>• Sea snakes</li> <li>• Marine turtles</li> <li>• Seabirds</li> <li>• Shorebirds</li> <li>• Dolphins</li> <li>• Dugongs</li> </ul>	<ul style="list-style-type: none"> <li>• Waves, currents and tides *</li> <li>• Cyclones *</li> <li>• Sedimentation *</li> <li>• Sea level *</li> <li>• Sea temperature *</li> <li>• Nutrient cycling *</li> <li>• Ocean acidity *</li> <li>• Freshwater inflow and salinity *</li> <li>• Primary production — pelagic</li> <li>• Herbivory *</li> <li>• Predation *</li> <li>• Connectivity</li> <li>• Recruitment</li> <li>• Reef building *</li> </ul> <p>* addressed in indicators for values or impacts</p>	<p><b>Climate change</b></p> <ul style="list-style-type: none"> <li>• Altered ocean currents and small scale circulations</li> <li>• Cyclone activity</li> <li>• Increased sea and air temperature</li> <li>• Ocean acidification</li> <li>• Rising sea level</li> </ul> <p><b>Catchment run-off</b></p> <ul style="list-style-type: none"> <li>• Increased freshwater inflow</li> <li>• Nutrients from catchment run-off</li> <li>• Outbreak of crown-of-thorns starfish</li> <li>• Pesticides from catchment run-off</li> <li>• Sediments from catchment run-off</li> </ul>
<p><b>Indigenous heritage</b></p> <ul style="list-style-type: none"> <li>• Cultural practices, observances, customs and lore</li> <li>• Indigenous sacred sites, sites of particular significance, places important for cultural tradition</li> <li>• Indigenous stories, song lines, totems and languages</li> <li>• Indigenous structures, technology, tools and archaeology</li> </ul>		<p><b>Degradation of coastal ecosystems</b></p> <ul style="list-style-type: none"> <li>• Artificial barriers to flow</li> <li>• Coastal reclamation</li> <li>• Modifying supporting terrestrial habitats</li> </ul>
<p><b>Historic heritage</b></p> <ul style="list-style-type: none"> <li>• Places of historic significance including: <ul style="list-style-type: none"> <li>- historic shipwrecks</li> <li>- World War II features and sites</li> <li>- lightstations</li> </ul> </li> <li>• Places of social significance</li> </ul>		<p><b>Direct use</b></p> <ul style="list-style-type: none"> <li>• Dredging and spoil disposal</li> <li>• Extraction – death of discarded species</li> <li>• Extraction – fishing in spawning aggregations</li> <li>• Extraction – predators</li> <li>• Illegal fishing and poaching</li> <li>• Marine debris</li> <li>• Noise pollution</li> <li>• Outbreaks of disease</li> </ul>
<p><b>Community benefits to the environment</b></p> <ul style="list-style-type: none"> <li>• Income and employment</li> <li>• Understanding of the Great Barrier Reef</li> <li>• Appreciation, enjoyment and aesthetics (natural beauty)</li> <li>• Access to reef resources</li> <li>• Personal connection</li> <li>• Health benefits</li> </ul>		

**Table 7 Implementation of measures to strengthen management and forward commitments**

Over the next five years, the Authority will focus its management efforts on the implementation of proposed new initiatives and measures to strengthen foundational management. Initiatives and measures are designed to strengthen the protection and, where relevant, restoration of matters of national environmental significance.

	Within 12 months	Within two years	Within five years	Ongoing	Annually	Five-yearly
<b>New initiatives</b>						
Outcomes and targets	●					
Cumulative impact assessment policy	●					
Net benefit policy	●					
Reef recovery program				●		
Integrated monitoring program			●			
<b>Measures to strengthen management</b>						
<b>Environmental regulation</b>						
Regionally-based standards for ecosystem health			●			
Strengthened guidelines		●				
Streamlining, harmonising and enhancing tools		●				
Improving assessment of matters of national environmental significance				●		
Supporting recovery and building resilience				●		
Improving certainty			●			
Strengthening protection of heritage values			●			
Improving compliance				●		
Improving incident response capacity				●		
<b>Engagement</b>						
Influencing drivers and activities affecting the Region				●		
Supporting best practice and stewardship				●		
Improving consultation arrangements		●				
<b>Knowledge, innovation and integration</b>						
Improving identification and understanding of matters of national environmental significance				●		
Identifying Indigenous heritage values			●			
Developing an historic heritage database		●				
Improving understanding of community benefits			●			
Improving alignment and coordination of research priorities	●					
Increasing emphasis on use of modelling			●			
Better integration of knowledge into management			●			
<b>Forward commitments</b>						
Great Barrier Reef long-term sustainability plan	●					
Adaptive management – review cycles					●	●
Governance (Ministerial Forum)					●	

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## Appendix 1

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### **Agreement with the then Minister for Sustainability, Environment, Water, Population and Communities**







**ENVIRONMENT PROTECTION AND BIODIVERSITY  
CONSERVATION ACT 1999  
Part 10 Strategic Assessments  
Section 146 Agreement**

Strategic assessment of the impacts of actions on the values of the Great Barrier Reef World Heritage Area, other relevant matters of national environmental significance, and the management arrangements to deal with such impacts under the jurisdiction of the Great Barrier Reef Marine Park Authority.

between

**THE MINISTER FOR SUSTAINABILITY, ENVIRONMENT, WATER, POPULATION AND COMMUNITIES ON  
BEHALF OF THE COMMONWEALTH GOVERNMENT**

and

**THE GREAT BARRIER REEF MARINE PARK AUTHORITY**

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## 1 PARTIES

The Parties to this agreement are:

The Minister for Sustainability, Environment, Water, Population and Communities on behalf of the Commonwealth Government

and

The Great Barrier Reef Marine Park Authority.

## 2 DEFINITIONS

2.1 Unless stated otherwise in this Agreement, the definitions, meanings and terms in the *Environment Protection and Biodiversity Conservation Act 1999* apply to this Agreement and its attachments.

2.2 In this Agreement:

**agreement** means this strategic assessment agreement entered into between the Minister for Sustainability, Environment, Water, Population and Communities and the Great Barrier Reef Marine Park Authority on the date the last Party executes this agreement.

**day** means a business day as measured in Canberra, Australian Capital Territory.

**Department** means the Australian Government department administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

**endorsement criteria** means the endorsement criteria detailed in Attachment C of this Agreement.

**EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

**GBRMP** means the Great Barrier Reef Marine Park as established by the *Great Barrier Reef Marine Park Act 1975* (Cth).

**GBRMPA** means the Great Barrier Reef Marine Park Authority as established by the *Great Barrier Reef Marine Park Act 1975* (Cth).

**GBRMP Act** means the *Great Barrier Reef Marine Park Act 1975* (Cth).

**GBRMPA management arrangements** means those management arrangements under the jurisdiction of GBRMPA, and may include partnership and collaborative arrangements with other Commonwealth and Queensland Government agencies and partnerships with stakeholders and members of the Great Barrier Reef coastal community. These management arrangements include, but are not limited to, those described in Attachment B.

**GBRWHA** means the Great Barrier Reef World Heritage Area and is the same as the area described in Schedule 1 to the GBRMP Act.

**Great Barrier Reef Region** has the same meaning as described in the GBRMP Act.

**Minister** means the Minister responsible for administering the EPBC Act or the Minister's authorised delegate.

**MNES** means matters of national environmental significance protected under Part 3 of the EPBC Act.

**Queensland strategic assessment** is defined in clause 3.5 of this Agreement.

**Parties** mean the Minister and the GBRMPA together, each a **Party**.

**Program** is the 'policy, plan or program' (section 146 of the EPBC Act) of the GBRMPA management arrangements that will apply to those parts of the strategic assessment area as described in the Program Report and for which endorsement by the Minister is sought.

**Program Report** means a report prepared specifically for this strategic assessment that describes the Program.

**strategic assessment** means the strategic assessment to which this Agreement relates, namely the strategic assessment of the impacts, including cumulative impacts, of actions on the environmental values of the strategic assessment area, relevant MNES and the GBRMPA management arrangements to deal with such impacts.

**strategic assessment area** is the Great Barrier Reef Region (map at Attachment A) and areas outside the Great Barrier Reef Region, to the extent that actions in those areas may affect the Great Barrier Reef Region.

**Strategic Assessment Report** means the report prepared in accordance with the Terms of Reference assessing the likely impacts, including cumulative impacts, on MNES from implementing the Program.

**Supplementary Report** means the report submitted to the Department following public exhibition of the draft Strategic Assessment Report which addresses and responds to public comments including revisions to the Strategic Assessment Report.

**Terms of Reference** means the terms of reference for the preparation of the Strategic Assessment Report.

**Work Plan** means a plan jointly developed by the Parties for undertaking the strategic assessment, documenting a common understanding about what strategic assessment tasks will be completed by whom, by when, and what resources are required for those tasks, amongst other things.

### 3 PREAMBLE

- 3.1 Australia's Great Barrier Reef is the largest coral reef ecosystem on earth. In 1975 the Great Barrier Reef Region was established and today provides for the long term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region.
- 3.2 The Great Barrier Reef Region extends more than 2,300 km along the Queensland coastline and covers 346,000 square kilometres. In 1981 the area was listed as a World Heritage property for its outstanding universal value and in 2007 it was listed as a National Heritage property.
- 3.3 Both the Australian and Queensland Governments have legislative responsibilities within the GBRWHA. The *Great Barrier Reef Intergovernmental Agreement 2009* sets out the joint management arrangements between the two governments to ensure an integrated and collaborative approach to the management of the marine and land environments within and adjacent to the GBRWHA.
- 3.4 The strategic assessment will examine the impacts, including cumulative impacts, of actions on the GBRWHA, other relevant MNES, and the GBRMPA management arrangements to deal with such impacts.
- 3.5 The strategic assessment will complement the Queensland Government's strategic assessment of the impacts of actions on the values of the GBRWHA under the Queensland coastal management, planning and development framework (the Queensland strategic assessment). The GBRMPA strategic assessment combined with the Queensland strategic assessment will form a comprehensive strategic assessment of the entire GBRWHA property and its values and the adjacent coastal zone.
- 3.6 The Parties agree that the GBRWHA and the adjacent coastal zone contain MNES that are highly inter-related. The Parties commit to:
- (a) undertaking a strategic assessment of the impacts, including cumulative impacts, of actions on all MNES under the jurisdiction of GBRMPA, other than nuclear actions.
  - (b) developing a Work Plan for the strategic assessment describing governance arrangements, key milestones and deliverables, public exhibition requirements, communication and data sharing agreements and other responsibilities of the Parties to ensure timely completion of the strategic assessment.
  - (c) working collaboratively with the Queensland Government on the complementary Queensland strategic assessment.
- 3.7 The strategic assessment does not affect the application of the EPBC Act or GBRMP Act in the strategic assessment area in relation to actions or activities already approved or for which approval has been sought through the assessment and approval process
- (a) established under Parts 7, 8 and 9 of the EPBC Act; or
  - (b) established under Part 2A of the *Great Barrier Reef Marine Park Regulations 1983* (Cth).

### 4 BACKGROUND

- 4.1 Subsection 146(1) of the EPBC Act allows the Minister to agree in writing with a person responsible for the adoption or implementation of a policy, plan or program to assess the impacts of actions taken under that policy, plan or program on MNES.
- 4.2 This Agreement is intended to be an agreement for the purposes of subsection 146(1) of the EPBC Act to assess the impacts of actions taken under the Program.
- 4.3 A draft Strategic Assessment Report and draft Program Report will be made available for public comment for a minimum of at least 28 days. Following the public comment period, a Supplementary Report (addressing public comments) and a revised Program Report will be submitted to the Minister. After considering these, the Minister may decide to endorse the Program if satisfied that the reports adequately address the impacts and endorsement criteria to which this Agreement relates and that recommended modifications (if any) to the Program made by the Minister, or modifications having the same effect, have been made.
- 4.4 The Parties acknowledge that the endorsement of the Program itself does not constitute any approval for the taking of actions under Part 10 of the EPBC Act.
- 4.5 If the Minister endorses the Program, the Minister may then approve the taking of an action, or a class of actions, in accordance with the Program and the EPBC Act. The effect of this approval decision is that any actions or class of actions approved under section 146B would not need further approval by the Minister under the EPBC Act if taken in accordance with the endorsed Program.
- 4.6 The Parties acknowledge that, where proponents propose to take an action in accordance with the Program that is not the subject of an approval under section 146B, they are able to seek approval for that action through the assessment and approval process established under Parts 7, 8 and 9 of the EPBC Act. Paragraphs 87(3)(b) and 136(2)(e) of the EPBC Act provide that the strategic assessment report for a policy, plan or program must be taken into account in deciding the level of assessment and approval for actions that are referred under the EPBC Act.

### 5 TERMS OF REFERENCE FOR THE STRATEGIC ASSESSMENT REPORT

- 5.1 The Parties will prepare draft Terms of Reference for the strategic assessment report that include the following (at a minimum):
- Purpose and description of the Program;
  - Description of the area in which the Program will be implemented;
  - MNES affected by the Program;
  - Identification and analysis of the potential impacts, including cumulative impacts, on MNES;
  - Consideration of existing pressures on MNES;
  - Measures to enhance the existing environment, including management of existing threats;

- Measures to avoid, mitigate and offset likely impacts, including impacts of cumulative impacts, on MNES;
- Consideration of ecologically sustainable development principles;
- Adaptive management and risk management; Auditing and reporting requirements; and
- Review, modification and abandonment of the Program.

5.2 The GBRMPA will seek public comment on the draft Terms of Reference. The GBRMPA will provide the draft Terms of Reference for public comment by notice consistent with arrangements for other major environmental impact assessment projects, including:

- (a) posting on the GBRMPA's website;
- (b) publishing in newspapers circulating in Queensland; and
- (c) circulation to key stakeholder groups agreed between the Department and the GBRMPA.

5.3 The notice must state:

- (a) that the draft Terms of Reference are available for public comment;
- (b) how copies may be obtained;
- (c) the contact details for obtaining further information; and
- (d) that public comments are invited for a period of at least 28 days as specified by the Minister.

5.4 Following the public comment period for the draft Terms of Reference in accordance with clause 5.3(d), the GBRMPA will submit to the Minister:

- (a) proposed Terms of Reference;
- (b) public responses relating to the draft Terms of Reference; and
- (c) a report on how the public responses have been taken into account.

5.5 Following receipt of the proposed Terms of Reference, the Minister will notify the GBRMPA that the proposed Terms of Reference:

- (a) are approved, or
- (b) are not approved, in which case the Minister will notify the GBRMPA of any concerns and invite the GBRMPA to provide revised Terms of Reference which take those concerns into account.

5.6 Within 15 working days of receipt of the revised Terms of Reference from the GBRMPA in accordance with clause 5.5(b), the Minister will either:

- (a) notify the GBRMPA of the Minister's approval of the revised Terms of Reference; or
- (b) provide approved Terms of Reference that meet the Minister's requirements.

## 6 PREPARATION OF THE STRATEGIC ASSESSMENT REPORT AND PROGRAM REPORT

6.1 The GBRMPA will prepare a Strategic Assessment Report and Program Report in accordance with this Agreement and the Terms of Reference approved in accordance with clause 5.5(a) or clause 5.6.

6.2 The GBRMPA will provide a draft Strategic Assessment Report and draft Program Report to the Minister for comment prior to finalising the documents for public comment.

6.3 The GBRMPA must release the draft Strategic Assessment Report and draft Program Report for public comment by notice consistent with arrangements for other major environmental impact assessment projects, including:

- (a) posting on the GBRMPA's website;
- (b) publishing in newspapers circulating in Queensland; and
- (c) circulation to key stakeholder groups agreed between the Department and the GBRMPA.

6.4 The notice must state:

- (a) that the draft Strategic Assessment Report and draft Program Report are available for public comment;
- (b) how copies may be obtained;
- (c) provide contact details for obtaining further information; and
- (d) that public comments are invited on the draft reports for a period of at least 28 days as specified by the Minister.

6.5 The GBRMPA will:

- (a) prepare a Supplementary Report and revise the Program Report, taking into account any public comments received in accordance with clause 6.4(d);
- (b) provide drafts of these reports to the Minister for comment prior to their finalisation; and
- (c) incorporate any recommendations by the Minister.

6.6 The Department agrees to assist the GBRMPA in ensuring that the reports adequately address the requirements for strategic assessments described in Part 10 of the EPBC Act and to provide comments in a timely manner.

## 7 ENDORSEMENT OF THE PROGRAM

7.1 The GBRMPA will submit to the Minister:

- (a) the Strategic Assessment Report (which was exhibited for public comment);
- (b) the Supplementary Report (explaining how relevant public responses have been taken into account and addressed in the impact assessment and revised Program);
- (c) the Program Report (incorporating any revisions in light of public comments);
- (d) public comments received during the consultation relating to the Strategic Assessment Report and Program Report;
- (e) any other documents required to support the GBRMPA's submission.

7.2 If the Minister is not satisfied that the reports adequately address the impacts of actions on MNES in the strategic assessment area, or that the Program does not provide for adequate protection of MNES, then:

- (a) the Minister can make recommendations to amend the Program;
- (b) the GBRMPA may seek clarification from the Minister on the recommendations;
- (c) the GBRMPA will then submit to the Minister for consideration the revised Program, and a summary of how the Minister's recommendations were given effect;

- (d) the Minister will consider the revised Program, and any supporting material provided, and may accept it as the final Program; and
- (e) the Minister may request further modifications if still not satisfied that the Program provides for adequate protection of MNES.

7.3 The Minister may endorse the Program if satisfied that the reports submitted under clause 7.1 adequately address the impacts to which this Agreement relates, and that any recommended modifications to the Program (clause 7.2) or modifications having the same effect have been made. In considering whether to endorse the Program the Minister will also consider the endorsement criteria at Attachment C.

#### 8 APPROVAL OF ACTIONS UNDER THE PROGRAM

8.1 The Minister may approve, or approve with conditions, the taking of an action or class of actions in accordance with the endorsed Program under Section 146B of the EPBC Act. In doing so, the Minister must act in accordance with sections 146F-M of the EPBC Act. This includes considering MNES in the area affected by the Program and economic and social matters.

8.2 The Minister will seek comment from other Australian Government Ministers with administrative responsibilities relating to the actions before approving the taking of an action, or class of actions, pursuant to section 146C of the EPBC Act.

8.3 Both Parties will make publicly available electronically through their websites the endorsed Program (including the Program Report), the Strategic Assessment Report, the Supplementary Report and any approval decision and conditions.

8.4 Approvals for actions or classes of actions may occur progressively after endorsement of the Program.

#### 9 VARIATION, CONFLICT RESOLUTION AND TERMINATION

9.1 This Agreement may only be varied by written agreement (including electronic communications) between the Parties and in accordance with the EPBC Act.

9.2 Where there is a dispute between the Parties to this Agreement on a particular matter, the Parties will consult in the spirit of mutual cooperation in relation to that matter and will use their best endeavours to negotiate a mutually acceptable resolution.

9.3 Either party may at any time terminate this Agreement by written correspondence to the other Party.

9.4 The Parties do not intend this Agreement to create contractual or other legal obligations, or that a breach of the Agreement will give rise to any cause of action, or right to take legal proceedings.

9.5 To avoid any doubt, nothing in clause 9.4 is intended to override the provisions of the EPBC Act.

SIGNED BY:



The Hon. Tony Burke MP  
Minister for Sustainability, Environment, Water,  
Population and Communities

16.2.12

Dated



Dr Russell Reichelt  
Chairperson, Great Barrier Reef Marine Park Authority

Dated 6/1/2012

## Attachment A

## STRATEGIC ASSESSMENT AREA

The strategic assessment area is the Great Barrier Reef Region (refer Figure 1) and areas outside the Great Barrier Reef Region, to the extent that actions in those areas may affect the Great Barrier Reef Region.

Figure 1: Great Barrier Reef Region



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## Attachment B

## GBRMPA MANAGEMENT ARRANGEMENTS

Management of the GBRWHA relies upon a number of Commonwealth and Queensland agencies using a combination of management tools (including zoning plans, plans of management, permits, species recovery plans, the Reef Water Quality Protection Plan and shipping management arrangements), along with various management approaches (including education, planning, environmental impact assessment, monitoring, stewardship, enforcement) to regulate access, and to control and/or mitigate impacts associated with activities (such as tourism, fisheries, shipping) or address pressures (including climate change or declining water quality).

For the purpose of this strategic assessment, *GBRMPA's management arrangements* mean those management arrangements under the jurisdiction of GBRMPA. They include, but are not limited to, the following:

- Statutory instruments, including regulations, zoning plans, plans of management and permits;
- Non-statutory mechanisms including policies, position statements and guidelines;
- Partnership and collaborative arrangements with other Commonwealth and Queensland Government agencies;
- Partnerships with Traditional Owners in the management of marine resources;
- Partnership and stewardship programs, including education programs and engagement with local governments, communities, Indigenous persons and industry; and
- Research and monitoring programs.

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**ENDORSEMENT CRITERIA FOR STRATEGIC ASSESSMENT**

When deciding whether to endorse the Program, the Minister must be satisfied that the Strategic Assessment Report adequately addresses the impacts to which this Agreement relates, and that any recommendations by the Minister to modify the Program have been responded to appropriately.

In determining whether or not to endorse the Program, the Minister will have regard to the extent to which the Program meets the objects of the EPBC Act. In particular, that it:

- protects the environment, especially those aspects of the environment that are MNES;
- promotes ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;
- promotes the conservation of biodiversity;
- provides for the protection and conservation of heritage;
- promotes a cooperative approach to the protection and management of the environment; and
- assists in the co-operative implementation of Australia's international environmental responsibilities.

Without limiting the matters the Minister may consider when making the decision to endorse the Program, the Minister will consider the manner in which the Program:

- identifies direct, indirect and cumulative impacts on MNES;
- avoids impacts on MNES;
- mitigates the impacts on MNES;
- offsets the impacts on MNES;
- contributes to the enhancement of the existing environment and management of existing threats; and
- demonstrates adaption to reasonable climate change scenarios.

Commitments in the Program must be adequately resourced throughout its life. The Program must demonstrate an effective system of adaptive management that addresses uncertainty and contingency management as well as procedures for monitoring, independent auditing and public reporting on implementation.

The Program must address all of the above matters for it to be considered for endorsement by the Minister in accordance with the EPBC Act.





## Appendix 2

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### **Findings of the strategic assessment**



## Findings of the strategic assessment

The health of the Great Barrier Reef is declining, particularly inshore areas in the southern two-thirds of the Great Barrier Reef Region (the Region). The impacts affecting the Reef environment overlap and interact, and their accumulation through time and over an increasing area is diminishing the ecosystem's ability to bounce back from disturbance. A business-as-usual approach to managing the impacts will not be enough—additional management intervention is required. Based on concerted and constructive partnerships, there is good potential to address impacts and restore a more resilient Great Barrier Reef ecosystem.

### Current management

The Great Barrier Reef Marine Park Authority (the Authority) has a comprehensive management framework to protect and manage the Great Barrier Reef, comprising the Act and regulations, the zoning plan, plans of management, permits, fees and charges, Traditional Owner agreements, compliance, site infrastructure, policy, partnerships, stewardship and best practice, education and community awareness, research and monitoring, and reporting. In addition to the Authority, management of the Region relies upon a number of other Commonwealth and Queensland agencies to regulate access and to control or mitigate impacts associated with activities.

The Field Management Program is established under the Great Barrier Reef Intergovernmental Agreement and jointly funded by the Australian and Queensland governments. It undertakes operations and routine day-to-day management activities in the Marine Park, the adjacent Queensland Great Barrier Reef Coast Marine Park and on national park islands.

The Authority regularly reviews its management priorities and arrangements to ensure its resources are applied most effectively to achieve the long-term protection, ecologically sustainable use, understanding and enjoyment of the Great Barrier Reef.

### Impacts — past and present

The strategic assessment examined the impacts of activities conducted beyond the Region's boundaries: agriculture, aquaculture, urban development and industrial development; and those undertaken within the Region: tourism, commercial and recreational fishing, recreation, traditional use of marine resources, shipping, defence activities, research activities and some port activities. The impacts of climate change were also examined.

The assessment found:

- The most severe past and present impacts include those related to climate change (sea temperature increase); catchment run-off (freshwater inflow, nutrients, crown-of-thorns starfish outbreaks, pesticides and sediments); modifying supporting terrestrial habitats; and direct use (death of discarded species, dredging, dumping and resuspension of dredge material, and illegal fishing and poaching).
- Activities historically undertaken in the Region and its catchment, such as harvesting of iconic species and catchment clearing, are still affecting the Reef. Some of these legacy impacts date back decades, even to the 1800s, and their effects are likely to continue long into the future.
- A decade of extreme weather events (for example cyclones and floods) has caused a decline in Reef condition and reduced the capacity of the ecosystem to recover from these and other disturbances.
- Several of the most significant impacts (for example those related to catchment run-off and extreme weather) operate at broad scales affecting large areas of the Reef.
- Impacts on the Region's environment are compounding, focused close to the coast. For almost all of the major impacts considered, the intensity of effect is greatest in inshore areas in the southern two-thirds of the Region.
- Impacts are affecting hydrological and ecological connectivity, for example species moving between breeding and foraging areas. These connections are fundamental to the healthy functioning and integrity of the Reef as a whole.
- The vast majority of impacts are assessed as increasing into the future, driven mainly by climate change, economic growth and population growth. The success of recent initiatives to improve the quality of catchment run-off entering the Region means related impacts are likely to be reduced in the future.
- Cumulative effects are diminishing the ecosystem's ability to recover from disturbances. This loss of resilience is especially concerning given its importance in protecting the Region from future climate change impacts.

## Current condition and trend of values

The assessment of the condition and trend of values reflects the spatial pattern of impacts.

- Most habitats and species are in good to very good condition overall.
- Habitats and species in inshore areas in the Region's southern two-thirds have been most affected — those north of about Cooktown are generally in better condition. Habitats further offshore and in deeper water are also subject to fewer impacts.
- Habitats such as seagrass meadows and coral reefs, particularly in inshore areas in the southern two-thirds, are in serious decline. Populations of some iconic and highly vulnerable species such as dugongs and inshore dolphins are also continuing to decline.
- Terrestrial habitats that support the healthy functioning of the Reef have been substantially modified, especially in the southern two-thirds of the catchment.
- Environmental processes are generally in good or very good condition in the northern third of the Region, and in good or poor condition further south.
- Traditional Owners maintain their cultural practices and customs in the Region; however, many Indigenous heritage values have not been systematically identified and many are being affected, particularly around development areas and on islands.
- The community derives significant benefits from the Region's environment, determined in large part by the condition of that environment.
- While the natural beauty of most of the Region remains intact, especially for offshore coral reefs and aerial vistas, its underwater aesthetic value has declined in inshore areas in the southern two thirds.
- Three of the four relevant world heritage criteria are assessed as being in good to very good condition when benchmarked against their condition in 1981, and the property's integrity remains largely intact. The remaining criterion — habitats for conservation of biodiversity — is assessed as being in poor condition overall. Of particular concern is that more than half of the attributes for all criteria show a deteriorating trend since inscription of the area.

## Current management effectiveness

An independent assessment of management effectiveness commissioned as part of the strategic assessment found the Authority's management of activities within the Region for which it has direct responsibility is effective and its actions have delivered benefits for the Reef's resilience. The assessment highlighted that much more is required to halt and reverse observed declines in Reef health, especially in addressing impacts arising outside the Region.

The independent assessment reported management effectiveness challenges for those broadscale issues which are complex socially, biophysically and jurisdictionally. These include ports, shipping, climate change and extreme weather, coastal development and catchment run-off (water quality protection). For commercial and recreational fishing, the reviewers identified particular challenges in monitoring and compliance.

Addressing consequential and cumulative impacts, the application of socio-economic and Indigenous knowledge, and setting of targets to benchmark performance were found to be problematic for most management topics.

A series of demonstration case studies highlighted that Reef-wide approaches to management need to be complemented by regional cooperative management approaches to account for spatial variation. They also highlighted:

- the advantages of being proactive in tackling the issues facing the Reef
- the importance of partnerships — including across all levels of government, and with Traditional Owners, industry and the broader community — to strengthen efforts to improve water quality, address impacts at a local scale and implement regionally or sector-specific best practice management solutions
- the value of foundational activities to underpin management, such as long-term integrated monitoring and improved understanding of heritage values and community benefits derived from the Region.

## The Reef's future

The Great Barrier Reef Region remains one of the most resilient tropical marine ecosystems in the world, however there is increasing evidence that its resilience is being seriously eroded. Based on the effectiveness of the Authority's current management, the current condition of values and the likely future impacts, a number of impacts were assessed as presenting a high or very high risk to the future condition of the Region's values:

- Climate change is the most serious threat facing the Reef and is likely to have far reaching consequences for the future of the Region's environment.

- Agricultural practices in the Great Barrier Reef catchment are improving and leading to reduced nutrient and sediment loads entering the Reef through catchment run-off. However, there is likely to be a significant lag time before measurable water quality improvements are achieved in the Region.
- Clearing and modifying coastal habitats that support the Reef are likely to continue to present a very high risk, especially to inshore biodiversity, for example through the loss of connectivity between coastal and marine environments.
- Outbreaks of crown-of-thorns starfish are likely to continue over the next 25 years, contributing further to coral mortality.
- While there have been substantial improvements in the management of fishing in the Region, the death of discarded and incidentally caught species of conservation concern across all fisheries and the Queensland Shark Control Program continues to present a high risk to their populations.

The assessment found that, without substantial additional management intervention, the future outlook for the Reef is very poor, especially in inshore areas in the southern two-thirds of the Region.

### **Path forward**

The strategic assessment concluded that managing the multiple impacts affecting the Reef requires a multi-pronged approach and, that by working together with an ecosystem approach, the decline of the Great Barrier Reef ecosystem can be reversed.

A concerted international effort to reduce global climate change, combined with action at the national, state and local levels to build the Reef's resilience by reducing impacts, is considered the best insurance for protecting the outstanding universal value of the Great Barrier Reef.

Effective future protection of matters of national environmental significance relies on the integration of management measures and a focus on protection of the Great Barrier Reef environment as a whole. Where necessary, specific management actions (including intervention) may be required to address impacts affecting particular matters of national environmental significance at a local scale (for example, individual threatened species).

There is a need to maintain and restore the Region's biodiversity. In the northern third of the Region, there is a need to focus on maintaining the Reef's health. In contrast, restoring the condition of values of most concern and halting and reversing impacts on those values should be the key outcomes for restoring Reef health in the southern two-thirds of the Region.

There is a need to improve understanding and protection of heritage values within the Region, together with the community benefits derived from the environment. These considerations need to be integrated into planning and assessment decision making, together with processes that increase the public's confidence in their ability to engage and influence policy and development decisions, consistent with the principles of ecologically sustainable use.

Critically, there is a need to improve management of cumulative impacts and develop mechanisms which will deliver net environmental benefits across the Region. These improvements will be vital to protecting the Reef's outstanding universal value and restoring the Reef's health and resilience for generations to come.

### **Recommended improvements to the Authority's management arrangements**

The strategic assessment includes a number of recommendations aimed at improving the Authority's management arrangements.

#### **Identifying matters of national environmental significance**

- **REC1:** Explicitly incorporate consideration of all values relevant to matters of national environmental significance, including elements of the property's outstanding universal value, into the Authority's programs, plans and policies
- **REC2:** Improve spatial mapping capabilities to support planning and assessment decision making, including the range of values mapped and public availability
- **REC3:** Work closely with Australian and Queensland government agencies to help identify values of the Great Barrier Reef World Heritage Area that are not easily represented and measured such as aesthetic values
- **REC4:** Collaborate with Traditional Owners to undertake an assessment of the Indigenous heritage values of the Region
- **REC5:** Develop and implement knowledge management systems for Indigenous and historic heritage information, including a protocol for managing culturally sensitive information and improved information sharing arrangements
- **REC6:** Improve understanding of the role the Great Barrier Reef plays in the life of the community

### **Assessing impacts on matters of national environmental significance**

- **REC7:** Work closely with Australian and Queensland government agencies to improve understanding and management of cumulative impacts from activities within and adjacent to the Region and provide clearer guidance on how proponents and decision makers should address cumulative impacts in assessments
- **REC8:** Streamline assessment processes across jurisdictions and seek to have a more coordinated approach to community consultation

### **Avoiding impacts on matters of national environmental significance**

- **REC9:** Improve alignment between the Authority's and Queensland Government's protected area and tourism management arrangements and look for opportunities to streamline
- **REC10:** Develop and implement plans of management in areas of the Great Barrier Reef Marine Park that have high growth for recreation and other uses
- **REC11:** Support development of a Queensland ports strategy that concentrates port development around long-established major ports in Queensland, and encourage port master planning
- **REC12:** Promote a strategic approach to the development and operation of marinas and other access infrastructure along the Great Barrier Reef coast
- **REC13:** Review and update the *Great Barrier Reef Marine Park Heritage Strategy* to guide management actions to strengthen recognition and protection of heritage values
- **REC14:** Promote, recognise and encourage stewardship and best practice efforts by community, industry and government
- **REC15:** Support increased investment in site infrastructure to protect matters of national environmental significance in the Great Barrier Reef Region
- **REC16:** Improve compliance through more effective surveillance and compliance activities, access to latest technology, increased coordination across jurisdictions and strengthened powers to prevent repeat offending
- **REC17:** Support a collaborative, Reef-wide management strategy for islands and contribute to its development and implementation

### **Mitigating impacts on matters of national environmental significance**

- **REC18:** Update and strengthen the Great Barrier Reef Marine Park water quality guidelines to address a broader range of habitats and species and account for cumulative impacts
- **REC19:** Improve the effectiveness of the Authority's hydrodynamic guidelines as a decision making tool by requiring consideration of a greater range of environmental factors, and regularly reviewing them to reflect improvements in understanding
- **REC20:** Support research on critical ecosystem thresholds, with a focus on inshore biodiversity and associated ecosystems
- **REC21:** Improve understanding and the Authority's management of the impacts of noise on species, particularly at-risk and inshore species
- **REC22:** Reduce crown-of-thorns starfish outbreaks by continuing to improve water quality and through a long-term control program

### **Offsetting impacts on matters of national environmental significance**

- **REC23:** Develop a policy and supporting mechanisms to facilitate strategic and collaborative implementation of offsets across jurisdictions
- **REC24:** Inform implementation of Australian and Queensland government offsets policies and restoration programs by identifying actions that will maximise the delivery of environmental benefits to the Region

### **Enhancing matters of national environmental significance**

- **REC25:** Establish a management framework with clear outcomes and targets for the protection of values and the management of impacts, including cumulative impacts
- **REC26:** Develop and implement a long-term sustainability plan for the Great Barrier Reef in cooperation with Australian and Queensland government agencies to better coordinate programs designed to manage and improve the condition of the Reef
- **REC27:** Strengthen engagement with all relevant partners to facilitate actions that maintain and enhance the condition of values and reduce impacts, particularly in relation to climate change, catchment run-off, degradation of coastal ecosystems and direct use
- **REC28:** Develop a comprehensive management framework and an Indigenous heritage strategy for Traditional Owner use and management of the Great Barrier Reef
- **REC29:** Adopt regionally-based cooperative approaches to protect inshore biodiversity hotspots — supporting local actions and encouraging cooperation

- **REC30:** Improve alignment and coordination of strategic research priorities and strengthen partnerships between the Authority and research institutions to facilitate the delivery of critical research needs

#### **Monitoring and evaluation**

- **REC31:** Implement an integrated monitoring, reporting and adaptive management program for the Great Barrier Reef World Heritage Area, including more explicit reporting on the condition and trend of matters of national environmental significance
- **REC32:** Maintain and improve monitoring, investigation and data management relating to critical species and habitats
- **REC33:** Support implementation of a long-term social and economic monitoring program to improve understanding of changing use, investment and values

#### **Governance**

- **REC34:** Contribute to the development of improved governance arrangements for the management and coordination of development activities that affect the Great Barrier Reef

#### **Adapting to climate change**

- **REC35:** Communicate the implications of climate change impacts for the Great Barrier Reef and the critical need to halt increasing concentrations of global greenhouse gases and restore them to levels that will support growth, recruitment and recovery processes of the Great Barrier Reef ecosystem
- **REC36:** Ensure the impacts of climate change and extreme weather are appropriately considered in the Authority's management decisions
- **REC37:** Encourage reduction of greenhouse gas emissions in the Great Barrier Reef Region in partnership with industry and communities
- **REC38:** Support initiatives to build the capacity of management agencies and Reef users to adapt and respond to climate change and extreme weather events





## Appendix 3

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**Key values and attributes of, and environmental processes relevant to, matters of national environmental significance**



## Key values and attributes of matters of national environmental significance

For the World Heritage Area, connections are based on the Statement of Outstanding Universal Value<sup>1</sup>. For the listed species, the key linkages (such as important habitats and components of their diets) are shown for each group of species. For wetlands of international importance, the connections are those discussed in the Ramsar Convention information sheet<sup>2</sup>.

Key values and attributes	World heritage properties								Listed migratory and threatened species								Wetlands of international importance
	Criterion i (now viii)	Criterion ii (now ix)	Criterion iii (now vii)	Criterion iv (now x)	Integrity	Great Barrier Reef Marine Park	National heritage places	Commonwealth marine areas	Marine turtles	Estuarine crocodiles	Whales	Dolphins	Dugongs	Sharks and rays	Seabirds	Shorebirds	
<b>Biodiversity — Great Barrier Reef habitats</b>																	
Islands		●	●	●	●	●	●	●	●	●					●	●	●
Beaches and coastlines			●		●	●	●	●	●	●					●	●	●
Mangrove forests			●	●	●	●	●	●	●	●				●	●	●	●
Seagrass meadows				●	●	●	●	●	●			●	●	●			●
Coral reefs (<30 m)		●	●	●	●	●	●	●	●					●			●
Deeper reefs (>30 m)		●	●	●	●	●	●	●	●					●			
Lagoon floor				●	●	●	●	●				●	●	●			
Shoals				●	●	●	●	●				●		●	●		
<i>Halimeda</i> banks		●			●	●	●	●	●								
Continental slope					●	●	●	●									
Open waters			●	●	●	●	●	●	●	●	●	●	●	●	●		●
<b>Biodiversity — terrestrial habitats that support the Great Barrier Reef</b>																	
Saltmarshes						●		●		●					●	●	●
Freshwater wetlands						●		●		●					●	●	●
Forested floodplain						●		●									●
Heath and shrublands						●		●									
Grass and sedgeland						●		●								●	●
Woodlands						●		●									●
Forests						●		●									●
Rainforests			●			●		●									
Connecting water bodies				●	●	●	●	●	●	●		●	●	●	●	●	●
<b>Biodiversity — species</b>																	
Mangroves			●	●	●	●	●	●									●
Seagrasses				●	●	●	●	●	●			●					●
Macroalgae				●	●	●	●	●	●								
Benthic microalgae				●	●	●	●	●									

Key values and attributes	World heritage properties					Listed migratory and threatened species											Wetlands of international importance	
	Criterion i (now viii)	Criterion ii (now ix)	Criterion iii (now vii)	Criterion iv (now x)	Integrity	Great Barrier Reef Marine Park	National heritage places	Commonwealth marine areas	Marine turtles	Estuarine crocodiles	Whales	Dolphins	Dugongs	Sharks and rays	Seabirds	Shorebirds		
Corals			●	●	●	●	●	●										
Other invertebrates		●		●	●	●	●	●	●		●	●		●	●	●	●	
Plankton and microbes				●	●	●	●			●								
Bony fish		●	●	●	●	●	●			●	●		●	●	●	●	●	
Sharks and rays				●	●	●	●			●			●					
Sea snakes				●	●	●	●											
Marine turtles			●	●	●	●	●	●									●	
Estuarine crocodiles				●	●	●	●		●									
Seabirds			●	●	●	●	●								●			
Shorebirds				●	●	●	●									●	●	
Whales			●	●	●	●	●			●								
Dolphins				●	●	●	●				●							
Dugongs				●	●	●	●						●				●	
<b>Geomorphological features</b>																		
Coral reefs	●		●		●	●	●											
Islands and shorelines	●		●		●	●	●	●							●	●	●	
Channels and canyons	●				●	●	●											
River deltas	●				●	●	●											
<i>Halimeda</i> banks	●				●	●	●											
Seagrass meadows	●				●	●	●	●									●	
<b>Indigenous heritage</b>																		
Cultural practices, observances, customs and lore		●			●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sacred sites, sites of particular significance, places important for cultural tradition		●			●	●	●										●	
Stories, songlines, totems and languages		●			●	●	●	●	●	●	●	●	●	●	●	●	●	
Indigenous structures, technology, tools and archaeology		●			●	●	●										●	
<b>Historic heritage</b>																		
Places of historic significance — historic shipwrecks						●		●										
Places of historic significance — World War II features and sites						●		●										

Key values and attributes	World heritage properties					Listed migratory and threatened species										Wetlands of international importance		
	Criterion i (now viii)	Criterion ii (now ix)	Criterion iii (now vii)	Criterion iv (now x)	Integrity	Great Barrier Reef Marine Park	National heritage places	Commonwealth marine areas	Marine turtles	Estuarine crocodiles	Whales	Dolphins	Dugongs	Sharks and rays	Seabirds		Shorebirds	
Places of historic significance — lightstations						●		●										
Places of historic significance — other						●		●										●
Places of scientific significance (research stations, expedition sites)						●		●										
Places of social significance — iconic sites						●		●										
<b>Community benefits of the environment</b>																		
Income						●		●										●
Employment						●		●										●
Understanding						●		●										
Appreciation			●			●	●	●										●
Enjoyment			●			●	●	●										
Access to Reef resources						●		●										
Personal connection						●		●										
Health benefits						●		●										
Aesthetics			●		●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Key environmental processes relevant to matters of national environmental significance

For the World Heritage Area, connections are based on the Statement of Outstanding Universal Value<sup>1</sup>. For listed species, processes that have a major supporting role in maintaining the species are shown (for example, the role that beaches play in the nesting of listed marine turtles). For wetlands of international importance, the connections shown are those discussed in the Ramsar Convention information sheet<sup>2</sup>.

Key environmental processes	World heritage properties					Listed migratory and threatened species											Wetlands of international importance
	Criterion i (now viii)	Criterion ii (now ix)	Criterion iii (now vii)	Criterion iv (now x)	Integrity	Great Barrier Reef Marine Park	National heritage places	Commonwealth marine areas	Marine turtles	Estuarine crocodiles	Whales	Dolphins	Dugongs	Sharks and rays	Seabirds	Shorebirds	
Waves, currents and tides	●	●			●	●	●	●	●						●	●	
Cyclones	●	●			●	●	●	●	●	●		●	●	●	●	●	
Wind	●	●			●	●	●	●							●		
Sedimentation	●	●			●	●	●	●	●				●			●	●
Sea level	●	●			●	●	●	●	●	●						●	●
Sea temperature		●			●	●	●	●	●	●							
Light		●			●	●	●	●	●				●				
Nutrient cycling		●			●	●	●	●									●
Ocean acidity		●			●	●	●	●									
Freshwater inflow and salinity		●			●	●	●	●									●
Microbial processes		●			●	●	●	●									
Particle feeding		●			●	●	●	●									
Primary production		●			●	●	●	●	●				●				
Herbivory		●			●	●	●	●	●				●				
Predation		●			●	●	●	●	●	●	●	●		●	●	●	
Symbiosis		●			●	●	●	●									
Competition		●			●	●	●	●	●	●	●	●	●	●	●	●	
Connectivity	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●
Recruitment		●			●	●	●	●	●	●	●	●	●	●	●	●	●
Reef building	●	●	●		●	●	●	●									

## References

1. Department of Sustainability, Environment, Water, Population and Communities 2012, Statement of Outstanding Universal Value - Great Barrier Reef World Heritage Area, DSEWPC, Canberra.

2. Department of Defence, Environmental Protection Agency, Great Barrier Reef Marine Park Authority and Environment Australia 1999, Information sheet on Ramsar Wetlands (RIS), Environment and Heritage Section, Department of Defence, Canberra.

## Appendix 4

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### Direct drivers, activities, impacts and risks





## Direct drivers, activities, impacts and risks

Broad categories used in the assessment are shown (on left), however impacts may fall into more than one category.  
 \* indicates impact is likely to be the result of a variety of activities.

	Impacts	Risk to Region's values				Direct driver	Activities in the Region														
		Biodiversity values	Geomorphological features	Indigenous heritage values	Historic heritage values		Activities in the catchment														
							Agriculture	Aquaculture	Urban development	Industrial development	Port activities	Traditional use	Tourism	Fishing — commercial	Fishing — recreational	Recreation	Shipping	Defence activities	Research activities		
Climate change	Altered ocean currents	High	Medium	High	Medium	●			●	●											
	Cyclone activity	Very high	High	Very high	High	●															
	Increased sea temperature	Very high	High	Very high	Medium	●															
	Ocean acidification	Very high	High	Very high	Medium	●															
	Rising sea level	High	Medium	High	High	●															
Catchment run-off	Increased freshwater inflow	High	High	High		●	●		●	●											
	Nutrients from catchment run-off	Very high	High	High			●	●	●	●					●	●					
	Outbreak of crown-of-thorns starfish	Very high	Medium	High			●	●	●	●											
	Pesticides from catchment run-off	High		High			●	●	●	●											
	Sediments from catchment run-off	Very high	High	High			●	●	●	●	●										
Degradation of coastal ecosystems	Urban and industrial discharge	High		High			●	●	●	●	●										
	Acid sulphate soils	High		High			●	●	●	●	●										
	Artificial barriers to flow	High		High			●	●	●	●	●										
	Atmospheric pollution	Medium		Medium	Medium		●		●	●	●								●		
	Coastal reclamation	High	High	High	High				●	●	●	●		●	●	●	●				
Direct use	Light impacts (artificial)	High		High				●	●	●	●								●		
	Modifying supporting terrestrial habitats	Very high		Very high	High		●	●	●	●	●		●	●	●	●					
	Dredging	High	High	High	High				●	●	●	●								●	
	Dumping and resuspension of dredge material	High	High	High	Medium						●									●	
	Exotic species and diseases*	High		High				●						●	●	●	●	●			
	Extraction — death of discarded species	High		Very high											●	●				●	
	Extraction — fishing in spawning aggregations	High		High											●	●					
	Extraction — herbivores	High												●	●	●				●	
	Extraction — lower order predators	High		High										●	●	●				●	
	Extraction — lower trophic orders	High		High										●	●	●				●	
	Extraction — top order predators	High		High										●	●	●				●	
	Illegal fishing and poaching	Very high		Very high											●	●					
	Marine debris*	High		High	Medium		●	●	●	●		●	●	●	●	●	●	●			
	Noise pollution	High		High						●	●								●	●	●
	Outbreak of disease*	High		High			●				●										
	Outbreak or bloom of other species*	High		High			●				●								●		
	Physical damage — fishing	High	High	High	High											●					
	Physical damage — other	High	High	High	High									●	●	●	●	●	●	●	●
	Physical damage — ship grounding	High	Medium	High	High									●	●				●		
	Spill — large chemical	High		High	Medium					●	●	●								●	
	Spill — large oil	High		High	Medium						●	●								●	
	Spill — small chemical or oil	High		High	Medium					●	●	●		●	●	●	●	●	●		
	Vessel strike on wildlife	High		High							●				●	●	●	●	●	●	●
Waste discharge from vessels	High		High	Medium									●	●	●	●	●	●	●	●	
Wildlife disturbance	High		High							●				●	●	●	●	●	●	●	

**Risk rating** Low  Medium  High  Very high







**Australian Government**

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Marine Park Authority**

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