



Australian Government



Queensland Government

Reef 2050 Plan

2017 ANNUAL REPORT



Cover photo: Bright yellow polyps of a Turret coral (*Tubastrea*) at night

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Reef 2050 Plan

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Aboriginal and Torres Strait Islander peoples
are the Traditional Owners of the
Great Barrier Reef area and have a continuing
connection to their land and sea country.

Soft tree corals, feather star and Tubastrea corals
Photographer: R. & V. Taylor © Commonwealth of Australia (GBRMPA)



PREFACE—ABOUT THIS DOCUMENT

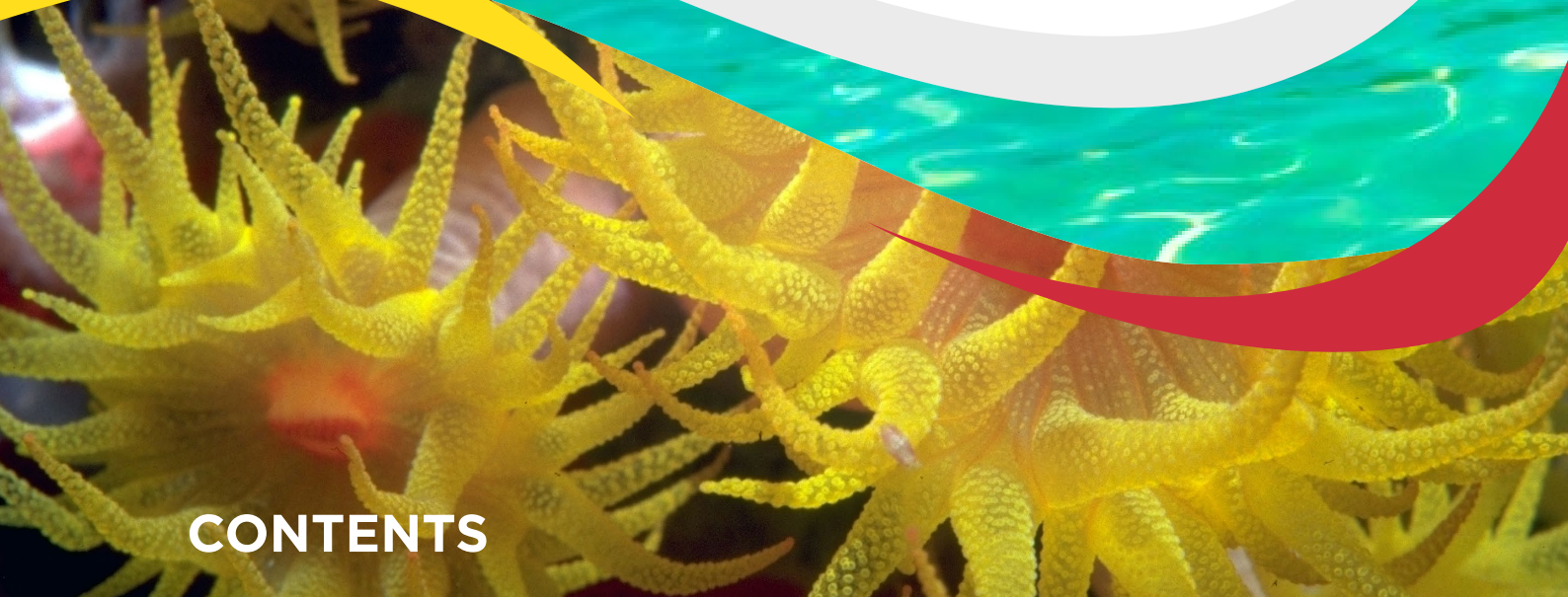
This is the second Annual Report of the Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan). The 2017 Annual Report provides an overview of progress on implementing Reef 2050 Plan actions to mid-2017. However, further activity undertaken since June 2017 has been referenced in the narrative. The overview of progress is based on more detailed action-by-action progress reporting, which you can browse online on the Department of the Environment and Energy's Monitoring Evaluation Reporting and Improvement Tool (MERIT) website:

<https://fieldcapture.ala.org.au/explore/dashboard/reef2050>

The next Annual Report will be released at the end of 2018.



Coral Cod (*Cephalopholis miniata*) resting amongst a variety of hard corals
Photographer: B. Cropp © Commonwealth of Australia (GBRMPA)



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MINISTERS' YEAR IN REVIEW

The Great Barrier Reef is undisputedly one of the world's most important natural assets. The Reef is one of the richest and most complex natural ecosystems on earth. It is of enormous importance, scientifically and intrinsically, and to the Traditional Owners, communities and industries that depend on it.

Like all reefs globally, pressures related to climate change are impacting the Reef's resilience and we are witnessing dramatic system-wide decline in its condition. In 2017, the Great Barrier Reef faced a second consecutive major bleaching event leading to widespread coral mortality and habitat loss on the Reef. This was followed by category 4 Tropical Cyclone Debbie crossing the Great Barrier Reef and Whitsunday Islands in March. Tropical Cyclone Debbie was the tenth severe category cyclone to affect the Reef since 2005. The cyclone was large, intense and slow moving—causing considerable environmental, social and economic damage.

Responding to these events emphasises the importance of our partnership approach to implementing the Reef 2050 Plan. We recognise the ongoing engagement and dedication of Traditional Owners, industry, communities and scientific experts through the Reef 2050 Advisory Committee, Reef 2050 Plan Independent Expert Panel and Reef 2050 Integrated Monitoring and Reporting Program is vital to the continued successful implementation of the plan and helping to build the resilience of the Reef.

Australia's efforts in establishing the Reef 2050 Plan were recognised in July 2017 at the 41st Session of the World Heritage Committee in Krakow, Poland. The Committee acknowledged the successful inception and early implementation of the Reef 2050 Plan, and the development of the Reef 2050 Plan Investment Framework. The Committee noted that we also need to accelerate actions, particularly to improve water quality in the Reef. We are doing just that.

We are proud of the Investment Framework which is guiding our investment decisions for the Reef. The Investment Framework established our current investment and funding needs for Reef 2050 Plan actions, identified six priority areas for future investment, and proposed strategies and pathways for investment diversification. The Investment Framework shows we are investing \$1.28 billion over five years on Reef 2050 actions.

The Australian Government continues to deliver the Reef Trust program. In 2017, the fifth phase of the Reef Trust was announced, comprising two major partnership projects. The first is a \$5 million fund matching arrangement with Greening Australia, which has been combined with earlier investment of \$2 million from Reef Trust Phase III, to restore priority wetlands along coastal areas of the Great Barrier Reef. The second, is the Enhanced Efficiency Fertiliser (EEF) project which is providing \$4.5 million, with an estimated \$12.8 million co-investment by the sugar-cane industry, to improve nutrient run-off. To date, the Reef Trust has facilitated up to \$19.8 million of private investment through co-investment partnerships and we look forward to continuing this partnership approach in the coming years.

Together, the Australian and Queensland governments released the draft Reef 2050 Water Quality Improvement Plan 2017–2022 for consultation, which is our joint plan for managing land based impacts on Reef water quality. The new draft plan builds on 15 years of efforts of governments working in partnership with landholders, natural resource managers, industry, research and conservation groups to reduce the amount of pollution flowing in to the Reef. The plan is

underpinned by the independent Scientific Consensus Statement which draws together all published science on land-use impacts on reef water quality.

In 2017, the Queensland Government continued to implement the Queensland Reef Water Quality Program, including responding to the recommendations made by the Great Barrier Reef Water Science Taskforce. This included continued investment in extension, education and science programs to assist landholders to transition to improved land management practices. The program also saw the launch of two large scale Major Integrated Projects (MIPs) to reduce pollution in the Burdekin and Wet Tropics as well as funding projects through the Great Barrier Reef Innovation Fund.

In March 2017, the Queensland Government released its proposal for broadening and enhancing existing Reef protection regulations to radically improve water quality flowing to the Reef and progress towards the water quality targets. The proposals include setting or improving minimum practice standards targeting nutrient and sediment pollution for all key industries in all reef catchments, setting pollution load limits for each reef catchment and providing a framework for water quality offsets. A Regulatory Impact Statement for the proposed regulation was released for public consultation in September.

To respond to the unprecedented coral bleaching and cumulative impacts on the Great Barrier Reef, the Great Barrier Reef Marine Park Authority hosted a Great Barrier Reef Summit—Managing for Resilience. The summit brought together more than 70 regional, national and international delegates representing marine park managers, Traditional Owners, government agencies, the scientific community, industry groups and individuals with deep connections to the Reef. The summit produced insights, innovations and recommendations that, together with the knowledge and expertise of the Great Barrier Reef Marine Park Authority staff, has formed the basis of the Great Barrier Reef Resilience Blueprint. This blueprint builds on existing management arrangements to protect the Great Barrier Reef, and outlines additional actions and innovative approaches the Great Barrier Reef Marine Park Authority will pursue with its partners to better support and protect coral reefs in the face of a changing climate.

The Great Barrier Reef Marine Park Authority's crown-of-thorns starfish program was strengthened in early 2017 through the launch of a second control vessel. While the program has been in place for more than 10 years, it is only in the past few years that the effectiveness was significantly increased with faster methods of removal. The control program has successfully protected coral cover on 21 priority reefs, in the Cairns region where 50 per cent of Reef tourism visitation occurs.

We are confident the Reef 2050 Plan remains the right framework to respond to the challenges facing the Reef. In July 2017, we brought forward the immediate commencement of the mid-term review of the Reef 2050 Plan to provide an opportunity to reassess the plan in the context of recent widespread coral bleaching. The Plan's revision is critical in light of recent events to identify and accelerate priority actions for managing the health of the Reef. While our efforts and success to date have been substantial, we acknowledge the challenges we are facing and are fully committed to protecting the Reef.

The Hon Josh Frydenberg MP

Australian Minister for the
Environment and Energy

The Hon Leeanne Enoch MP

Queensland Minister for Environment and
the Great Barrier Reef, Minister for Science
and Minister for the Arts

ADVISORY BODIES REVIEW

Foreword from the Chair of the Independent Expert Panel

The Independent Expert Panel exists to provide government with frank, independent advice, to enable better decision making across both policy and operational matters.

The Panel provides a commentary and advice on the scientific evidence that must be at the heart of our response to threats facing the Great Barrier Reef.

More specifically, Ministers requested that the Panel develop advice on the mass coral bleaching of the Great Barrier Reef in 2016 and 2017. In response to this request, the Panel held a dedicated workshop to develop advice on the impacts (and causes) of the widespread bleaching events.

The Panel concluded that coral bleaching since early 2016 has changed the Reef fundamentally and that the cause is primarily a consequence of higher sea surface temperatures resulting from global warming. We advised that globally coherent action must be taken to reduce greenhouse gas emissions to levels that will keep temperature increases to the bottom end of the range highlighted in the Paris Agreement (1.5°C) or even lower. The Panel advised that this is an outcome that must be achieved if we are to protect as much of the Reef as possible for the long-term.

In light of the complex challenges, the Panel agreed that the Reef 2050 Plan is a strong foundation, but that it can be strengthened through the mid-term review; because the circumstances are now different from when the Plan was first drafted. We advised, for example, that a revised Plan needs to consider the potential impacts of plausible climate and weather scenarios on the Reef.

We advised, that since even successful action to reduce global emissions will take time to have the desired and critical effect, the Reef 2050 Plan needs to encourage mitigation, adaptation and management of the Reef in the face of inexorable global warming. The Panel is currently providing targeted input into this mid-term review.

New solutions are required to address the challenges for the Reef. Ministers requested that the Panel develop problem statements for an innovation challenge to call for new ideas to improve the outcomes for the Reef. We identified and developed problem statements to focus on four priority areas at this stage:

- boosting coral abundance on the Reef
- reducing the impacts of crown-of-thorns starfish to build Reef resilience
- slowing the water down: retaining water and sediments in Reef catchments,
- improving Reef protection by working with communities.

While the Panel members have little doubt that global warming is the heart of the problem, work should continue to improve water quality, improve management of vegetation on-shore and off-shore and all other actions that help enhance the resilience of corals. This will require substantial effort to minimise the impact of development, of agriculture and damage to catchments.

If the Reef is to survive, even if a different Reef from that historically enjoyed by Indigenous and more recent communities, it will require a co-ordinated, coherent (locally and globally), innovative and a sometimes brave approach to initiate and sustain change.

Professor Ian Chubb AC FAA FTSE

Chair, Independent Expert Panel

Foreword from the Chairman of the Reef 2050 Advisory Committee

2017 was not an easy year for members of the advisory bodies charged with providing advice to governments to support implementation and review of the Reef 2050 Plan. Nor for anyone who cares about coral reefs world-wide and is committed to the protection and preservation of the greatest reef system of them all—the iconic Great Barrier Reef.

The stakeholders represented on the Reef 2050 Advisory Committee (RAC) all share this commitment and, since the Committee's inception in 2015, have worked together very effectively, in a spirit of genuine partnership, to consider the actions in the Plan, identify priorities and provide guidance on policy approaches.

As this Annual Report shows, during 2016–17, considerable progress was achieved across a range of areas. But 2017 also required a shift in the focus of the Committee's attention and effort—from implementation of the Reef 2050 Plan, to consideration of the state of the reef and planning for the conduct of the mid-term review, scheduled for 2018.

The trigger for this change was a significant deterioration in the state of the reef, caused by back-to-back mass coral bleaching events in 2016 and 2017, combined with the impact of Tropical Cyclone Debbie. Asked by Ministers for advice on how to respond to these developments, RAC members were unanimous in expressing their deep concern and the need for urgent and decisive action. Recognising climate change as the principal pressure on the Reef, they emphasised the need for strong leadership in this area. While reaffirming the Reef 2050 Plan as the right framework for managing the Reef, and for addressing the multiple pressures affecting it, the Committee concluded that the changed state of the Reef meant that some aspects of the Plan would need to be changed: action priorities would need to be re-assessed, gaps identified, substantive additions considered.

The Committee's advice was reflected in governments' decision to bring forward the mid-term review of the Plan and make this a more substantive review than previously planned.

RAC members were invited to provide comment on the scope of this review in late 2017 and will have the opportunity to discuss the review further in early 2018. I anticipate some lively exchanges as we begin the work of the New Year. Although the Committee is in ready agreement on many issues (e.g. the need for a greater focus on local and regional action on climate adaptation; the need to step up action to control crown-of-thorns starfish, the need to embrace innovation), there are evident differences of view on some key subjects (most notably climate change and legislative action). Such differences of views are to be expected, with such a wide range of organisations and sectors represented on the Committee. But there is reason to be optimistic that we can continue to work in a positive way and maintain the collaborative spirit that has animated the work of the RAC since its inception.

Every member of the RAC is there because they—the sectors and organisations they represent (business, communities and non-government organisations)—have a stake in the Great Barrier Reef. Their advice is sought and valued by governments because of this and because their knowledge of the Reef runs deep. With that deep knowledge, RAC members know—absolutely—the size and urgency of the challenge before us. And they also know that we cannot afford to fail.

The Honourable Penelope Wensley AC

Chairman, Reef 2050 Advisory Committee

Foreword from the co-chairs of the Reef 2050 Integrated Monitoring and Reporting Program Steering Group

Coral reefs around the world, including the Great Barrier Reef, are facing significant impacts and pressures. Many reefs have been affected by human induced global warming causing mass coral bleaching and significant loss of coral cover.

As these impacts accumulate over space and time they can lower the resilience of the ecosystem and its ability to tolerate and recover from disturbances.

Climate change is the main driving pressure on coral reef ecosystems globally and its current and future effects should be a key consideration in any monitoring and modelling of cumulative pressures on the biophysical, social, economic and cultural values of the Reef.

Extreme weather events are becoming more frequent, requiring management to respond more rapidly. For example, back-to-back coral bleaching events in 2016 and 2017 resulted in an unprecedented period of climate change-induced impacts on the Reef. These impacts were concentrated in the northern Great Barrier Reef in 2016 and extended to the central and southern sections in 2017. In addition, a crown-of-thorns starfish outbreak has been ongoing since 2010 and continues to spread south along the Reef. In March 2017, severe Tropical Cyclone Debbie caused extensive damage and flood impacts in the southern-third of the Marine Park.

To respond to this growing challenge, Reef managers and stakeholders need timely access to relevant information to guide tactical and operational (day-to-day) decisions, and to shape strategic policy for the Reef's future protection and management.

The Reef 2050 Integrated Monitoring and Reporting Program will bring together relevant monitoring for the Reef. This spans the entire Great Barrier Reef and its catchment and includes monitoring values within the Reef 2050 Plan themes; ecosystem health, biodiversity, heritage, water quality, community and economic benefits.

The principal purpose of the program is to evaluate whether the Reef 2050 Plan is on track to meet its outcomes, objectives and targets and enable timely and suitable responses by Reef managers and partners to emerging issues and risks.

To manage a system as complex as the Great Barrier Reef key cause-and-effect relationships within the system need to be understood. Targeted research, monitoring and modelling are used to gain this understanding, inform evaluation and adaptive management actions. Key indicators are needed to monitor condition, trend and resilience values as well as likely future trends in drivers and pressures and how they affect the Great Barrier Reef values. Indicators that are sensitive to management actions are also needed to enable the assessment of management effectiveness.

Program partners are continuing to work together to align existing monitoring and modelling programs and develop systems to improve timely access to information across Reef and regional scales. Key achievements this year include:

- investing in key monitoring gaps to ensure continuity of data sets and information for the Great Barrier Reef Outlook Report 2019
- undertaking a market research project to understand how Traditional Owners, partners and stakeholders use Reef-related information to inform and support adaptive management decisions at strategic, operational and tactical levels
- establishing expert-theme groups to provide advice on program design across key components of the Great Barrier Reef—coral reefs, seagrass meadows, marine physical chemical, megafauna, human dimensions, Indigenous heritage, estuaries and catchment, fishing and fisheries, and islands
- developing conceptual models and identifying potential indicators, including interdependencies, for key components of the Great Barrier Reef
- targeting research key to the program with the National Environmental Science Program and Great Barrier Reef Foundation
- working with Traditional Owners and partners to negotiate data handling, storing and sharing agreements.

In the coming year the program will provide recommendations on new or revised monitoring activities that meet the needs of managers and minimise costs. Monitoring and modelling investment priorities and decisions will be based on cost-benefit and risk analyses. In addition, the program will develop a prototype for a decision-support tool that will assist managers in using monitoring and modelling information to target management actions.

The program will continuously evolve based on the findings of the Great Barrier Reef Outlook Report, new technologies and priority management and stakeholder needs to ensure it continues to provide relevant information to inform adaptive management decisions.

We look forward to continuing our work with partners to deliver the program in 2018.

Dr Russell Reichelt FTSE

Chairman
Great Barrier Reef Marine Park Authority

Jamie Merrick

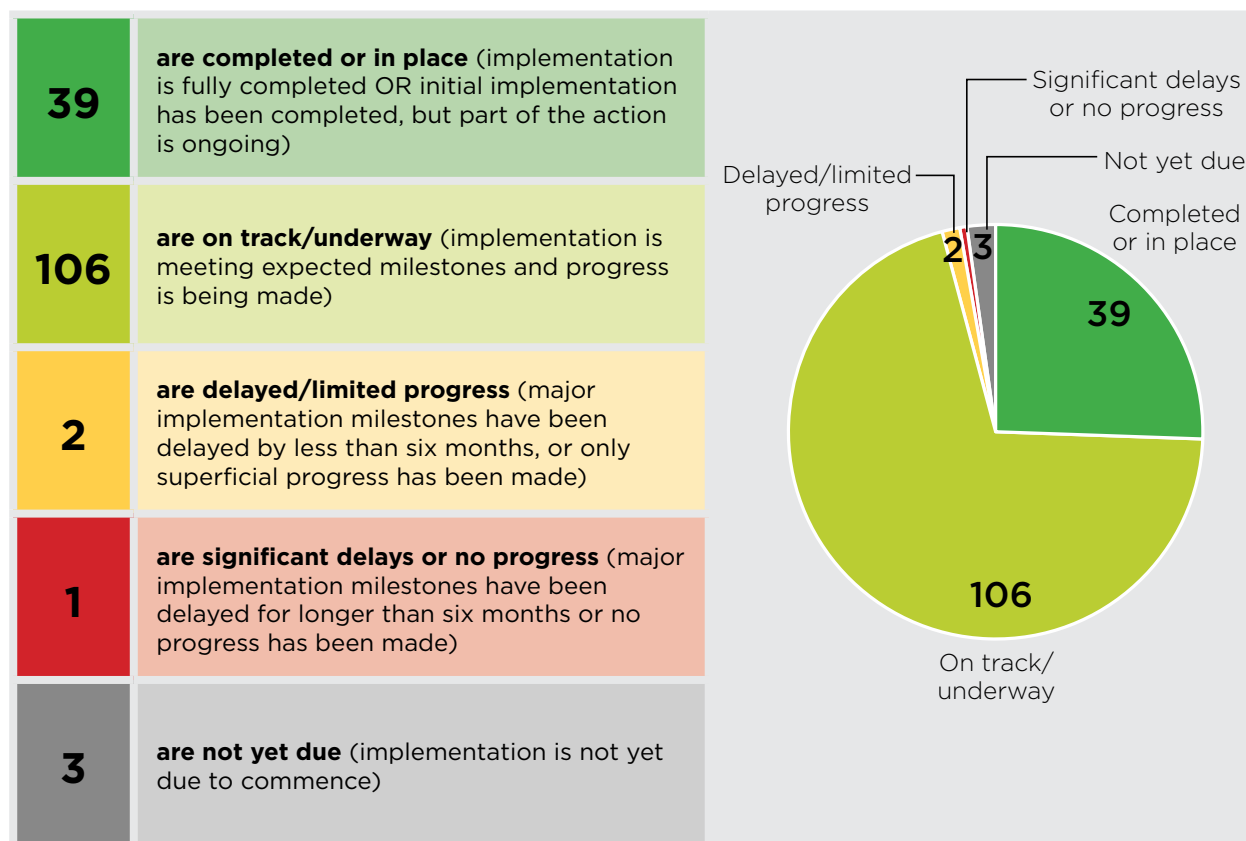
Director-General
Department of Environment and Science

2017 OVERVIEW OF PROGRESS

The Reef 2050 Plan includes 139 actions across seven different themes—ecosystem health, biodiversity, heritage, water quality, community benefits, economic benefits and governance. To assist with coordination and reporting some actions have been separated into component parts, taking the total number of actions to 151.

Substantial progress has been made in implementing actions with 39 completed or in place and 106 on track or underway.

This overview of progress on implementing Reef 2050 Plan actions reflects progress up until mid-2017.



Progress is being made across all Reef 2050 themes, whether this be completing new actions or continuing to roll out foundational activities.

Three actions are delayed. The status of those actions is:

EBA7—Consider development of a new vessel class which ensures bulk goods carriers travelling in the World Heritage Area meet stringent safety standards

Initial research into the development of a new vessel class indicates that bulk carriers do not present a higher risk than any other vessel class, and that operational parameters are the best way to introduce higher safety standards. Maritime Safety Queensland and the Australian Marine Safety Authority are working to identify appropriate potential vetting parameters.

EBA8—Fully vet 100 per cent of bulk carriers traversing the Great Barrier Reef to an appropriate standard by an independent industry endorsed ship-vetting provider

Defining an 'appropriate standard' is contingent on the action above (EBA7). This action will be progressed when EBA7 is resolved.

EHA20—Strengthen the Queensland Government's vegetation management legislation to protect remnant and high value regrowth native vegetation, including in riparian zones

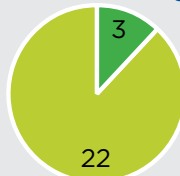
The incoming Queensland government has committed to progressing the amendments through Parliament in the new term.

Detailed progress updates against individual Reef 2050 Plan actions are available on the Department of the Environment and Energy's Monitoring Evaluation Reporting and Improvement Tool (MERIT) website:

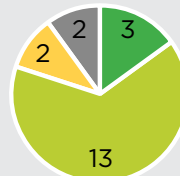
<https://fieldcapture.ala.org.au/explore/dashboard/reef2050>.

Action status by theme

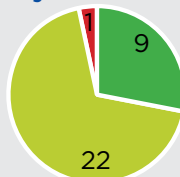
Biodiversity



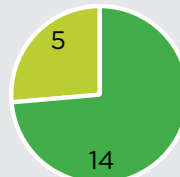
Economic benefits



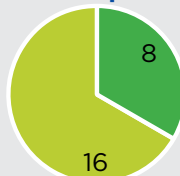
Ecosystem health



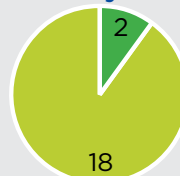
Governance



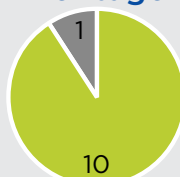
Water quality



Community benefits



Heritage



TIMELINE OF KEY ACHIEVEMENTS

Investment Framework released

The Framework establishes existing investment in Reef 2050 Plan actions, identifies six priority areas for investment and explores strategies to boost funding.

December 2016

Second crown-of-thorns starfish control vessel starts in-water work

The second vessel increases efforts to tackle the starfish outbreak and allows targeting of 57 priority reefs between Port Douglas and Townsville.

January 2017

CASE STUDY

Crown-of-thorns starfish control

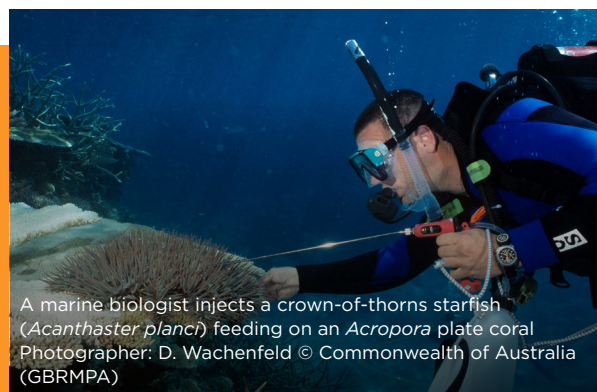
The crown-of-thorns starfish control program is one of the key actions to protect coral cover and enhance the capacity of the Reef to recover from impacts such as coral bleaching and tropical cyclones.

The Great Barrier Reef Marine Park Authority (the Authority) successfully conducted an AusTender process for \$5.61 million in late 2016 to secure a second vessel for the culling program until June 2019. The second vessel started in-water work in January 2017, allowing two vessels to tackle the starfish outbreak by targeting 57 priority reefs between Port Douglas and Townsville.

In August 2017, an additional \$14.4 million was provided to the Authority under the Reef 2050 Plan to support three crown-of-thorns starfish control vessels until 2020, greatly increasing the Authority's capacity to protect the Reef.

As at 3 October 2017, the control program has culled more than 577,000 starfish since 1 July 2012, with more than 120,000 culled between 1 July 2017 to 3 October 2017. Eye on the Reef monitoring on 21 priority reefs offshore Cairns and Port Douglas has shown the outbreak has been successfully reduced to ecologically sustainable levels, with live coral cover maintained at 20 per cent despite the impacts of coral bleaching. The Joint Field Management Program has identified areas to target, conducting over 4,497 Reef Health and Impact Surveys and 19,584 manta tows (towing an observer who makes visual assessments) along 3,552 kilometres.

The Authority continues to provide strategic oversight of crown-of-thorns starfish management. After rigorous environmental impact testing, the Authority approved household vinegar as an injection solution for use in crown-of-thorns starfish control in the Marine Park. This provides small tourism operators with a cheap and readily accessible new injection method for protecting coral at their dive sites.



A marine biologist injects a crown-of-thorns starfish (*Acanthaster planci*) feeding on an *Acropora* plate coral. Photographer: D. Wachenfeld © Commonwealth of Australia (GBRMPA)

Queensland Government Great Barrier Reef Innovation Fund expressions of interest sought

Funding of \$3.2 million was available for Treatment Systems Trials to reduce nutrient and pesticide run-off and Innovative Agricultural Management Practices trials to reduce nutrient and sediment run-off in Great Barrier Reef catchments.



February 2017



March 2017



April 2017

\$18 million awarded for gully and streambank erosion under the Reef Trust

This funding is going towards six projects delivered in partnership with landholders in the Burdekin, Fitzroy, Burnett Mary and Cape York regions.

Reef Trust Phase V Investment Strategy released

Phase V represents \$9.5 million of Australian Government investment and has a strong focus on co-investment with the private and community sectors.

Queensland Government reef regulations discussion paper released for feedback

The 'Enhancing regulations to ensure clean water for a healthy Great Barrier Reef and a prosperous Queensland' discussion paper outlined proposals to enhance the existing reef protection regulations to reduce nutrient and sediment pollution across key industries in Great Barrier Reef catchments.

Queensland Government's Small Business Innovation Research challenge successful proponents announced

The challenge involves developing cheaper water quality monitoring devices.

Whitsunday tourism operators granted special authorisation to assist reef recovery following Tropical Cyclone Debbie

This allowed tourism operators to get involved in recovery efforts by turning over coral colonies that had been damaged by Tropical Cyclone Debbie.

Two-day Great Barrier Reef Summit held

The Summit brought together 70 leading marine experts from around the world and sought to evaluate existing tools and scope new approaches to managing the Great Barrier Reef Marine Park in the era of climate change.

May 2017



CASE STUDY

Managing for Resilience Summit and the Blueprint for Change

Developing a blueprint to respond to coral bleaching and other recent impacts on the Great Barrier Reef was the focus of a two-day summit hosted by the Great Barrier Reef Marine Park Authority in May 2017.

The first of its kind for the Great Barrier Reef, the Managing for Resilience Summit was a response to unprecedented back-to-back coral bleaching events on the Reef and the urgent need for action to slow coral decline.

It involved more than 70 leading marine experts from around the world and sought to evaluate existing tools and scope new approaches to managing the Great Barrier Reef Marine Park in the era of climate change. An important aspect was developing resilience initiatives, with a focus on coral reef habitats, acknowledging they are a foundational component of the broader Reef ecosystem.

Summit participants voiced their strong concern about the need for global action to reduce greenhouse gas emissions, the driver of climate change.

They strongly supported existing measures to safeguard the Reef: a robust Marine Park management framework, widely recognised as world standard, and concerted action through the Reef 2050 Plan. Both are central to building Reef resilience and supporting ecosystem recovery following extreme events such as coral bleaching and cyclones.

The event reaffirmed a shared commitment by all participants to protecting the Reef and building resilience. A strong message from the summit was ‘together we can secure the future of the Reef—we have to try harder, do more and act now’.

It highlighted that the response to the mass bleaching event and cumulative impacts must not only build on the strong foundation of past and current programs of action, but bring new tools and innovative approaches that can transform the outlook for the Reef.

The outcomes of the summit were incorporated into the Great Barrier Reef Blueprint for Resilience that was released by the Great Barrier Reef Marine Park Authority in December 2017.

Queensland Sustainable Fisheries Strategy released

The Sustainable Fisheries Strategy is the biggest fisheries reform in Queensland's history and paves the way for Queensland to have a world-class fisheries management system.

Cumulative Impact and Net Benefit Policies released for public comment

These policies set out a comprehensive and systematic approach for how stakeholders can work together to reduce threats and improve the resilience of the Great Barrier Reef.



June 2017

CASE STUDY

Queensland Sustainable Fisheries Strategy

The Queensland Sustainable Fisheries Strategy was released in June 2017 and sets out the government's reform agenda for the next 10 years. It will pave the way for Queensland to have a world-class fisheries management system. It is the biggest fisheries reform in Queensland's history and will ensure healthy fish stocks that will support thousands of Queensland jobs.

The strategy is the outcome of a significant consultation exercise in 2016. A total of 11,800 submissions were received and the overwhelming message was that all stakeholders wanted reform in the way fisheries are managed.

The strategy outlines 33 actions to be delivered across 10 reform areas with specific targets to achieve by 2020 and 2027. Actions include harvest strategies for each fishery, satellite tracking on all commercial fishing boats, regional specific fishing rules and using new technologies more effectively.

To support the reforms, the Queensland Government is investing an additional \$20 million over three years. Key investments in the Reef region include 14 new Queensland Boating and Fisheries Patrol officers (one each in Cairns, Mackay and Yeppoon, two each in Port Douglas and Airlie Beach, three in Townsville and four in Gladstone). The Gladstone Queensland Boating and Fisheries Patrol office was reopened in October 2017. The new funding also provides for additional monitoring in the Great Barrier Reef on coral reef fish species, shark and scallops, as well as a new economic and social monitoring program for fisheries, which will contribute to the Reef Integrated Monitoring and Reporting Program.

Vessel tracking is being rolled out across all commercial fisheries with a priority on net, crab and line boats by 2018. The Great Barrier Reef Marine Park Authority and Queensland Government have pooled funding, with around \$2 million available to subsidise the costs for industry. Trials are underway on smaller, more affordable vessel tracking units for inshore boats, with the subsidy scheme to start in 2018.



Sunset near Raine Island
Photographer: M. Turner © Commonwealth of Australia (GBRMPA)



July 2017

41st Session of the World Heritage Committee in Krakow, Poland

The Committee recognised Australia's significant effort in the inception of the Reef 2050 Plan and development of the Investment Framework.

Great Barrier Reef Ministerial Forum

The Australian and Queensland governments jointly announced a public innovation challenge, scaling up the integrated approach to crown-of-thorns starfish control, research and management and the early commencement of the Reef 2050 Plan mid-term review.

Cane Changer Commitment signed by the Minister for the Great Barrier Reef—joining 109 canegrowers

The Cane Changer project involves cane growers pledging to protect the Great Barrier Reef by signing up to a program that improves the long-term sustainability of farms and the environment. It is being delivered in the Wet Tropics region in partnership with CANEGROWERS and human behaviour experts Behaviour Innovation.



August 2017

Reef 2050 Water Quality Improvement Plan released for consultation

The draft Plan outlines how industry, government and the community will work together to improve the quality of water flowing to the Great Barrier Reef.

2017 Scientific Consensus Statement released

The statement, produced by a multidisciplinary group of scientists, provides a synthesis of the science of land-use impacts on Great Barrier Reef water quality and ecosystem condition.

Revised Whitsundays Plan of Management implemented

Tourism and recreational use in the Whitsunday Planning Area continually evolves as new information on the values of the area becomes available. To reflect and adapt to these changes, amendments are made to the plan.

Designs for two Major Integrated Projects to reduce water quality pollution released

The projects are being led by NQ Dry Tropics in the Burdekin and Terrain Natural Resource Management in the Wet Tropics with a consortium of partners, stakeholders, researchers, non-government organisations and government agencies in each region.

Queensland Government Regulatory Impact Statement for broadening and enhancing reef protection regulations released for public consultation

The Regulatory Impact Statement outlines and assesses the costs and benefits of the regulatory proposals. Feedback will help inform any decision to move forward with changes to the existing reef protection regulations.

Queensland Government \$4 Million Central Queensland Reef Water Quality on-ground projects expressions of interest sought

Projects are aimed at increasing the uptake and application of best practice in grazing, cane, horticulture or grains cropping to reduce nitrogen, sediment and pesticide pollution loads.

September 2017

CASE STUDY

Reef 2050 Water Quality Improvement Plan 2017–2022

The draft Reef 2050 Water Quality Improvement Plan (WQIP) 2017–2022 outlines how industry, government and the community will work together to improve the quality of water flowing to the Great Barrier Reef. A total of 35 submissions were received on the plan from a range of stakeholders.

The WQIP is an update of the Reef Water Quality Protection Plan 2013 and is nested under the Reef 2050 Long-Term Sustainability Plan. The plan has an expanded scope and addresses all land-based sources of water pollution including run-off from urban, industrial and public lands; while recognising the majority of pollution comes from agricultural activities. It includes social, cultural and economic values for the first time.

Water quality targets have been set for the catchments adjacent to the Great Barrier Reef, based on eReefs modelling and other scientific information. eReefs is a collaborative project led by the Great Barrier Reef Foundation, which uses the latest technologies to deliver Reef water quality information online in near real time.

The catchment level water quality reduction targets define the reduction in nutrients and fine sediment required by 2025 to improve Reef health. This provides a new level of specificity from the Reef 2050 targets that commit to achieving reductions of up to 80% in dissolved inorganic nitrogen and up to 50% in sediment in priority areas.

The Plan is underpinned by the 2017 Scientific Consensus Statement—Land use impacts on Great Barrier Reef water quality and ecosystem condition. The statement provides a review of the significant advances in scientific knowledge of water quality issues in the Great Barrier Reef to arrive at a consensus on current understanding. The statement was produced by a multidisciplinary group of scientists, with oversight from the Reef Independent Science Panel.





Great Barrier Reef Report Card 2016 released

The Report Card shows that better targeting of investment and hard work on the ground from landholders and the agricultural industry to improve land management practice is resulting in less pollution flowing to the Reef. However, more progress is needed to reach the water quality targets.

Queensland Government proposed trans-shipping policy released for public comment

The proposed policy will tighten trans-shipping regulation to reduce risks to the Great Barrier Reef. Under the proposal, trans-shipping in the Great Barrier Reef region would be strictly regulated as an environmentally relevant activity.

CASE STUDY

Reef 2050 Integrated Monitoring and Reporting Program

The Reef 2050 Integrated Monitoring and Reporting Program will bring together all relevant monitoring for the Great Barrier Reef and provide a comprehensive and up-to-date understanding of the Reef—the values and processes that support it and the threats that affect it. A key purpose of the program is to provide information about the status and trend of the Reef and its adjacent catchment, to inform actions and to drive adaptive management.

Understanding how information is being accessed and used is critical for the design of Program. Two projects were completed in 2017 to assist with this understanding.

A market research project provided insight into how different groups access information about the Reef, what type of information they seek and how often they seek information. Results indicate a broad spectrum of needs; some stakeholders need to be able to access raw data while others need synthesised products. There is a greater need and expectation for products to be available in a timely manner.

A project to better understand management needs was also completed and found that stakeholders responsible for managing the Reef and adjacent catchment use information for five broad categories of decision-making:

- tactical (e.g. incident response, interventions and restoration)
- operational (e.g. permitting, compliance and field management)
- strategic planning (e.g. zoning plans, policies)
- quantifying effectiveness of management actions
- public reporting (e.g. Reef report cards, Outlook Report).

Combined results from these projects will inform the design of an integrated monitoring, modelling and reporting system that provides information at the correct spatial and temporal scales to support management decisions, enable the early detection of trends and changes in the Reef's environment, inform the assessment of key threats and future risks, and drive adaptive management.



Reef Trust Calculator released

The calculator is designed to be used by the *Environment Protection and Biodiversity Conservation Act 1999* proponents and referral assessment officers. It provides a scientifically and economically robust approach to calculating the financial value of Great Barrier Reef offsets relating to water quality and some marine habitats.

CASE STUDY

Reef Trust delivering on Reef 2050 outcomes

The Reef Trust continues to facilitate greater opportunities for partnerships and private investment in on-ground action to improve water quality, restore coastal ecosystem health and enhance protection of threatened and migratory marine species.



Colourful *Acropora* corals and fish on Wheeler Reef
Photographer: A. Chinn © Commonwealth of Australia (GBRMPA)

Reef Trust has undertaken an innovative funding approach partnering with Greening Australia to deliver priority restoration and repair wetland areas along the Great Barrier Reef coast. Reef Trust granted \$7 million for two partnership projects with Greening Australia, which have been matched dollar-for-dollar through funds raised from private contributors. On-ground interventions will restore priority degraded ecosystems that provide ecosystem services to the Reef including nursery areas, floodwater buffers and sediment and nutrient sinks.

Reef Trust also invested \$37.1 million towards 19 projects delivering sediment reduction and repairing riparian and streambanks on the waterways which feed into the Great Barrier Reef. This is being delivered through partnerships with the Queensland Government, technical and science experts, regional and non-government organisations with investment in all six regions of the Reef.

For one of those projects, Cape York Natural Resource Management (NRM) received funding to reduce sediment loss from very active gullies by 50%. Cape York NRM is working closely with the owners of Crocodile Station and the Indigenous Land Corporation to deliver the works. It is also working with technical partners, Griffith University, to design and quantify the effectiveness of the works.

The project is taking a holistic approach to gully remediation including reducing grazing pressure through exclusion fencing around the gully area, and improving native vegetation health by removing invasive weeds and direct seeding of native grasses and shrubs. It has also undertaken gully stabilisation work.



NEXT STEPS FOR IMPLEMENTATION

The cumulative impact of multiple disturbances that affected most of the Reef over the past year or more has redefined our operating environment. It has highlighted the urgent need to look at what measures—in addition to the suite of actions already underway—can be undertaken to further build the Reef’s resilience.

Mid-term review

The Reef 2050 Plan was built with a provision for a mid-term review—an acknowledgement of the scale and ground-breaking nature of the Plan. In July 2017, the Ministerial Forum agreed to the early and immediate commencement of the mid-term review to ensure that the Reef 2050 Plan continues to effectively address the challenges faced by the Reef.

The mid-term review is critical in light of recent events to identify and accelerate priority actions for managing the Reef. It will be the first stage of a comprehensive review of the Plan, which is to be undertaken in 2020—following the release of the Outlook 2019 and the World Heritage Committee’s consideration of the state of conservation of the property. The comprehensive review will assess progress against the five-year targets.

The mid-term review will focus on addressing the priorities for immediate attention, including identified gaps, while balancing the need to maintain effort on implementing the Plan.

The review is expected to be completed in 2018, and will identify a suite of actions to further direct and focus activities under the Reef 2050 Plan.

Traditional Owners and the Reef 2050 Plan

The importance of building and maintaining strong partnerships with Traditional Owners is crucial for the success of the Reef 2050 Plan and delivering on Traditional Owner actions.

The Department of the Environment and Energy will support coordination activities to make further progress to deliver on the Reef 2050 Plan as it relates to Traditional Owners. This will build on the foundational work of the Reef 2050 Plan Indigenous Implementation Plan and work under the National Environmental Science Program, Traditional Owners and Sea Country in the Southern Great Barrier Reef—Which Way Forward?

This work will be taken forward with a focus on three key areas:

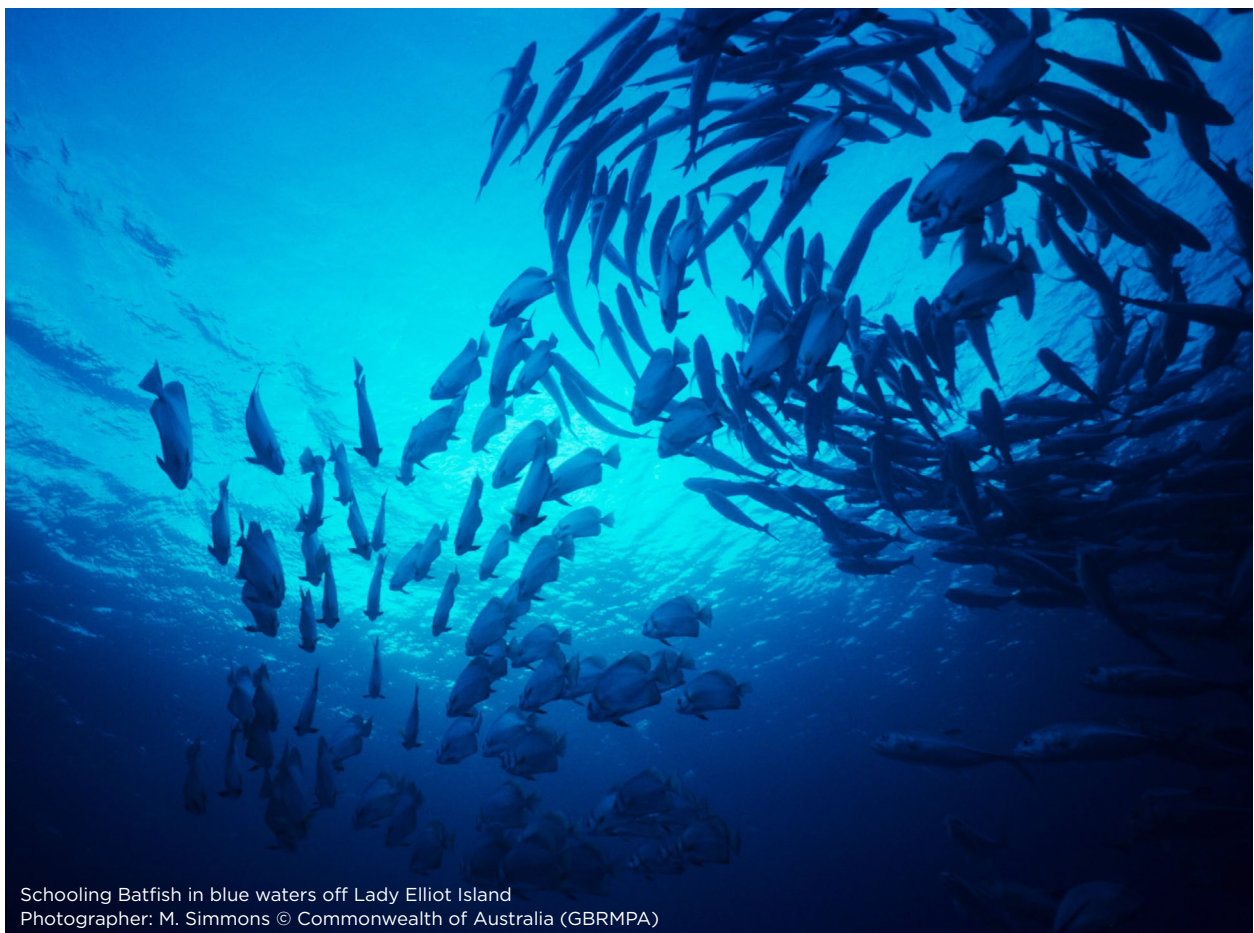
- Coordinating and facilitating culturally appropriate engagement with Traditional Owners and Reef 2050 delivery partners.
- Developing an approach to support Traditional Owner engagement in monitoring, evaluation and reporting activities as part of the Reef 2050 Plan reporting process.
- Advising on the Plan’s adaptive management, guided by engagement with Traditional Owners, including options for sustainable delivery arrangements.

Implementing the Great Barrier Reef Blueprint for Resilience

The Great Barrier Reef Blueprint for Resilience signals a change in the future management of the Great Barrier Reef. Building upon the Great Barrier Reef Marine Park Authority's strong foundation of world-class management, the Blueprint outlines key initiatives that the Great Barrier Reef Marine Park Authority will pursue with its partners to improve the outlook for the Reef.

Together with their partners, the Great Barrier Reef Marine Park Authority will focus on:

- **Building a resilience network.** Establishing a Reef-wide 'resilience network' consisting of coral reef areas that best support the Reef's ecological, social, economic, cultural and heritage values. This will build resilience at local, regional and Reef-wide scales.
- **Strengthening on-ground actions to enhance resilience.** Enhancing the use of existing tools and trialling new approaches and technologies to build resilience. Initiatives to be pursued include expanding and intensifying crown-of-thorns starfish control, strengthening compliance, enhancing protection of key species, and testing and deploying methods for reef restoration.
- **Empowering others to be part of the solution.** Accelerating actions to address climate change and its impacts, fostering partnerships for action and innovation, and seeking champions across sectors to help deliver changes critical to securing the future of the Reef.
- **Fostering change.** Delivering up-to-date information and providing clear policy guidance through decision-support systems, providing timely information and adapting policies to support delivery of resilience-based actions, building awareness and support through effective communication.



Schooling Batfish in blue waters off Lady Elliot Island
Photographer: M. Simmons © Commonwealth of Australia (GBRMPA)

Water quality

It is now more important than ever to reduce all pressures on the Great Barrier Reef to assist with building the Reef's resilience. The draft Reef 2050 Water Quality Improvement Plan (WQIP) 2017–2022 will be nested under the Reef 2050 Plan's Water Quality theme and sets out priorities for managing land-based impacts on water quality. The Reef 2050 WQIP actions are structured into two parts: 'Responding to the Challenge' which sets out on-ground actions that will directly contribute towards progress to targets and 'Enabling Delivery' which includes important enabling actions including science and knowledge, investment, governance and evaluation. The Reef 2050 WQIP is expected to be finalised in 2018.

Reef 2050 WQIP actions will be delivered through the Reef Trust program and the Queensland Reef Water Quality Program, as well as investment by partners such as local governments, industry and non-government organisations.

The Reef Trust is continuing to develop and deliver investments in a phased approach. The Phase V investment strategy was announced in March 2017 and a Phase VI investment strategy will be released in early 2018.

The Queensland Reef Water Quality Program sets out the Queensland Government's Reef water quality initiatives. The program dedicates \$35 million per year to water quality improvement, with an additional \$100 million over five years to 2020. The program focusses on increasing progress towards the water quality targets by implementing minimum practice standards for land management across all industries and land uses including by strengthening regulation and continuing to support industry-led Best Management Programs (BMP). It also creates lasting change and continuous water quality improvement by supporting industries and communities to build a culture of innovation and stewardship; and investing in catchment restoration to address legacy issues of land development and past practices.

Future reporting of Reef 2050 Plan actions

The lead agencies responsible for Reef 2050 Plan actions will update on progress every six months. This information is currently available on the Department of the Environment and Energy's Monitoring Evaluation Reporting and Improvement Tool (MERIT) website: <https://fieldcapture.ala.org.au/explore/dashboard/reef2050>.

Schools of small fish including Scalefin anthias (*Pseudanthias squamipinnis*) and Klien's butterflyfish (*Chaetodon kleinii*) amongst hard coral
Photographer: B. Cropp © Commonwealth of Australia (GBRMPA)



