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International Coral Reef Initiative (ICRI)

Member's Report | 37th General Meeting

19th - 23rd September 2023 Hawai'i, - United States of America

Reporting Period: 2021 – 2023

A. Member Information:

- Name of ICRI member: Australia
- Name of person(s) completing member's report: The Great Barrier Reef Marine Park Authority
- Email: <u>international@gbrmpa.gov.au</u>
- Are you a Focal Point: ⊠ Yes □ No
 If no, who are you completing the form on behalf of:
- Which was the last General Meeting you attended: 36th ICRI General Meeting (Virtual).
- Will you be attending the 37^{th} ICRI General Meeting: \boxtimes Yes \Box No
- Member social media: Great Barrier Reef Marine Park | Facebook
 - Twitter: <u>@gbrmarinepark</u>
 - o LinkedIn: Great Barrier Reef Marine Park Authority

Please note the following Acronyms within this report:

- The Reef Authority The Great Barrier Reef Marine Park Authority
- AIMS Australian Institute of Marine Science
- *DBCA* Department of Biodiversity, Conservation, and Attractions (Western Australia)
- *DCCEEW* Department of Climate Change, Energy, the Environment, and Water (Australian Government)
- *NGOs* Non-Government Organisations



B. Reporting on the implementation of ICRI Plan of Action 2021-2024: turning the tide for coral reefs. Your responses will help inform the Secretariat about members' contributions toward the current Plan of Action

Theme 1 - Preparing for the Future: Promoting Resilient Coral Reefs

1.A - Strengthening policies - Supporting conservation and recovery of coral reefs and associated ecosystems through resilience-based management frameworks.

• (ICRI) How have you embedded resilience-based management into your policies? (*Tip* – refer to the RBM policy brief: <u>https://icriforum.org/resilience-hub/</u>)

Answer:

Australian coral reefs are managed by distinct levels of government, often with overlapping jurisdictions. Management agencies have embedded resilience-based management (RBM) to varying extents.

The centrepiece of the Reef Authority's activities is our new Great Barrier Reef Blueprint for Climate Resilience and Adaptation. The Blueprint drives how we adapt our management under a changing climate. It will help us innovate and evolve how we protect the Reef's resilience and remain global leaders in Marine Park management. The Blueprint describes five strategic goals and identifies actions we will take. The five strategic goals relate to reducing emissions; resilience-based management; co-managing with Traditional Owners; management capability; and empowering others.

In late 2021, recommendations were provided to the Executive of the Reef Authority to improve risk-based resilience management in the Great Barrier Reef Marine Park. These recommendations are now being implemented, for example, supporting improvements to the management of local threats (e.g. fishing impacts) and the development of specific management recommendations for resilient reefs.

The Western Australian Department of Biodiversity, Conservation, and Attractions (DBCA) policies uses components of RBM in legislation. For example:

- The zoning scheme for the Ningaloo Marine Park includes Sanctuary Zones to provide '.... resilience against the failure of the adaptive management approach adopted for the rest of the Park, and enhanced resilience to natural and human induced disturbance.'
- One of the key legislative mechanisms, the Biodiversity Conservation Act 2016, guides the management and conservation of the Ningaloo Coast, includes objects relevant to RBM including:
- To promote the ecologically sustainable use of biodiversity components
- Principles of ecologically sustainable development.
- The management of marine parks in Western Australia embeds adaptive management in their management plans, including annual reporting.

1.B - Promote capacity building for applying resilience-based management approaches to coral conservation Ad Hoc Committee on Resilience-based Management.



• (ICRI) Please list any examples of leading practices, techniques and strategies for building reef resilience that your organisation/country is involved in. Include their location and extent, methods of implementation, financing, and an assessment of their results (or likely results), with links for more information if possible.

Answer:

ICRI ad hoc Committee on Resilience-based Management

The previous ICRI Secretariat Plan of Action 2018-2020 called for members to support reef resilience at the local, regional and global scale. In recognition of the need to accelerate our collective efforts, the Reef Authority convened an ICRI side event '<u>Managing for Resilience</u>' at the 34th ICRI General Meeting in Australia, in collaboration with the Nature Conservancy and the Great Barrier Reef Foundation.

Following this event, ICRI established the ad hoc Committee on RBM. The <u>Terms of Reference</u> for the ad hoc Committee initially identified four main objectives:

- *Objective 1 Targeted Communications:* Identify global, national and local RBM communication needs, priorities and key messages. Co-develop RBM communication strategies that can be scaled and tailored to meet these needs. Share best-practice examples of RBM outcomes.
- *Objective 2 Overcoming Challenges:* Identify key challenges to RBM implementation and share case studies on how these could be addressed at global, national and local scales.
- *Objective 3 Building Opportunities:* Assess the priority opportunities for RBM implementation and support member engagement and participation.
- *Objective 4: Building Capacity:* Identify opportunities for partnership between members, NGOs, industry and community organisations who can build understanding and enable members to scale up and tailor RBM.

A <u>resolution to extend the *ad hoc* Committee</u> was subsequently adopted at the 35th ICRI General Meeting (online) in February 2021. The amended terms of reference provided that the *ad hoc* Committee – working with ICRI members, reef-bearing nations and relevant partners – would:

- Identify global, national and local RBM communication needs, priorities and key messages.
- Share RBM communication strategies that can be scaled and tailored to meet these needs.
- Share best-practice examples of RBM outcomes.
- Identify key challenges to RBM implementation and share case studies on how these could be addressed at global, national and local scales.
- Identify the priority opportunities for RBM implementation and support member engagement and participation.
- Identify opportunities for partnership between members, NGOs, industry and community organisations who can build understanding and enable members to scale up and tailor RBM.

A <u>third and final resolution</u> to extend the *ad hoc* Committee was adopted at the 36th ICRI General Meeting (online) in December 2021. The amended terms of reference provided that the *ad hoc* Committee – working with ICRI members, reef-bearing nations and relevant partners – would:

- 1. Assist members to identify and implement RBM actions that support global biodiversity and sustainability targets, such as in the UN Sustainable Development Goals and the proposed CBD Global Biodiversity Framework.
- 2. Assist members to develop the necessary resources (tools, guidance, finance mechanisms, etc.) that support resilience-based management plans and policies.
- 3. Continue to share knowledge and expertise on implementing RBM with members.
- 4. Develop closer linkages with the ad hoc Committee on Reef Restoration and the ad hoc Committee on developing a recommendation for a Post 2020 coral reef target.

In May 2022 ICRI released its <u>Plan of Action 2021 – 2024: Turning the Tide for Coral Reefs (Plan of Action)</u>. The Plan of Action identifies the *ad hoc* Committee on RBM as a key contributor to Theme 1 (Preparing for the Future: Promoting Resilient Coral Reefs), subsection 1.B (Promote capacity building for applying RBM approaches to coral conservation) through the following illustrative activities:

- Maintain the ICRI Resilience Hub as a source of relevant information, key contacts, and initiatives on RBM.
- Identify RBM actions that support global biodiversity and sustainability targets, such as in the UN Sustainable Development Goals and the proposed CBD Global Biodiversity Framework.
- Hold online capacity building workshop to help members understand RBM and how to integrate it into plans and policies.
- Share knowledge and expertise to help members develop the necessary resources to support implementation of resilience-based management.
- Develop closer linkages with the *ad hoc* Committee on Reef Restoration and the Ad Hoc Committee on developing a recommendation for a Post-2020 coral reef target.

Key achievements of the ad hoc Committee on RBM included:

- March 2020: Develop the <u>Resilience Hub</u> on the ICRI website. The hub was created to share key messages about RBM and its benefits, promote effective implementation of RBM through policy and planning, facilitate networking and encourage cooperation among ICRI members.
- April 2020: Journal article in collaboration with ICRI Ad Hoc Committee on Restoration. Members of the *ad hoc* Committees on RBM and Restoration collaborated to produce a peer-reviewed journal article – <u>A roadmap to integrating resilience into the</u> <u>practice of coral reef restoration</u>. The paper offers a set of recommendations on how to incorporate resilience principles into restoration project planning and design, coral selection, site selection, and the broader ecosystem context such as how reefs interact with other nearshore habitats and the built environment.
- December 2021: <u>Policy brief for decision makers on Building Resilience into Coral Reef</u> <u>Conservation</u>. The brief supports decision makers to prioritize actions that build reef resilience and deliver on global biodiversity and sustainability commitments. It sets out proactive measures to strengthen governance, reduce pressures and protect resilience.
- December 2021: <u>Animation: What is Resilience-based Management and why do we</u> <u>need it?</u> The animation introduces the policy brief, and provides an easy-to-understand summary of RBM and why it is important.
- September 2023: RBM case studies. An ongoing project at time the of writing, the case studies focus on RBM is being implemented in different contexts. The sites chosen for case studies were nominated by members of the Ad Hoc Committee. When complete, the case studies will be published on the Resilience Hub.



• 2019–2023: Engagement to support Committee deliverables and its goals more broadly. Importantly, the *ad hoc* Committee successfully acted as a forum for ICRI members to discuss challenges to RBM implementation and share information. The Committee formally met on multiple occasions from 2019 to 2021, then moved to a more informal format that included subgroup meetings and email exchanges. A central theme of all engagements and discussions was what ICRI member countries need to know about RBM, and how best to fill knowledge and capacity gaps. For example, in agreeing to develop the Policy Brief, the Committee conducted an exercise to identify existing resources and challenges for implementation, and then identify communication strategies that could meet needs. Committee members identified lack of understanding of RBM as a key challenge in implementation and determined that the Policy Brief was the best way to address this.

Members – past and present

Member (alphabetical order)	Representing
Amy Armstrong	Great Barrier Reef Foundation, Australia
Amanda Brigdale	Department of Foreign Affairs and Trade, Australia
Sarah Castine	Great Barrier Reef Foundation, Australia
Madhavi Colton	Coral Reef Alliance, USA
Thomas Dallison	ICRI Secretariat
Emily Darling	Wildlife Conservation Society, USA
Gabriel Grimsditch	UN Environment
Andrea Grottoli	International Coral Reef Society and Ohio State University, USA
Simon Harding	International Coral Reef Society
Chloe Harvey	Reef World Foundation, UK
Jennifer Koss	National Oceanic and Atmospheric Administration, USA
Michael Lameier	National Oceanic and Atmospheric Administration, USA
Anderson Mayfield	National Oceanic and Atmospheric Administration, Atlantic Oceanic and Meteorological Laboratory, USA
Elizabeth McLeod	The Nature Conservancy
Morgan Pratchett	International Coral Reef Society

Chairs: Katherine Martin, Dylan Horne – Great Barrier Reef Marine Park Authority, Australia



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Mohd Kushairi Bin Mohd	Coral Triangle Initiative On Coral Reefs, Fisheries and Food	
Rajuddin	Security, Indonesia	
Francis Staub	ICRI Secretariat	

Case studies

Management agencies across Australia have continued to integrate resilience -based management to coral conservation. These different approaches can be seen below.

Great Barrier Reef

The Reef Authority hosted the "Pacific Coral Reef Collective" in Cairns, Australia (31 July - 5 August 2023). The forum was attended by 14 Pacific Island nations. The summary report from the forum will be available by 30 September 2023 on the Reef Authority's website. This report will highlight the shared challenges identified by the collective for coral reef management across the Pacific and the recommended priority areas for investment and capacity building.

The Crown-of-thorns Starfish (COTS) Control Program (the Program) is led by the Reef Authority in collaboration with GBR science and industry partners. Deployment of COTS surveillance and cull effort is informed by the best available science and field reconnaissance. The Program is delivering COTS outbreak suppression and coral protection outcomes across hundreds of reefs and is augmenting the biodiversity, productivity, and resilience enhancement benefits of foundational management systems such as Marine Park zoning and fisheries management. The Program is a leading example of adaptive resilience-based management achieving broadscale coral protection outcomes. Further information is available at: Crown-of-thorns starfish | Reef Authority.

The Reef Joint Field Management Program (this is a joint program between the Reef Authority and Queensland Parks and Wildlife and Partners) is responsible for planning and executing field operations in the Commonwealth and State marine parks (including Commonwealth Islands Zones) and on island national parks within the Great Barrier Reef World Heritage Area (WHA). Delivered through an Annual Business Plan, the Program operates under five priorities to deliver the nine outcomes identified in the Great Barrier Reef Intergovernmental Agreement 2015 and mitigate threats to the WHA's values. The Annual Business Plan outlines activities and priority projects the Program will undertake each year to protect the WHA's primary values from threats; build resilience for the Reef, islands, and species; and support Traditional Owner and ecotourism opportunities.

Presentations on the work of the Committee, Pacific Coral Reef Collective and the Great Barrier Reef Blueprint for Resilience will be given at the ICRI GM.

Ningaloo Reef

The Ningaloo Resilient Reefs Working Group is a consultative body made up of representatives of the community which provides strategic advice to the Resilient Reefs program on the development of the <u>Resilience Strategy</u>, as well as providing guidance in the procedural aspects of community stakeholder engagement. The membership is designed to be diverse and representative of key community stakeholder groups and governance agencies with responsibilities for management of the reef and the broader community.



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Resilient Reefs is a collaboration between the Great Barrier Reef Foundation, UNESCO World Heritage Marine Programme, The Nature Conservancy, Columbia University's Center for Resilient Cities and Landscapes, Resilient Cities Catalyst, AECOM and is enabled by the BHP Foundation. The initiative is being delivered in Ningaloo by the Department of Biodiversity, Conservation and Attractions.

Coral Sea

Parks Australia manages 60 Australian Marine Parks, which contain one of the most diverse networks of protected shallow reef ecosystems in the world (the Coral Sea). A range of techniques are used to monitor these reefs and their response to pressures like climate change, and to build their resilience. This ranges from marine debris monitoring and ghost net collection; catchment management activities to improve water quality at certain locations; and an active monitoring and surveillance program to prevent illegal fishing activities and enforce park management rules.

• (ICRI) Have you developed, or are you aware of, training materials that you can share?

Answer:

As a partner in the Resilient Reefs Initiative, the Ningaloo Coast was involved in the development of resources for building resilience. These include resources we believe are available on the Nature Conservancy's Reef Resilience Network, including a virtual <u>RBM Mentored Course</u> and from Columbia University's Center for Resilient Cities and Landscapes – <u>Trialling Coral Restoration to Build Resilience</u>.

The Reef Authority have created training materials around COTS control, these are in the form of <u>Crown-of-thorns Starfish Control Program - Strategic Management Framework</u> and the <u>Crown-of-thorns Starfish Control Guidelines</u>.

The Australian Government released their <u>Climate Change toolkit for World Heritage properties in</u> <u>Australia</u>. It is a handbook for property managers and guide to the full process of vulnerability assessment and adaptation planning.

1.C - Promote and build capacity for the restoration of resilient coral reefs Ad Hoc Committee on Reef Restoration

• (ICRI) Please list any examples of reef restoration mechanisms that your organisation/country is involved in. Include their limits, conditions of implementation, financing and an assessment of their results, with links for more information if possible.

Answer:

ICRI ad hoc Committee on Reef Restoration and Adaptation

The ICRI Secretariat Plan of Action 2018-2020 called for members to promote leading practice reef restoration mechanisms by facilitating partnerships, investment and capacity building among ICRI members.

Following this event, ICRI established the *ad hoc* Committee on Reef Restoration. The Terms of Reference for the Ad Hoc Committee initially identified five main objectives:



- Assess and document global needs and priorities for current and future reef restoration and adaptation programs.
- Assess and document global research and development priorities to deliver the methods, productivity and cost breakthroughs needed to support restoration and adaptation program objectives.
- Identify mechanisms to improve joint planning and delivery of reef restoration and adaptation research and development.
- Identify opportunities to partner on reef restoration and adaptation research and development activities.
- Identify opportunities to fund a small team to co-ordinate the activities of the Working Group and collate and report outcomes and other outputs.

A resolution to extend the *ad hoc* Committee and include adaptation and Research and Development in the name was subsequently adopted at the 34th ICRI General Meeting in December 2019. The amended terms of reference provided that the Committee – working with ICRI members, reef-bearing nations and relevant partners – would:

- Continue to assess and document global needs and priorities for current and future reef restoration and adaptation programs.
- Continue to assess and document global research and development priorities.
- Provide a coordinating mechanism for international collaboration on coral reef restoration research and development.
- Advocate for the use of best practice restoration techniques and highlight examples of relevant policy and legislation as part of a broader strategy that involves traditional management and reducing carbon emissions to maintain coral reef function, structure and resilience.
- Facilitate the transfer of new knowledge of restoration techniques to managers and restoration practitioners.
- Update the global database on coral restoration methods and integrate it with the ICRI website if resources are available.

Two further resolutions to extend the *ad hoc* Committee were adopted at the 35th and 36th ICRI General Meetings (both online) in 2021. The Terms of Reference called for a continuation of previous objectives.

In May 2022 ICRI released its <u>Plan of Action 2021 – 2024: Turning the Tide for Coral Reefs</u>. The Plan of Action identifies the *ad hoc* Committee on Reef Restoration and Adaptation as a key contributor to Theme 1 (Preparing for the Future: Promoting Resilient Coral Reefs), subsection 1.C (Promote and build capacity for the restoration of resilient coral reefs) through the following illustrative activities:

- Maintain the ICRI Restoration Hub as a source of relevant information, key contacts, and initiatives.
- Update materials based on experiences thus far and conduct mentored trainings using the Manager's Guide to Coral Reef Restoration Planning and Design and the report Coral Reef Restoration as a strategy to improve ecosystem services.
- Train facilitators to conduct mentored trainings using the Manager's Guide to Coral Reef Restoration Planning and Design.



• Develop closer linkages with the *ad hoc* Committee on Resilience-Based Management and the *ad hoc* Committee on developing a recommendation for a Post-2020 coral reef target.

Key achievements of the ad hoc Committee on Reef Restoration and Adaption included:

- Produced a report '<u>Mapping current and future priorities for coral restoration and</u> <u>adaptation programs</u>' (McLeod et al 2019).
- Produced a report with UNEP '<u>Coral reef restoration as a strategy to improve</u> <u>ecosystem services: A guide to coral restoration methods</u>' (Hein et al 2020) as the first official report for the UN Decade of Ecosystem Restoration.
- Hosted and updated the Coral Restoration Database (Boström-Einarsson 2020).
- Produced a journal article in collaboration with ICRI Ad Hoc Committee on Restoration. Members of the Ad Hoc Committees on Resilience and Reef Restoration collaborated to produce a peer-reviewed journal article – <u>A roadmap to integrating</u> <u>resilience into the practice of coral reef restoration</u>. The paper offers a set of recommendations on how to incorporate resilience principles into restoration project planning and design, coral selection, site selection, and the broader ecosystem context such as how reefs interact with other nearshore habitats and the built environment.

Me	eml	bers	– past	and	present
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 Member (alphabetical order)
 Representing

 Anastazia Banaszak
 International Coral Reef Society, Mexico

Member (alphabetical order)	Representing	
Anastazia Banaszak	International Coral Reef Society, Mexico	
Amanda Brigdale	Department of Foreign Affairs and Trade, Australia	
Brian Beck	National Oceanic and Atmospheric Administration, USA	
Cedric Robillot	Great Barrier Reef Foundation	
Thomas Dallison	ICRI Secretariat	
Chloe Harvey	Reef World Foundation, UK	
Gabriel Grimsditch	UN Environment	
David Mead	Australian Institute of Marine Science	
Didier Zoccola	Monaco	
Elizabeth Shaver	The Nature Conservancy, USA	
Jennifer Koss	National Oceanic and Atmospheric Administration, USA	
Firdaus Agung	Indonesia	
Florina Jacob	Coral Guardian, France	
Heidi Prislan	Commonwealth Blue Charter	
Jennifer Loder	Great Barrier Reef Foundation	
Mohd Kushairi Bin Mohd	Coral Triangle Initiative on Coral Reefs, Fisheries and Food	
Rajuddin	Security, Indonesia	
Francis Staub	ICRI Secretariat	
Linda Johnson	UNEP, Kenya	
Maxine Newlands	James Cook University, Australia	
Peter Davies	Secretariate of the Pacific Regional Environment Programme	
Rory Jordan	G20 Coral Research & Development Accelerator Platform,	
	Saudi Arabia	
Rowana Walton	UN Environment Programme World Conservation Monitoring	
	Centre	
Scott Winters	National Oceanic and Atmospheric Administration, USA	
Sylvian Pioch	France	



Tali Vardi	Coral Restoration Consortium
Tom Moore	King Abdullah University of Science and Technology, Saudi Arabia
Vivian Ramnarace	Belize

Case studies

Great Barrier Reef Marine Park

The Reef Authority is supporting reef restoration projects being undertaken by the <u>Reef Restoration</u> and <u>Adaptation Program</u>, individual projects being undertaken by the Reef Authority itself (e.g. <u>Raine Island restoration</u>, <u>Douglas Shoal Environmental Remediation Project</u>) as well as by individual external parties. The Reef Authority's <u>Intervention Policy</u> sets guidelines for this work.

The Reef Joint Field Management Program is trialling site-specific reef rehabilitation methods that can be applied following small-scale events such as vessel-groundings and localised damage from tropical cyclones. We partner with Traditional Owners, tourism operators and researchers to determine whether the techniques are fit-for-purpose and then develop specific training and supporting documentation to operationalise the techniques.

Presentations on the work of the Committee and the RRAP will be given at the ICRI GM.

Norfolk Marine Park

Norfolk Marine Park is one of 60 Australian Marine Parks managed by Parks Australia. It is located off eastern Australia in the Pacific Ocean, about 1400 kilometres offshore.

Poor water quality in the Norfolk Marine Park lagoon (Emily and Slaughter Bays) has been a longstanding issue. Corals reefs in Emily Bay and Slaughter Bay are significant, as they are the easternmost coral reefs in Australian waters.

Parks Australia has prohibited the take of all animals in the lagoon, and all echinoderms in an adjoining bay, to mitigate the impact of algal overgrowth from elevated nutrients in the water. Parks Australia is working co-operatively to minimise pollution inputs to surface and groundwater, through improved catchment management. Reef health monitoring is ongoing to determine the impact of the no-take rule and the health of the reef ecosystem.

Reef Restoration and Adaptation Program

The <u>Reef Restoration and Adaptation Program</u> (RRAP) for the Great Barrier Reef seeks to develop a suite of solutions to protect and restore the health of the Reef:

A series of complementary subprograms deliver the R&D program outcomes: cross-cutting and engineering subprograms support a suite of intervention-focused R&D teams.



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RRAP R&D Program structure. The intervention-focused subprograms are supported by cross-cutting science and engineering subprograms.

The RRAP V1 R&D program is in its fourth year and has uncovered scientific insights to underpin the development of innovative solutions to protect, restore and adapt the Great Barrier Reef to ocean warming.

Updates on the RRAP are available at: <u>News - Reef Restoration and Adaptation Program</u>. Progress and learnings from the RRAP have also been shared via ICRI's <u>Ad Hoc Committee on Reef</u> <u>Restoration</u> since the Committee's establishment in December 2018. A number of fact sheets are also available on outcomes to date and next steps:

- Enhanced corals and treatments
- <u>Moving corals</u>
- <u>Rubble stabilisation</u>
- Cooling and shading
- Coral aquaculture and deployment
- <u>Cryopreservation</u>

Theme 2 – Coral Reef Science and Oceanography: Advancing and Utilizing the Latest Science and Technology

2.A – Coral monitoring capacity building

 (ICRI) Do you have information / case studies that could contribute to the update of the "Methods for ecological monitoring of coral reefs" (<u>https://portals.iucn.org/library/efiles/documents/2004-023.pdf</u>), especially related to the use of new technologies.

Answer:

The Reef Authority is delivering the Tourism Reef Protection Initiative. Utilising Eye on the Reef survey methodology combined with photo-point survey techniques.



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Geotagged imagery is increasingly being utilised to assess and monitor coral reef status and trend. User friendly digital tools such as the Australian Institute of Marine Science <u>ReefCloud</u> platform uses machine learning and advanced analysis to rapidly extract and share coral reef data from images. These tools deliver a game-changing advancement in the speed, efficiency, and accuracy of analyses of coral reef image data.

ReefCloud is an online platform designed by AIMS, in collaboration with partners in Palau and Fiji, to reduce barriers in coral reef monitoring, foster collaboration and data integration and support the access to information relevant to inform management actions. It offers an easy-to-use online portal designed for benthic monitoring surveys using in-water photographs.

The platform uses artificial intelligence (AI) tools for fast and accurate data extraction from images. ReefCloud also provides secure data management with user-defined access rights.

An in-built dashboard allows the integration and visualisation of accessible datasets across organisations; this enables rapid reporting on the status and trends of coral reefs across geographies. As the ReefCloud pilot was developed, interest has grown within Australia and internationally.

Consistent with AIMS' commitment to First Nations partnerships, there has also been a dedicated approach to the integration of Traditional Ecological Knowledge (TEK) within ReefCloud. A recent example is a <u>collaboration with the Samoan Government</u>. Representatives from Samoa's Ministry of Natural Resources and Environment and Ministry of Agriculture and Fisheries, Secretariat of the Pacific Regional Environment Programme (SPREP) and Conservation International (CI) learnt how to use AIMS' ReefCloud platform to enhance their existing coral monitoring programs.

Following the week-long training, AIMS and CI facilitated the first of three knowledge exchange workshops where traditional practices and knowledge were shared by Samoan community members, the Sea Women of Melanesia (from Papua New Guinea) and Traditional Owners from the Gidarjil Development Corporation (Australia).

The week-long workshop, in the Aleipata district of Samoa, explored how Traditional Knowledge from the three cultures could be incorporated into a coral reef monitoring framework that could be used across the Pacific. The participants shared their expertise and experiences in traditional management practices, monitoring techniques, and reporting needs to inform the framework's design. Representatives from the Samoan Government and SPREP were also involved in the workshop.

The Reef Joint Field Management Program works closely with Traditional Owners and Indigenous Land and Sea Ranger group to build their capacity to undertake in-water monitoring of coral reefs in the GBR. This also includes a dedicated program to train Land and Sea Rangers to scuba dive, to gain advanced diving qualifications and vessel driving qualifications to improve their capacity and capability.

DBCA uses remote operated vehicles to monitor benthic communities in habitats that are unsuitable for diver operated systems. For example: where crocodiles inhabit in the Kimberley region.



• (ICRI) Are you aware, developing, or involved with, any capacity building activities related to the use of coral reef monitoring mechanisms, especially regarding the advancement of monitoring practices (noting technology)?

Answer:

Australian Government funding has been secured to enable AIMS to share ReefCloud further with Pacific nations, through to 2026. AIMS will also continue to build capacity in the use of ReefCloud within Australia.

AIMS, supported by the Queensland Government, has also established <u>ReefWorks</u> a tropical marine technology test range that offers a national capability to safely test marine technologies, uncrewed and autonomous aerial, surface, and underwater systems, as well as other innovations or sensors in a real-world environment. While 42 per cent of the world's oceans are tropical, ReefWorks is one of the first marine technology test ranges in the world located in tropical waters - a challenging operating environment for marine technologies.

ReefWorks fulfils the demand to support the test and evaluation needs for the development and certification of marine autonomous systems designed to operate in the tropics. ReefWorks also expands Australia's capability to tackle the challenges facing our marine ecosystems such as coral bleaching events and other impacts of climate change by expanding our ability to monitor and respond.

Based at AIMS headquarters, near Townsville, ReefWorks facilities include:

- three sea test ranges with differing conditions and autonomous corridors
- test tanks
- workshops
- wharf facilities

The secure test and evaluation facility is open to industry, government, and academic innovators. A <u>ReefWorks brochure</u> contains more information.

The Reef Authority's Reef Joint Field Management Program and the COTS Control Program are collaborating with the Australian Institute of Marine Science on the <u>ReefScan</u> Project. ReefScan is developing a suite of semi and fully automated marine monitoring systems to collect and translate field data into information on the status and condition of coral reefs.

Information and learnings are shared amongst agencies (e.g. AIMS, CSIRO, Department of Primary Industries and regional Development) where appropriate.

2.B – The Global Coral Reef Monitoring Network (GCRMN)

The GCRMN would like to receive feedback on the <u>Status of Coral Reefs of the World: 2020</u> <u>report</u> to improve the production of future regional and global reports. As such, please kindly respond accordingly to the questions below:

- (ICRI) In reference to the Status of Coral Reefs of the World: 2020 report:
 - Have you read the report?



- Did you utilise the report and/or use the results and contents?
- How could the next report be improved (considering the entire process from data acquisition to reporting)?

Answer:

This report has been read by the different agencies that manage coral reefs around Australia.

Within The Reef Authority the report forms part of broad background reading and global context understanding including in the preparation of the 2024 Great Barrier Reef Outlook Report.

DBCA have contributed data but did not utilise the report due to the inconsistencies in the data presented (especially in the maps) making it unclear what is being included or not in the graphs and tables, as explained below. DCBA have advised of the following improvements:

- A template and instructions of the data format required.
- The inclusion of coral taxonomic analysis in addition to total coral cover.
- More time to contribute to, and review, the report.
- Greater quality control, especially for the maps, which show the locations and length of the timeseries data. For example, there appears to be data missing from many of the maps for Western Australia (e.g. Shark Bay and the Montebello/Barrow Islands coral data are missing from Figure 8.2), and some of the points on the maps appear to be misrepresented in terms of the lengths of the timeseries (e.g. Ningaloo has 10+ years of coral monitoring data but is displayed as 2-5 years on Figure 8.2).

For the Reef Authority the report forms part of broad background reading and global context understanding including in the preparation of the 2024 Great Barrier Reef Outlook Report.

- (ICRI) The GCRMN intends to establish time-bound task forces to address specific priority issues and to build capability and capacity across the network. As a priority, a Data Task Force was established. The Task Force brings together subject matter experts to increase the transparency, reproducibility, and robustness of future GCRMN reports alongside capacity in monitoring, data collection, analysis, management and sharing of coral reefs and associated ecosystems. The Task Force will focus on:
 - Improving data integration and analyses to facilitate the production of GCRMN regional and global reports; and
 - Promoting good data management practices based on FAIR data principles for the coral reef scientific community.

Tell us is if you will be interested in joining the Data Task Force, or upcoming task forces. More so, please inform us if you have data to contribute to upcoming regional, or global, reports and if you will be organising and/or partaking in any capacity building activities regarding data monitoring:

Answer:

1. Taskforces: No



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- 2. Data to contribute (GCRMN Region Country, Data description): DBCA long-term benthic monitoring data from Western Australia
- 3. Upcoming capacity building activities:

Theme 3 - Local Threat Reduction: Integrating Response Planning Frameworks

Please tick the most appropriate box/boxes:

- (ICRI) Do you have (or in the process of developing) a coral reef response plan(s) on, for example, but not limited to:
 - \boxtimes coral disease
 - \boxtimes vessel groundings
 - \boxtimes bleaching
 - \boxtimes invasive species outbreaks (lionfish and COTS)
 - \boxtimes large storm events
 - \Box other:

If yes, please provide us with more information.

Answer:

There is an increasing risk of a major coral bleaching event during the Southern-hemisphere summer. There is already significant bleaching occurring on many reefs in the Northern Hemisphere, and the overall global sea surface temperature is well above the previous record highest values.

AIMS is currently planning its activities should a significant coral bleaching event occur. There are strong expectations that programs such as RRAP will play a role. Currently, there are no operational interventions that could prevent coral bleaching or assist the system to recover in a meaningful way. However, opportunities should be considered to adjust existing adaptation and restoration research activities to exploit a coral bleaching event to progress addressing critical knowledge gaps (acknowledging time and resource constraints for significant extra effort).

DBCA's coral bleaching response plan includes surveys such as aerial flights, in-water rapid bleaching surveys and/or photo-transects. Reports and estimates of coral bleaching are communicated to the Western Australian Coral Bleaching Taskforce and are collated in relevant coral bleaching databases.

Reef Authority has an established set of Reef health incident planning and response tools spanning all these sources of impact (This also includes the COTS control program).

Monitoring and assessing the extent, severity and impact of a coral bleaching event will also be essential but needs to be carefully designed and coordinated between Australian agencies to be cost effective, scientifically rigorous and relevant to decision makers.



Theme 4 - Diversity and Inclusion: Expanding the Coral Reef Community

4.A – Connect with youth audiences:

• (ICRI) Are you developing (or planning to develop) any communication campaigns or outreach materials? What will your primary target audiences be and what would your key messages include?

Answer:

The Reef Authority has a long-established Reef Guardian Schools program that builds understanding among young people in Queensland and an increasing number of schools across Australia. The Authority also has well developed programs that ensure effective Great Barrier Reef world heritage interpretation by tourism operators through the Master Reef Guides initiative, and extensive international video conferencing interactions with school children via our Reef Aquarium education facility.

The See.Love.Protect the Reef campaign is a primarily a social engagement activity that aims to influence responsible and positive behaviours towards the Great Barrier Reef for its long-term protection and resilience; and increase awareness of the Reef Authority's actions to protect the Great Barrier Reef. The campaign focuses on stakeholder engagement (Reef Guardian Schools/Councils, high standard tourism operators, TUMRAs, internal staff) through a digital toolkit available on our website which provides information about the campaign, downloadable digital assets, and how to get involved in the social media challenge – inviting people to share what they are doing to see, love or protect the Reef.

Reef Life Survey (RLS) have recently created a visually spectacular coffee table book of the offshore shallow reefs of Australian Marine Parks. With funding under the Our Marine Parks Grants program, *Living offshore reefs of Australian Marine Parks* draws on over a decade of data, analysis and images collected by volunteer and scientific RLS SCUBA divers, from over 2000 sites around Australia. Featuring over 400 images, the book highlights the incredible diversity of Australian Marine Parks and the fascinating marine life they aim to protect.

The Our Marine Parks Grants program has also supported a range of citizen science activities. One grant to iXBlue Pty Ltd has undertaken lagoon reef health monitoring at Norfolk Island Marine Park, while supporting community education and involvement. More information can be found <u>here</u>.

4.B - Collaborate with Indigenous people and seek to incorporate Indigenous and local knowledge into policies and management plans:

• (ICRI) How do you incorporate Indigenous and local knowledge into policies and management frameworks. Please provide us with some examples. Do you have any plans or strategies to further promote this incorporation?



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Answer:

Australia strongly believes that collaboration with First Nations People is integral to best practise management of coral reefs and leads to better outcomes for coral reefs.

The Reef Authority is working toward the co-management of the Marine Park. This journey is underpinned by the Reef Authority's <u>co-management principles</u> which have been and will continue to be applied throughout the development or review of any new policies or management frameworks.

The Reef Joint Field Management Program has an increasing number of formal and informal field management arrangements with Traditional Owners. A 'Traditional Owner Partnership Strategy' The TOPS provides guidance for a spectrum of partnership arrangements ranging from simple information sharing through to potential primary and sole management by Traditional Owners. Key components of the strategy include: fee for service arrangements; enhanced coordination and knowledge/information sharing; needs assessment and capacity development; and two-way understanding and mutual respect. The Reef Joint Field Management Program recognises that development of enduring working relationships with Traditional Owners will progress at different rates according to the interests and capacity of each group. Importantly, the Reef Joint Field Management Program will continuously improve its own ability to function as an effective, culturally aware and truly collaborative partner. Partnership development with Traditional Owners is also guided by the Reef Authority's Aboriginal and Torres Strait Islander Heritage Strategy for the Great Barrier Reef Marine Park and the Department of Environment and Science (DES) Gurra Gurra Framework 2020 – 2026.

DBCA jointly manages the Ningaloo Coast with Traditional Owners and DBCA. A Joint Management Body is in place to support joint management and decision making and is facilitated by a DBCA Cultural Liaison Officer, a Joint Management Officer and a team of Indigenous rangers.

In addition, as part of Ningaloo's partnership in the Resilient Reefs Initiative and the development of a Resilience Strategy for the Ningaloo Coast key points of engagement in RBM included supporting the cultural mapping of the sea country of Ningaloo and a workshop with Traditional Owners on healing Sea Country and restoring the reef <u>TRIALLING REEF RESTORATION FOR</u> <u>RESILIENCE_NINGALOO_JUNE 2022_PUBLIC (columbia.edu)</u>

Parks Australia implements an Indigenous Engagement program in managing Australian Marine Parks. The program seeks to recognise and respect the ongoing cultural responsibilities of Indigenous people to care for Sea Country and support multiple benefits for Traditional Owners. More information can be found here: <u>Indigenous engagement program | Australian Marine Parks</u> (parksaustralia.gov.au).

Australian Marine Park Network Management Plans acknowledge the rights and interests of Indigenous people and identify key outcomes of partnering with First Nations Australians. Implementation Plans further identify opportunities for formal and informal collaboration and codesigning projects on Sea Country. This supports knowledge exchange and learning, which improves Park management.

(TOPS)AIMS' tropical operational footprint intersects with the sea Country of Australia's northern coastal Traditional Owners and a significant management capacity in remote communities and Indigenous Ranger programs.



AIMS recognises that Traditional Owners have inherent rights and responsibilities and an enduring spiritual and cultural connection with their land and sea Country and all within it. AIMS understands that greater research impact and value can be created, and new insights gained when AIMS science is interwoven with the knowledge, perspectives, capacity, and capability of this country's original marine scientists – the Traditional Owners of Sea Country.

AIMS' interest in this area has grown from the deep engagement with Traditional Owners of Australia's sea Country through the development and implementation of AIMS' Indigenous Partnerships Policy and Plan.

The <u>Plan</u> and <u>Policy</u> are the result of a comprehensive review of ethical guidance; the plethora of Traditional Owner generated land and sea management plans (e.g. individual Sea Country plans and regional syntheses); and discussions with our Traditional Owner partners. We learnt that the AIMS mission overlaps strongly with that of the Traditional managers of Sea Country. Besides finding opportunity in the synergies between AIMS and Traditional Owners in science, capability and capacity needs and priorities, the Plan and Policy requires AIMS to respect and value Traditional Knowledge and support the inherent rights of Traditional Owners and their obligations to look after Sea Country.

The Plan defines four tiers of engagement (Bronze, Silver, Gold, Platinum) to achieve active partnerships. As the hierarchy suggests, the amount of effort and investment in engagement progressively increases from bronze to platinum, and in addition, there is a shift along this continuum from AIMS driven projects, through to equal partnerships, through to Traditional Owner driven projects.

• (ICRI) Do you have any, or know of, best practices to solicit Indigenous and local community knowledge?

Answer:

As above, working with Traditional Owners and two-way knowledge exchange through cultural mapping of Sea Country and targeted workshops (<u>TRIALLING REEF RESTORATION FOR</u> <u>RESILIENCE_NINGALOO_JUNE 2022_PUBLIC (columbia.edu)</u>) with Traditional Owners are seen as successful practices for two-way learning.

To better protect cultural heritage values, the Reef Authority's permit application assessment includes a cultural referral process to seek Traditional Owners' advice on what impacts a proposed activity might have on their Sea Country values and potential mitigation strategies, if any. This advice contributes to the assessment against mandatory criteria, including impacts to Marine Park values. As an initial stage, advice is only sought on applications requesting specific access within four Traditional Use of Marine Resource Agreement areas. It is intended to expand over time to include additional groups.

The <u>AIMS Strategy 2030</u> sets an ambitious target for partnering with Traditional Owners to create new shared research that integrates Indigenous knowledge of Sea Country with other sciences:

• 90% of AIMS projects on sea Country are Indigenous Partnership tier Silver, and 10% of projects are tier Gold.



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AIMS applies the inherent right of Traditional Owners to be decision makers regarding what we can and cannot do on and to their Sea Country. This is the principle of Free, Prior, Informed Consent (FPIC). AIMS' Indigenous Partnerships team works closely with AIMS researchers and Traditional Owners to seek and obtain FPIC.

Early engagement is crucial as the process of developing and providing appropriate information (including the initial development of a fact sheet about the planned research that is in clear, non-jargon language) and organising meetings for discussion can take up to 6 months or longer depending on pre-existing relationships with or knowledge of the Traditional Owner group(s). Researchers should also consider contingencies for the location of research, in the event that FPIC is not obtained for their most preferred location.

The FPIC process is just the beginning and AIMS has an expectation that there will be continued engagement with Traditional Owners as the project progresses – relative to the Indigenous Partnership tier level.

- On-Country community meeting/s during field work if practical
- Updates at the end of each field trip or other project milestone
- Legally binding protections for Traditional Knowledge
- Consideration of issues of underwater cultural heritage and movement of material between sea Countries or to land-based facilities
- Identification and resourcing of opportunities for Traditional Owners to be involved, including capacity and relationship building, training, e.g. Aquaculture, Dive and Vessel Operations.
- Identification of further ideas for future projects, especially if they may be suitable for a joint Gold project.

C. Kunming-Montreal Global biodiversity framework

• (ICRI) Do your current National Biodiversity Strategies and Action Plans (NBSAP) incorporate coral reefs? If not, what kind of material will be useful for your Country/organisation to ensure coral reefs are integrated in the revision of NBSAPs?

Answer:

Broadly included under the high-level statements in the plan (*Australia's Strategy for Nature 2019* – 2030) and explicitly via the mention of the Reef 2050 Plan on page 10: <u>Australia's Strategy for Nature – DCCEEW</u> <u>Australia's Strategy for Nature 2019-2030 | Australia's Nature Hub (australiasnaturehub.gov.au)</u> The Reef 2050 Plan – DCCEEW

• (ICRI) How are you planning to implement the Kunming-Montreal Global biodiversity framework. For you, which targets are the most relevant for coral reefs?

Answer:

Australia welcomes the Kunming-Montreal Global Biodiversity Framework and is committed to taking action to achieve is mission of halting and reversing biodiversity loss.

Australia's National Biodiversity Framework and Action Plan (NBSAP) is being updated and is planned to be finalised mid-2024. Targets 2 (restoration), 3 (protected areas), 7 (pollution) and 8 (climate change and ocean acidification).

D. Upcoming events

Please tick the most appropriate box/boxes:

September 19th - 23rd 2023: 37th ICRI GM, USA, Hawaii

 \Box 30th November – 12th December 2023: 28th Conference of the Parties to the United Nations Framework Convention on Climate Change

26th February – 1st March 2024: 6th session of the United Nations Environment Assembly

□ 10th – 12th April 2024: 2024 UN Ocean Decade Conference, Barcelona, Spain.

□ 2024: United Nations Biodiversity Conference (COP16) of the Parties to the UN Convention on Biological Diversity (CBD), Turkey.

 \boxtimes Other

Please list any upcoming regional / international events relevant to ICRI that your organisation plans to attend:

Answer:

Australian Coral Reef Symposium 2024 World Heritage Marine Managers Meeting October 2023.

E. Publications. Please list relevant publications / reports you have released recently (+ add a link if possible)

Publication	URL
Living Offshore Reefs of	
Australian Marine Parks,	
Reed New Holland,	
September 2022.	
Coral Sea Marine Park Coral	Coral Reef Health Survey 2022 Australian Marine Parks
Reef Health survey 2022	(parksaustralia.gov.au)
Coral Sea Marine Park Coral	Coral Sea Marine Park Coral Reef Health Survey 2021
Reef Health survey – 2021	Australian Marine Parks (parksaustralia.gov.au)
Coral Reef Health in the Coral	Coral reef health in the Coral Sea Marine Park Australian
Sea Marine Park – 2018-2020	Marine Parks (parksaustralia.gov.au)



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Differential bleaching susceptibility among coral taxa and colony sizes, relative to bleaching severity across Australia's Great Barrier Reef and Coral Sea Marine Parks, 2023 Norfolk Island Reef health	Differential bleaching susceptibility among coral taxa and colony sizes, relative to bleaching severity across Australia's Great Barrier Reef and Coral Sea Marine Parks Australian Marine Parks (parksaustralia.gov.au)
studies	s/scientific-publications/norfork-island-lagoonal-reel-
	ecosystem-health-assessment-2020-2021/
AIMS' Annual Summary Report on Coral Reef Condition for 2022/23 (Great	 <u>https://www.aims.gov.au/node/4236</u> <u>https://www.aims.gov.au/information-centre/news-and-</u> stories/pause-recent-coral-recovery-much-great-barrier-
Parriar Paaf	reef
Dailler Reel)	https://theconversation.com/is-the-great-barrier-reef-reviving-
	or-dving-berg-whats-happening-beyond-the-headlings-210558
AIMS Index of Marine Industry 2023	 <u>https://www.aims.gov.au/sites/default/files/2023-</u> <u>05/AIMS_IndexOfMarineIndustry_24May2023FINAL.pdf</u> <u>https://www.aims.gov.au/information-centre/news-and-stories/australias-blue-economy-grew-through-covid-new-report-shows</u>
Coral restoration and	 https://journals.plos.org/plosone/article?id=10.1371/journa
adaptation in Australia. The	1.pone.0273325
first five years	
Management approaches to	1
Management approaches to	- <u>https://www.science.org/doi/10.1126/science.adi3023</u>
conserve Australia's marine	
ecosystem under climate	
change	
A full list of AIMS	– <u>Annual Reports AIMS</u>
publications is included in the	 <u>https://www.aims.gov.au/sites/default/files/2022-</u>
AIMS Annual Report – the	10/Annual%20Report%202021-
most recent edition is 2021-	22%20Publications%20List.pdf
27	*

F. ICRI Member Feedback. What do you find most valuable about being a member of ICRI as well as completing the ICRI member reports? If you have any ideas to improve the Member Reports, please list below:

Answer:

Australia is a founding member of ICRI and a global leader in marine protected area management. Australia's international relations objectives include supporting multilateral agreements and initiatives with respect to climate change, the environment, oceans, and security, particularly in the Pacific. Australia's objectives with respect to coral reefs and related ecosystems are therefore closely aligned with those of ICRI. Australia recognises the high-profile work of ICRI, and its value as a contributor to international cooperation, collaboration and advocacy.



At the technical level, ICRI forums provide a valuable means of sharing information, knowledge and experience on managing coral reefs and related ecosystems. As such, ICRI contributes to the uptake of leading-practice approaches to protecting and managing these important ecosystems.

Members Reports will be most useful if:

- 1. The content is put to use by ICRI or ICRI members to further their objectives, and
- 2. The content does not duplicate content provided through other forums (e.g. ICRI subforums or reporting provided under relevant multilateral agreements and initiatives)

Australia recommends ICRI provide members with an overview of how it uses content in members Reports and undertakes a survey of members to understand how they will use the content of other members' Members Reports, and that this informs a joint discussion on potential ways to improve them.

G. Contact information & member information. (Note that this information will be posted on the ICRI website on your member page: <u>https://icriforum.org/members/</u>).

Please use the table below to provide us updates to your member's focal points as well as the blank cells to indicate changes to information (please add more rows, as needed):

Focal Point 1:	
Name:	Margaret Johnson
Title/Organisation:	General Manager
Email:	Margaret.johnson@gbrmpa.gov.au
Focal Point 2:	
Name:	Teena Browning
Title/Organisation:	Director
Email:	Teena.browning@gbrmpa.gov.au
Focal Point 3:	
Name:	Thea Waters
Title/Organisation:	Assistant Director
Email:	Thea.waters@gbrmpa.gov.au
Member page updates:	
Section	Update
Do you have new resources (rep	oorts, guidelines etc.) that you would like to display?
Resource description	URL



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Thank you very much for sharing your valuable experiences and information with ICRI. Members reports, meeting outputs and resources will be uploaded to: <u>https://icriforum.org/events/37th-icri-general-meeting/</u>