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: **Coral Reef Alliance**
- Name of person(s) completing member's report: Helen Fox and Ben Charo
- Email: hfox@coral.org
- Are you a Focal Point: x Yes ☐ No
  - If no, who are you completing the form on behalf of:
- Which was the last General Meeting you attended: 36th (Dec 2021, virtual)
- Will you be attending the 37th ICRI General Meeting: x Yes ☐ No, Andrea Rivera-Sosa of CORAL will be attending on our behalf
- Member social media:
  - Twitter: @coral_org
  - Facebook: @coralreefalliance
  - Instagram: @coral_org
  - LinkedIn: @coralreefalliance

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: https://icriforum.org/resilience-hub/)*

CORAL's work includes many of the proactive measures across the three elements of RBM (community, governance, and ecosystem). Examples include our Tela Bay, Honduras fisheries program, developing a Destination Management Organization in Cozumel, and programs to monitor and improve water quality in the Western Caribbean and Hawaii. We have played key roles in "supporting local institutions, industries and community leaders to be reef champions and stewards."

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.

    - *CORAL creates, manages, and enhances marine protected areas and coastal estuaries by introducing community-based fishery management strategies, appropriate co-management systems, access rights, enforcement of regulations, and promoting sustainable fisheries. This includes extensive local engagement (see https://coral.org/en/what-we-do/local-engagement/).*
    - *We also spearheaded new scientific research into coral adaptation to better understand how coral reefs adapt to climate change and the conditions that help encourage that evolutionary process (see https://coral.org/en/how-coral-reefs-can-adapt-to-climate-change/).*

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

    - *We recently launched our **Coral Bleaching Toolkit & Comprehensive Guide** (https://coral.org/en/coral-bleaching/) and have conducted multiple trainings on coral bleaching monitoring*
    - *CORAL and partners have developed a "Train the Trainers" program for tour guide operators in the Mesoamerican Reef to more effectively educate tourists about coral reefs and how to protect them (see https://coral.org/en/resource/trainthetrainers/).*
    - *CORAL and partners developed protocols and a handbook for the first coordinated water quality sampling project to be implemented in the MAR region. This and many other guides and training materials on a variety of topics are available for download here: https://coral.org/en/tools/guides/*

- *We co-developed the online course, Remote Sensing and Mapping for Coral Reef Conservation , with the Reef Resilience Network and Allen Coral Atlas (in 2021).*

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.

We share NOAA's broad definition of restoration: (https://www.fisheries.noaa.gov/national/habitat-conservation/restoring-coral-reefs): 1)Planting nursery-grown corals back onto reefs; 2) Making sure habitat is suitable for natural coral growth; and 3) Building coral resilience to threats like climate change. CORAL focuses our efforts on these latter two, reducing land-based pollution and addressing overfishing. More information on our thinking on restoration is here: https://coral.org/en/blog/what-is-coral-restoration-and-can-it-save-coral-reefs/

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" (https://portals.iucn.org/library/efiles/documents/2004-023.pdf), especially related to the use of new technologies.

Yes, we have been involved in several bleaching monitoring projects in collaboration with the Allen Coral Atlas. These used a geo-referenced photo-transect protocol developed at the University of Queensland's Remote Sensing Research Centre (RSRC) over many years (see Field Engagement in https://allencoralatlas.org/methods/ for more information). We also have monitored some sites in collaboration with https://reefcloud.ai/, an open-access photo and data analysis and sharing platform.

- (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)?

Yes, we have coral monitoring training courses (Andrea Rivera-Sosa, in collaboration with Atlantic Gulf Rapid Reef Assessment (AGRRA) and Healthy Reefs for Healthy People Initiative (HRI) in the Mesoamerican Region) and also developed bleaching monitoring webinars and trainings, which include recent photo monitoring methods mentioned above.

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

The GCRMN would like to receive feedback on the Status of Coral Reefs of the World: 2020 report 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)?

I have read the Executive Summary and looked at the report overall. We have updated our summary/overview statistics based on the report; I also looked at (and provided feedback for) the WRI Dashboards (https://resourcewatch.org/dashboards/coral-reef-dashboards) but haven't used the data directly.

- (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 first 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 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:

a. *Taskforces: Yes, Andrea Rivera-Sosa is interested in joining the Data Task Force*

b. *Data to contribute (GCRMN Region Country, Data description):*

c. *Upcoming capacity building activities: Bleaching Toolkit & Guide webinars*

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:

coral disease
vessel groundings
bleaching
invasive species outbreaks (lionfish and COTS)
large storm events
other:

If yes, please provide us with more information.

CORAL has recently developed a Coral Bleaching Toolkit & Comprehensive Guide that gathers essential information about coral bleaching from multiple collaborators into one convenient resource for coral reef managers, dive operators, students, and the general public. Inside, there is a wealth of educational content, a handy list of tools for monitoring and alerts, and a practical checklist of steps to take before, during, and after a bleaching event.

While CORAL has also not developed a response plan to SCTLD per se, it has helped monitor its spread in the Western Caribbean, particularly in Honduras. This recent paper, for instance, produced by CORAL and partners, documents patterns of the spread of disease in Honduras and identifies further research needs associated with understanding these patterns.

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?

CORAL is currently beginning a communications campaign to share and distribute the Coral Bleaching Toolkit and Comprehensive Guide described above. Its primary target audiences include coral reef managers, dive operators, students, scientists, and the general public. The main goal of this campaign is to empower practitioners through offering information about remote and on-site monitoring tools, providing a checklist for how to mobilise in advance of and respond to a coral bleaching event, as well as other means of assistance. Our main message is that while coral bleaching events are not (yet) stoppable, there are still many useful actions to be taken.

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?

CORAL's programs are designed and implemented with an equity lens to create an environment in which scientists can work alongside residents on issues impacting those who are marginalised and underrepresented and, in many cases, most affected. Specific examples of this include:

- *In coastal communities of Honduras, we have developed and continue to expand income diversification projects that provide people with resources they need to feed their families without devastating local fish populations. Creating meaningful, community-informed opportunities for families to shape their own lives through aquaculture and community chicken farms promotes equity by changing resource distribution and empowering women who have assumed leadership roles in these projects.*
- *In addition to 71% of our Honduran team being female, CORAL hires and enhances the skills of women who are employed and trained as community scientists, program coordinators, and leaders in the management and operation of wastewater treatment plants. The World Bank's Water Global Practice published a study, "Women in Water Utilities, Breaking Barriers", highlighting that less than one in five people working in the water sector are women. Women are disproportionately affected by water and sanitation issues as they are more likely to be in the home, raising children, increasing their risk of disease exposure. They are also underrepresented in wastewater careers and decision-making. CORAL's efforts allow women the time to diversify their income and join the workforce; promoting economic growth.*
- *CORAL collaborates with partners in marginalised communities to ensure access to clean water and basic sanitation. These are human rights and essential to equality.*

Sustainable tourism and the development of Destination Management Organizations in Cozumel, Belize, and Honduras aligns with state and local action plans and will result in increased visitor awareness of local threats and their ability to contribute to the equity and wellbeing of local communities.

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

CORAL has significant experience working in close collaboration with Indigenous and local communities in Honduras and Hawai'i. However, we have not developed tailored best practice guidelines that reflect our learnings. Systematising this knowledge across our study sites constitutes a worthwhile project and we may undertake this in the future.

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?

CORAL works primarily in the United States, Honduras, Mexico, Indonesia, and the Philippines. The United States is not a party to the CBD and so does not have an NBSAP. The NBSAPs of the remaining countries, however, all address coral reefs.

Regardless, the most useful material for our organisation in the context of NBSAP revision and improvement is most likely information on a) opportunities to contribute to best practices guidelines for coral reef conservation in the context of NBSAP development/revision and b) opportunities to provide input on NBSAP development itself. For instance, we recently contributed to guidelines for the inclusion of ecological connectivity in National Biodiversity Strategic Action Plans developed by the IUCN WCPA Connectivity Conservation Specialist Group. In this context, we emphasised the importance of protecting well-connected, genetically and thermally diverse assemblages of coral reefs

to maximise climate change resilience (see sections on our science above). We would benefit from being made aware of similar opportunities to provide input on key guidance documents.

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

Our work is most closely aligned with the goals of Targets 1-4, 7-11, and 21-23. A few of our most important related work streams include:

Applied Science and Tool Development for Conservation Practitioners. *As summarised in a recent comment we published with partners in Nature Ecology and Evolution, our science tells us that protecting genetically diverse portfolios of well-connected coral reefs constitutes the best strategy to maximize the chances that these ecosystems will be able to adapt to climate change. In particular, as ocean temperatures rise, we must also keep corals in hotter waters healthy and protected so they can reproduce and spread their heat tolerance to other coral reef areas. Effective area-based conservation planning is critical to these goals. We are currently working with partners to investigate whether remotely sensed measurements of coral reef habitat diversity (calculated from Allen Coral Atlas benthic and geomorphic classes) might constitute an effective coarse proxy for genetic diversity of coral reefs, and therefore for adaptive capacity for climate change as well. As countries around the world move to operationalize the Post-2020 GBF and achieve their marine protection commitments, this data layer–which, like the Allen Coral Atlas, would be freely available online–could fill a critical gap, allowing practitioners in under-resourced contexts to incorporate considerations of genetic variation into marine spatial planning.*

Establishing (Connected) Marine Protected Areas and Improving Protected Area Management. *CORAL works with local communities and governments to create networks of marine protected areas (MPAs)/locally managed marine areas (LMMAs) and optimize management plans. In Honduras, for instance, while many of the barrier reefs along the coast are contained within an existing MPA network, many are protected in name only. CORAL works with local organizations, governments, and community members to create science-based management plans and enforce regulations within Honduras' MPA network, and to build new MPAs that help fill management gaps. We have implemented improved management systems for numerous MPAs in Roatan, Utila, Guanaja, Trujillo, and Tela Bay. Our larger goal is to connect all North Coast MPAs into a cohesive and regionally integrated biological corridor that protects wildlife along the entire Honduran Caribbean coast.*

In the Coral Triangle, CORAL is also helping develop a multi-country (Indonesia and the Philippines), multi-partner (including universities and NGOs in the Coral Triangle region), project called "Climate REEFS – integrating risks, evolution and socio-economics for fisheries sustainability on coral reefs." It is part of the Climate Adaptation and Resilience (CLARE) initiative (https://clareprogramme.org/), funded by Canada's International Development Research Centre and the UK's Foreign, Commonwealth & Development Office to support applied research for socially-inclusive and sustainable actions that build ecosystem resilience to climate change, especially among the world's most vulnerable populations. Our CLARE project aims to identify adaptive reefs from space (see above) and to characterize how gender and social status shape socio-economic vulnerabilities and adaptability to declining reefs. This knowledge will underpin the development of MPA management plans that improve connectivity and coral reef resilience to climate change while addressing the vulnerabilities of marginalized populations.

CORAL is also anticipating partnering with USAID's Sustainable Fisheries Asia - Technical Support (SuFiA-TS) to enhance regional reef fisheries management efforts associated with climate change adaptation, taking an ecosystem approach to fisheries management (EAFM), Gender Equality and

Social Inclusion (GESI), and small-scale fisheries (SSF) within the coral reef and reef-associated ecosystems of the Indo-Pacific, particularly the Coral Triangle. SuFiA TS and CORAL will collaborate to provide technical support assistance to relevant regional partner organizations, most notably the CTI-CFF Regional Secretariat, through the provision of two full-time technical officers (or "CORAL Fellows") focused on coral reef resilience and adaptation in the Coral Triangle. CORAL will also support the completion of a high-level climate risk assessment for the Indo-Pacific region led by SuFiA TS. In the context of both CLARE and the SuFiA-TS partnership, the Coral Reef Alliance hopes to support Coral Triangle governments and NGOs that support these governments (such at the Coral Triangle Center) with scientific information that will improve the efficacy of coral reef protection efforts and bolster climate resilience for both reefs and coastal communities.

Addressing Local Threats to Coral Reef Health within (and outside) MPAs + Ensuring Sustainable Use. *Effective conservation and management of MPAs cannot occur without addressing critical issues such as water quality and overfishing. In Honduras and Hawai'i, CORAL works to reduce sediment runoff and wastewater pollution through restoring degraded streams and watersheds, building and updating sustainable wastewater treatment infrastructure by collaborating with governments and communities, and monitoring water quality. On Roatan, Honduras, CORAL's work has already kept 29.3 million gallons of sewage out of the water, resulting in significant reductions in fecal coliform bacteria counts offshore and improvements to coral reef health.*

In addition to its marine protection efforts, CORAL also works with local communities and governments to establish fisheries closures, gear restrictions, and increase compliance with regulations by working with law enforcement. CORAL also works to promote sustainable alternative livelihood activities and building community awareness about coral reef ecosystems. These activities help improve sustainable use of coral reef protected areas.

D. Upcoming events

Please tick the most appropriate box/boxes:

- September 19th – 23rd 2023: 37th ICRI GM, USA, Hawaii
- 30th November – 12th December 2023: 28th Conference of the Parties to the United Nations Framework Convention on Climate Change
- 26th Feb–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.
- Other

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

Adaptation Futures Conference, Montreal, Oct 2-6, 2023 https://adaptationfutures.com/

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

Publication	**URL**

M. A. Colton, L. C. McManus, D. E. Schindler, P. J. Mumby, S. R. Palumbi, M. M. Webster, T. E. Essington, H. E. Fox, D. L. Forrest, S. R. Schill, F. J. Pollock, L. B. DeFilippo, E. W. Tekwa, T. E. Walsworth, M. L. Pinsky, Coral conservation in a warming world must harness evolutionary adaptation. Nat. Ecol. Evol. **6**, 1405–1407 (2022).	https://www.nature.com/articles/s41559-022-01854-4

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:

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

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:	**Helen Fox**
Title/Organisation:	**Conservation Science Director, Coral Reef Alliance**
Email:	**hfox@coral.org**
Member page updates: the links are current, thank you!	
Section	*Update*
Do you have new resources (reports, guidelines etc.) that you would like to display?	
Resource description	*URL*
Coral Bleaching Toolkit & Comprehensive Guide.	https://coral.org/en/coral-bleaching/
Protocol Handbook for Monitoring Marine Water Quality in the Mesoamerican Reef (MAR) System.	https://coral.org/wp-content/uploads/2023/03/Protocol-Handbook-for-Monitoring-Marine-Water-Quality-in-the-MAR-FINAL.pdf

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