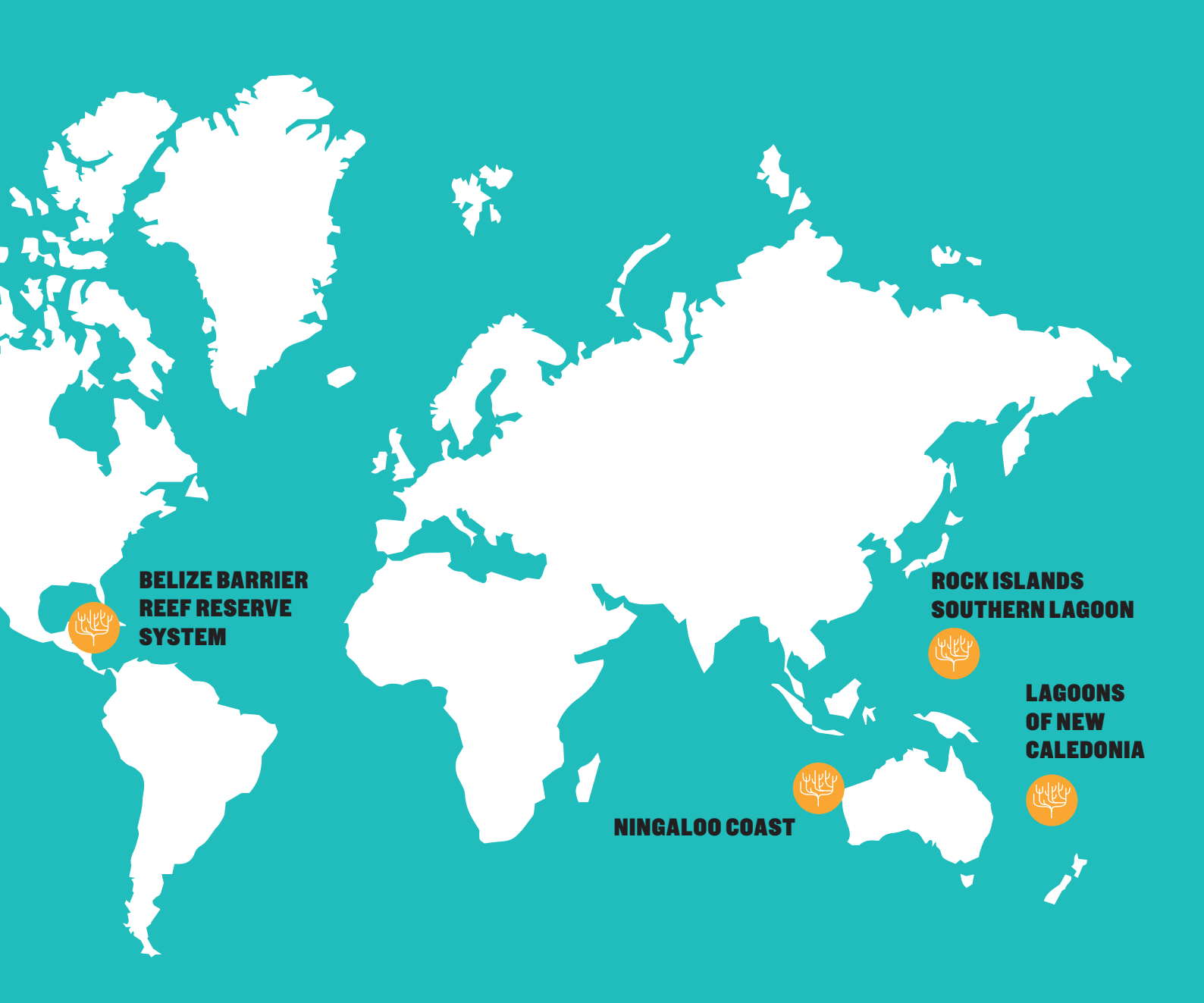


RESILIENT REEFS INITIATIVE

Insights and Updates 2022



Great Barrier
Reef Foundation



**BELIZE BARRIER
REEF RESERVE
SYSTEM**

NINGALOO COAST

**ROCK ISLANDS
SOUTHERN LAGOON**

**LAGOONS
OF NEW
CALEDONIA**

ACKNOWLEDGEMENT OF COUNTRY

The Resilient Reefs Initiative works with communities across the globe that have a huge diversity of cultures and languages. We would like to acknowledge all Indigenous peoples and local communities of the lands and seas on which we work and partner. We recognise the incredible wealth and depth of knowledge Indigenous peoples and local communities hold for managing land and sea Country.

We pay our respects to the elders past, present and emerging, of all Indigenous peoples and local communities from around the world.

OUR TEAM

Pioneered by the Great Barrier Reef Foundation, the Resilient Reefs Initiative (RRI) is a global partnership bringing together local communities, reef managers, and resilience experts to develop new solutions for adapting to the effects of climate change and local threats.



Site visit with project partners to the Whitsundays for project kick off.



The Resilient Reefs Initiative supports communities who depend upon reefs to lead solutions to protect them. Transformational change can occur when local and global leaders come together to tackle climate change and support coral reef resilience.

Dr. Lizzie McLeod, The Nature Conservancy (TNC)

Project Partners

Resilient Reefs is a collaboration with UNESCO, TNC's Reef Resilience Network, Columbia University's Center for Resilient Cities and Landscapes, Resilient Cities Catalyst and AECOM. The program is enabled by the BHP Foundation.

These global partners each bring unique expertise and support to the pilot sites, as well as help to share the lessons and learnings from the Initiative with Reef communities around the world.



Great Barrier
Reef Foundation

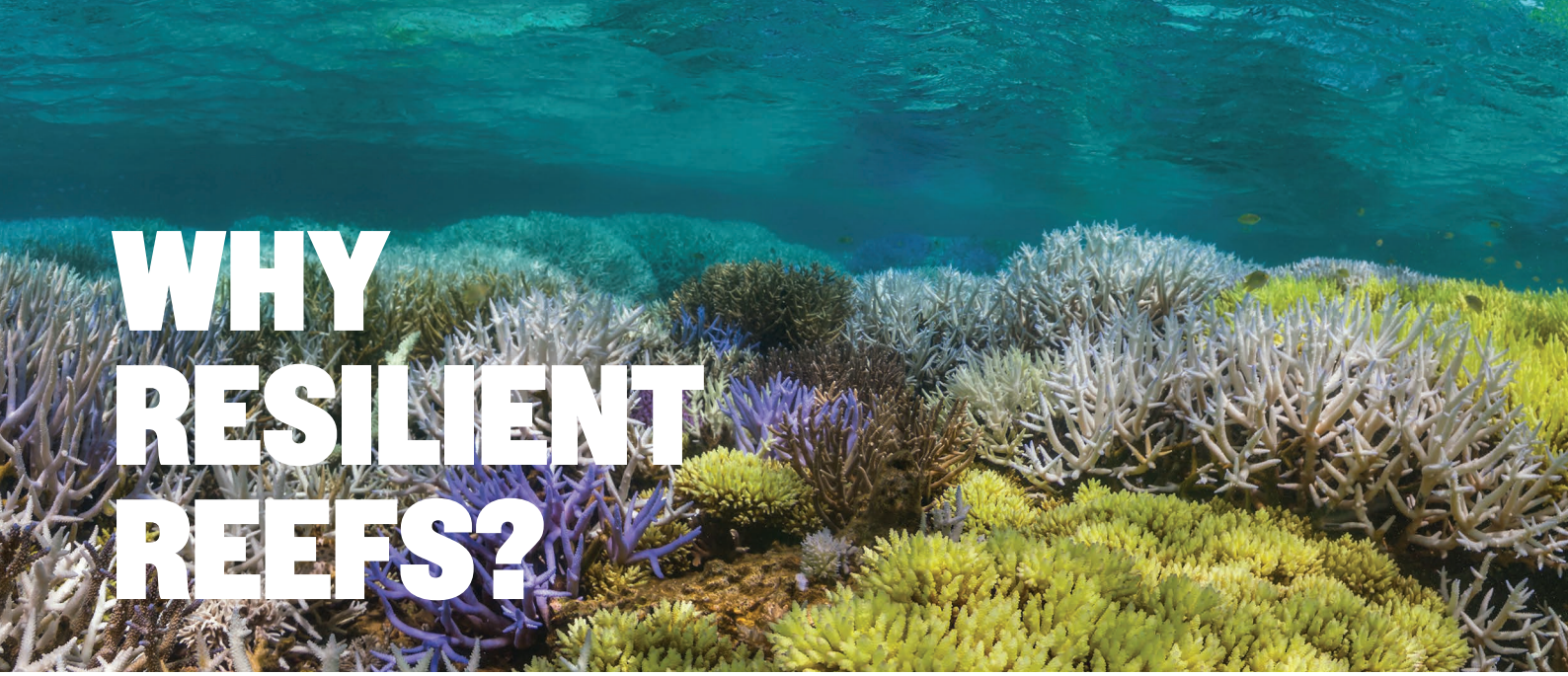


COLUMBIA | Center for
Resilient Cities
and Landscapes
RESILIENT CITIES CATALYST

AECOM | BHP | Foundation

Site Partners

Resilient Reefs partners with local Reef management organisations in each of the Initiative's pilot Reef sites: Department of Biodiversity, Conservation and Attractions in Australia, Conservatoires d'espaces naturels in New Caledonia, Coastal Zone Management Authority and Institute in Belize, and Koror State Government in Palau. In addition, the Initiative works closely with the Great Barrier Reef Marine Park Authority (GBRMPA) to share and scale learnings across our partners.



WHY RESILIENT REEFS?

Climate change is the biggest threat facing coral reefs

Coral reefs are home to 30% of the ocean’s biodiversity, contribute \$10 trillion a year in ecosystem services, and support nearly a billion people worldwide. They are critical to ocean health, which is essential for a healthy planet and healthy people. Yet our reefs are under imminent threat from climate change and local threats; by the 2030s, most coral reefs are projected to experience coral bleaching at least twice per decade, and possibly every year by the 2040s. Action is needed now to prevent a global ecological and humanitarian crisis.

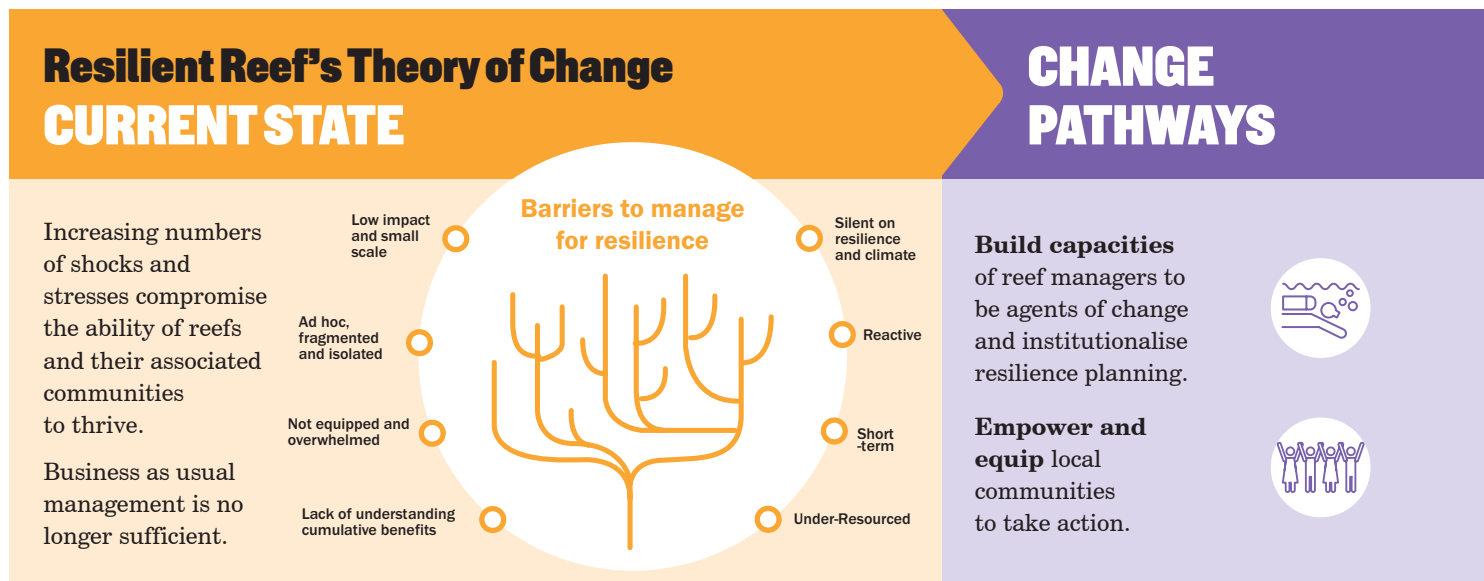
Local action is required for global change

Resilient Reefs is a global partnership working with local governments to design a more resilient future.

We build local capacity and partner on the design and delivery of integrated solutions that build the resilience of coral reefs and the communities that depend on them. The work is led and delivered by local governments and communities and is informed by global experts and the best science available.

What we do

RRI is a global partnership working with World Heritage coral reef sites and the communities that depend on them to adapt to climate change and local threats. It leverages and connects global resources to enhance local knowledge, skills, partnerships, political will, and overall capacity to design and deliver resilience projects and institutionalise resilience-based management. RRI’s commitment to sites includes:





Local Leadership

Funding and support for a new Chief Resilience Officer (CRO) embedded within local reef management organisations.



Strategic Planning

Technical support and partnership to develop a holistic Resilience Strategy.



Action Implementation

Funding and design support to implement solutions with communities.



Global Expertise

Connection to a Knowledge Network providing the best available science and policy insights.

As a result of their partnership with RRI, sites have:

- A better understanding of both the threats and opportunities they face
- A pipeline of projects and clear plan of action for mitigating risk and building resilience
- Engaged communities that can support this work moving forward
- Greater local government capacity to develop partnerships with global funders and innovators.

INTENDED FUTURE



Implement solutions that have a measurable impact on reefs and reef communities.



Foster global network of reef resilience leaders and inspire others to build reef resilience.

World's most enigmatic coral reefs are managed to maintain biodiversity, ecosystem function and social value to associated communities for the long term and inspire similar approaches across coral reefs world-wide.

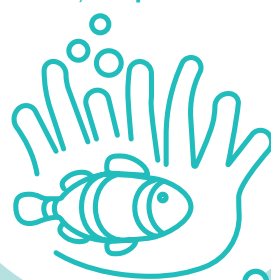
Shared responsibilities

Increased capacity of reef management

Empowered communities

Community of practice

Reefs and reef communities that will survive, adapt and thrive



Robust and replicable model

Strong community buy-in

Catalysed global movement for resilient reefs and reef management

“ Something that is unique to this project is its ambition and looking at sites in their entirety and building resilience across different sectors...a core part of the problem is that everybody continues to work in siloes and that’s not the way we are ever going to make a real difference.

Dr. Fanny Douvere, UNESCO World Heritage Marine Programme

What is Reef Resilience?

Reef Resilience is the capacity of reef ecosystems and the individuals, businesses and communities that depend upon them to survive, adapt and recover from the stresses and shocks that they experience.

The Reef Resilience Framework describes the building blocks for coral reef resilience, which includes: the reef **ecosystem**, the **community** that depends upon it, and the **governance** arrangement that determines how they interact.

The Framework, like the Initiative, understands that resilience can only be built if all systems are strengthened.



ECOSYSTEM

The preservation of ecosystem services.

COMMUNITY

Maintaining or improving community wellbeing.

GOVERNANCE

The maintenance of robust and effective governance arrangements to support these outcomes.

OUR PROGRESS

Four years into this ambitious six-year pilot, the Resilient Reefs Initiative has:

1.

Supported the creation and hire of **Chief Resilience Officers (CROs) at all four partner sites** – amazing leaders embedded within local government at all RRI pilot sites to bring stakeholders together, identify the top resilience challenges and support implementation of projects on the ground.

2.

Partnered on development of the **first resilience strategy for a UNESCO World Heritage Marine site**. This resilience strategy provides a forward-looking vision for how the Ningaloo Coast can best prepare for and adapt to climate change.

3.

Connected local partners and global experts through our Knowledge Network – unlocking new ideas and advancing the field of resilience-based management. In partnership with this network, we have delivered **four global convenings and facilitated several hundreds of hours of technical support** between global experts and local partners.

4.

Funded a range of **projects to advance local resilience building priorities**, including:

- » Implementing a new **Sustainable Fisheries Management Plan in Palau** – the first ever in Koror State. This includes support to local NGOs and government to build the capacities needed to implement the plan and engage with communities.
- » Partnerships between Customary Authorities and Reef Managers in New Caledonia to agree on a **co-management approach for the green turtle population** – balancing the importance of maintaining traditional customs with the critical need to protect and preserve the dwindling green turtle population.
- » Developed **new policy approaches for coastal development in Belize**. Belize's coast, like many other countries, faces stresses from climate change, rapid urbanisation, unsustainable approaches to tourism, and lack of infrastructure. Our partners worked with local stakeholders to develop new development approaches.
- » An economic contribution study with Deloitte Access Economics to **evaluate the role Ningaloo's reef plays in generating local jobs and income** in Western Australia. The assessment highlighted Ningaloo reef's status as a major economic contributor to the region, contributing \$110 million to the state economy in 2018-19 and more than 1,000 full time jobs.

NINGALOO COAST

The opportunity and the challenge

The Ningaloo Coast in Western Australia is the largest fringing coral reef in the world with 260km of reef right along the beach. This UNESCO World Heritage site is home to more than 200 coral species and 500 fish species.

With its strong management framework and lack of development, Ningaloo has fewer local pressures than many other reefs around the world and, in many ways, is in very good condition. Despite this, the reef is experiencing the impacts of climate change – seawater temperatures have increased, coral cover appears to be declining and coral bleaching is becoming more frequent.

The community of Exmouth depends on the tourism industry to thrive. The natural features of the Ningaloo Reef are embedded in First Nations' culture, spirituality and wisdom, with evidence of their connections to Country dating back at least 32,000 years. The future of the community and the reef are interdependent; climate change presents major threats to both.

Progress and partnership to-date

Advancing Co-Management with Traditional Owners

We have funded and facilitated several partnerships with the Traditional Owners of the Ningaloo Coast, including a Traditional Owner led and owned process to map cultural knowledge (documenting tens of thousands of years of local Indigenous knowledge).

Building on this work, we funded a [workshop](#) on healing sea Country and restoring the reef. This workshop involved genuine, early and proactive engagement which provided space for discussion of Traditional Owners' aspirations for reef healing and management, involvement in restoration activities and principles for engagement going forward.

Traditional Owners have requested this approach to engagement in future work, and Ningaloo's Chief Resilience Officer is advocating to research institutions to fund robust and early workshops to ensure Traditional Owners have a seat at the table from the early stages of project design.



Cultural mapping of sea Country with Traditional Owners at Ningaloo. Credit: Department of Biodiversity, Conservation and Attractions.

Planning now for future climate change

Reefs around the world are facing increasing pressures from climate change. To support managers in understanding their options for how to respond, we convened global and local partners in Ningaloo to develop a new framework that helps managers design restoration trials: *Trialling Coral Restoration to Build Resilience: A Framework for Experimental Research, Co-Design, and Management in the Case of Ningaloo*.

Using Ningaloo Reef as a test case, this framework aims to identify and articulate key factors of reef restoration trials, if and when the time comes that intervention is necessary to buy the reef time while emissions are reduced. It considers how restoration efforts can be designed to ensure coordination, transparency, and meaningful engagement between management, researchers, community, Traditional Owners, and tourism operators, which emerged as key constituencies at Ningaloo. The framework aims to inform similar reef, marine park, and coastal resource management agencies worldwide. It is informed by facilitated internal discussions with managers; a review and application of global best practices to the ecological, socio-economic, and governance contexts at Ningaloo; and a workshop with Traditional Owners: *“Healing Sea Country: The Role of Restoration?”*.



Participants in the TO Restoration Workshop at Ningaloo. Credit: Department of Biodiversity, Conservation and Attractions.

Helping communities understand the value of ecosystems

We commissioned a [study](#) to enhance local understanding of the value of ecosystem services that Ningaloo Reef provides. The assessment, conducted by Deloitte Access Economics, helped illustrate just how significant an economic contributor Ningaloo reef is (\$110 million in value added to the state economy in 2018-19 and more than 1,000 full time jobs). The study highlighted how essential it is to protect this unique ecosystem, so it can continue to be enjoyed by all and support local livelihoods and the economy.



Coral Bay manta swim. Credit: Sam Lawrence.



A curious whale shark approaches a tourism vessel at Ningaloo Reef. Credit: Sam Lawrence.

What's next for Ningaloo?

Building on the world class community engagement and resilience planning under RRI, the Ningaloo Coast is poised to be a global leader. This small, rural community is highly dependent on – and extremely proud of – its World Heritage reef. It is a crucial part of local identity and has been for at least 32,000 years, as long as the Baiyungu, Thalanyji and Yinikurtura people have called this place home. RRI is working directly with community partners to deliver resilience-building actions, funding a series of community-led projects including education and empowerment, citizen science and behavior change campaigns to ensure visitors better protect the reef.

This work supports the vision detailed in the Resilience Strategy for Ningaloo Coast. The strategy underscores the strengths of the region, as well as the growing threats it faces. It advances a vision for how the community and reef can better prepare for the impacts of climate change, better address local threats, and identify opportunities for building a more engaged community and a more adaptive management approach.

LAGOONS OF NEW CALEDONIA

The opportunity and the challenge

The Lagoons of New Caledonia are among the most pristine coral reefs in the world. A UNESCO World Heritage site, the Lagoons provide habitat to an incredible diversity of marine life including whales, dugongs, rare crabs and the green, hawksbill, loggerhead and leatherback turtles.

Both New Caledonia and the Great Barrier Reef are green turtle migratory grounds. In between breeding seasons, turtles travel vast distances across the South Pacific in search of food. Once they find feeding grounds they like, they return time and time again, even if there is plenty of food available nearer their nesting site.

Data collected over the past 50 years shows many green turtles born on the Great Barrier Reef routinely cross the Coral Sea into the waters around New Caledonia – approximately 2,100km south-east of Cairns – to feed. Protecting both locations is essential to ensure the green turtle survives and thrives.

Progress and partnership to-date

Finding sustainable solutions with Customary Authorities

New Caledonia's First Nations people, the Kanak people, are the Customary Authorities of the land in the region and make up almost half the archipelago's total population. There are 292 tribes across New Caledonia's 60 districts, which are split into eight customary areas.

Turtles are sacred to Kanak people and are an important part of their culture and traditions, as they are to many First Nations peoples globally, including on the Great Barrier Reef. For centuries, Kanak people have consumed turtles to mark key ceremonies and celebrations. In recent decades however, over-fishing has become a serious issue. Concerned about the impact this was having, Customary Authorities, in partnership with provincial managers, identified a need to return to the sustainable fishing practices their ancestors had built up over centuries.

As part of local turtle celebrations on the Southern Province's Isle of Pines in July 2021, RRI funded a three-day event on the sustainable management of turtles. The aim was to balance the importance of maintaining traditional customs with the critical need to protect and preserve the dwindling green turtle population. In an historic show of solidarity, all eight local tribes came together and agreed on their own sustainable management plans for their area to protect the species against over-fishing.



New Caledonia co-management discussions. Credit: Matthias Balagny



School children in New Caledonia learning about their local environment. Credit: Matthias Balagny.



Watershed Management Workshop in New Caledonia. Credit: Paul Chabre.

Supporting local reef managers with new tools to manage climate risks

Coral reef communities are at very high risk from climate disasters, from hurricanes to coral bleaching to longer term stresses such as sea level rise. Despite these well-known threats, our partners consistently tell us that they don't have enough access to data on climate and/or don't have the capacity to integrate data into their management responses.

In New Caledonia, we funded the training of local reef managers to better integrate climate impacts into management plans using the Adaptation Design Tool. Jointly organised and facilitated by the University of New Caledonia, Conservatoire d'espaces naturels, GBRF, and TNC's Reef Resilience Network, the training supported local managers to understand how to apply the present and future effects of climate change on the design of management actions. In addition, as part of our work partnering with local managers to embed resilience planning into management actions, we supported the revision of Hienghene Management Plan (part of the Northeast Coastal zone, included in the World Heritage site) to be more climate and risk aware and more holistic in its approach.

What's next for New Caledonia?

Pacific Island nations and territories face extraordinary challenges from climate change. They also have unique insights into First Nations peoples-led conservation approaches that can help inform ways to protect these essential habitats and biodiversity.

Our partnership with New Caledonia will continue to focus on ways to limit climate risks and enhance protection of local resources. This includes focusing on support to managers and local providers for strategic and effective management planning, and better recognition of customary laws and cultures in natural resource management. Following the release of their Resilience Strategy framework in late 2022, we will work with local partners to co-design and fund implementation of a series of flagship actions focusing on addressing local and global threats such as: water quality and ecosystem degradation, climate risks, and unsustainable resource use.



Community members taking part in The Turtle Days event in New Caledonia, July 2021. Credit: Matthias Balagny.

BELIZE BARRIER REEF

The opportunity and the challenge

Spanning seven sites, the Belize Barrier Reef Reserve System is the largest barrier reef in the northern hemisphere as well as a UNESCO World Heritage Marine site.

Offshore atolls, several hundred sand cays, mangrove forests, coastal lagoons and estuaries provide habitats to a rich diversity of marine life including threatened species like marine turtles, manatees and the American marine crocodile.

The reef is facing a number of local threats including coastal development, overfishing and invasive species, as well as the multiple impacts of climate change such as coral bleaching, more severe storms and rising sea levels.

Belize's vibrant coastal communities rely heavily on the reef for their livelihoods. The Resilient Reefs Initiative is focused on building Belize's resilience through harnessing community knowledge, diversifying livelihoods and seeking opportunities to balance conservation with commercial and local use of the reef.

Progress and partnership to-date

Multidisciplinary approach to coastal development challenges

In January 2022 we held a Resilience Accelerator workshop looking at creative solutions to the challenges of rapid coastal development in Belize. This workshop was delivered by RRI, Coastal Zone Marine Authority and Institute, Columbia University Center for Resilient Cities and Landscapes, Belize's Ministry for the Blue Economy and GSAPP Urban Design Studio.

During the week-long event, design students, local stakeholders, students and faculty from the University of Belize came together to uncover challenges and opportunities in coastal development as well as impacts on the reef, water quality, infrastructure and local livelihoods.

Over the course of several months, a multidisciplinary team prepared design and policy proposals that will help inform the Belize Coastal Zone Plan update, Strategic Plan for the Ministry of the blue Economy and the Belize Resilience Strategy.



The coastal community at Ambergris Caye, Belize. Credit: Meritt Thomas.

Partnering on a holistic resilience assessment

RRI's partnership with Belize formally kicked off in 2021 when its primary local partner, the Coastal Zone Management Authority and Institute, hired a Chief Resilience Officer and began development of a Resilience Strategy.

The development process has been informed by both deep stakeholder engagement (more than 150 individuals consulted) as well as comprehensive review of the existing research and planning documents (62 plans reviewed).

The resulting Resilience Assessment identified five areas of focus for Belize's resilience agenda:

- Harness community knowledge and engagement
- Address climate vulnerabilities of coastal and marine sectors
- Improve watershed management with a focus on upgrading wastewater treatment and safeguarding coral health
- Advance livelihood diversification within coastal communities, ensuring multiple paths to sustainable livelihoods and economic opportunity
- Ensure a healthy balance between the conservation of marine protected areas with commercial and local use that supports national and local economies.



Manatees are among the threatened species that can be found in Belize. Credit: Maegan Luckie.



CRO Kalene Eck and Eddy Niesten in Belize.



Sea fans at San Pedro, Belize. Credit: Fabrice Dudenhofer.

What's next for Belize?

Belize is a global leader in marine conservation, with the recent execution of its US\$364m Blue Bond (the largest bond for ocean conservation seen to date) further cementing Belize as a country that is innovating to protect its amazing natural resources. RRI is working with key government and NGO partners on the ground to fill gaps, increase coordination, and build capacity where needed to ensure this exceptional place has the resources it needs to deliver on its ambitious goals. In late 2022, the local partners will release their Resilience Strategy, and RRI will work closely with local partners to co-design and implement a set of Flagship actions. These will likely include efforts to better protect the country's remarkable stores of blue carbon, to better coordinate terrestrial watershed management to improve water quality, and to expand coral restoration efforts.

ROCK ISLANDS OF PALAU

The opportunity and the challenge

The World Heritage-listed Rock Islands Southern Lagoon, covers 100,200ha including over 300 uninhabited limestone islands of incredible beauty.

The reef supports a huge diversity of plants, birds and marine life, including the endangered hawksbill turtle and Napoleon wrasse. Although currently uninhabited (the islands were once home to Palauan settlements), they are still used for cultural and recreational purposes

which are regulated through both state and traditional governance systems, which are key to Palau's national identity.

Palau provides a unique opportunity as a pilot site with its rich ties to culture and traditional knowledge and progressive leadership who have worked tirelessly to conserve the environment, and share these learnings globally. Tourists pay a US\$100 "green fee" on entering Palau and sign a pledge written by the children of Palau to "tread lightly, act kindly, and explore mindfully."

The country has also designated 80% of Palau's Exclusive Economic Zone as the Palau National Marine Sanctuary – where any extractive activity, such as fishing, is banned.

Despite its progressive approach to conservation, Palau is facing the impacts of climate change, declines in seagrass coverage, over-fishing, bleaching events and a need for livelihood diversification to alleviate pressure on the natural environment.



PICRC team members in Palau. Credit: Sarah Castine.



The RRI and PICRC team on site in Palau. Credit: PICRC.

Progress and partnership to-date

Strengthening collaboration for sustainable fisheries management

Palau, like so many island nations, is facing the challenge of how to manage declining fish stocks in a way that both responsibly manages the ecosystem and ensures local communities are able to benefit from the natural resources. To support them tackling this challenge, we funded a partnership between a local research center (Palau International Coral Reef Center), a long-standing local NGO (Palau Conservation Society), and the Koror State Government. This partnership is delivering strong community engagement, as well as the delivery of training for the rangers and conservation officers at Koror State who will be instrumental to implementing the multispecies Fisheries Management Plan.

Next steps are to support the adoption of state legislation (the first Fisheries Management Plan for the state of Koror) and on-going monitoring of the Plan to ensure fish stocks are being managed adaptively. As with all projects RRI funds, this work is holistic in that it addresses all three dimensions of reef resilience:

- Strengthening the ecosystem by reducing pressure on the reef
- Strengthening the community by focusing on access to a healthy protein source
- Strengthening governance through implementing transparent rules and regulations and moving towards more adaptive management of fisheries.



Palau's Rock Islands. Credit: PICRC.

What's next for Palau?

The world is watching Palau. This large ocean state is a fierce advocate for ocean conservation and climate justice. Palau is the only nation on earth to have protected 80% of the marine environment and put a stamp in your passport saying you will protect the natural resources. However, they also face important challenges, like the need to expand and diversify livelihoods—an imperative that has been felt most acutely during the tourism shutdown caused by the COVID pandemic. RRI's partnership in Palau kicked off in 2022 with local hires of a Chief Resilience Officer and Resilience Advisor. The team is setting up local governance and progressing through development of its Resilience Strategy, which will help identify the priority challenges we will tackle together.



Palau's natural rock arch formations. Credit: Amy Armstrong.

THE KNOWLEDGE NETWORK

Partnerships are at the core of what we do in the Resilient Reefs Initiative.

First and foremost are the local partners: local, state and national authorities who understand business as usual approaches to management are no longer enough and are ready to chart a new path forward.



CRO Kalene Eck, Belize. Credit: Kalene Eck.



CRO Andrea Uchel, RRI Director Amy Armstrong and Governor Eynos Rudimch in Palau. Credit: Amy Armstrong.

Resilient Reefs supports these partners with direct funding and project support but also by providing access to a global network with expertise in science, policy, finance and planning – a multidisciplinary network unlike traditional conservation programs.

Our Knowledge Network has two primary objectives:

- Growing the capacity of sites and helping to create new solutions for resilience-building.
- Sharing and scaling resilience-based management tools and solutions, and educating and influencing reef communities globally.

By bringing together our local and global partners, we are unlocking new ideas and advancing the field of resilience-based management.



A diver encountering a green turtle on the Great Barrier Reef. Credit: Johnny Gaskell.

Solution Exchanges

One of the ways Resilient Reefs drives local impact with global expertise is through the Solution Exchange program: an annual workshop bringing together multiple disciplines to advance thinking and accelerate action on common problems facing reef managers and communities across the Initiative's pilot sites.



Tourists flocking to coral reef communities. Credit: Ina Carolino, Ocean Image Bank.

2020 Solution Exchange – Effective planning for climate disasters

Our partner communities are keenly aware that climate change is altering the landscape of natural disasters – heatwaves and associated coral bleaching, cyclones, flooding and other storms are increasing in severity and frequency. And while natural ecosystems like coral reefs are known to support almost one billion livelihoods and contribute \$10 trillion in services through protecting coastlines from erosion and storms, they are rarely valued or considered as ‘essential services’ during large-scale disaster planning.

In 2020, we held a virtual exchange looking at this precise question: How can we deliver more integrated and effective planning for climate disasters for coral reef ecosystems and the communities that depend on them?

2021 Solution Exchange – Sustainable Tourism

The past couple of years have delivered a blow to the global travel and tourism industries unlike any in recent memory, impacting communities and livelihoods around the world. As some of our key coral reef sites experience a dramatic decline in visitor numbers, both challenges and opportunities are emerging. The tourism hiatus provided us with an opportunity to look at ways to create more sustainable tourism practices to support the ongoing health and longevity of our reefs and the communities that depend on them.

In November 2021, the Initiative brought together partners, leading experts and local teams to hold a Solution Exchange on Sustainable Tourism.

Together, the participants explored how World Heritage Marine sites can make their local tourism industry more sustainable for both people and the environment and build resilience to events such as the COVID-19 pandemic and reduce pressure on natural resources in the face of climate change.

KNOWLEDGE NETWORK PARTNERS

The Initiative's diverse partners each bring unique expertise and strengths to the Initiative.

Coral reef. Credit: Alex Mustard, Ocean Image Bank.

UNESCO World Heritage Marine Programme

UNESCO has developed and led a series of crucial reports and workshops which enrich and inform the Initiative's work, and support capacity building for the pilot sites. These include:

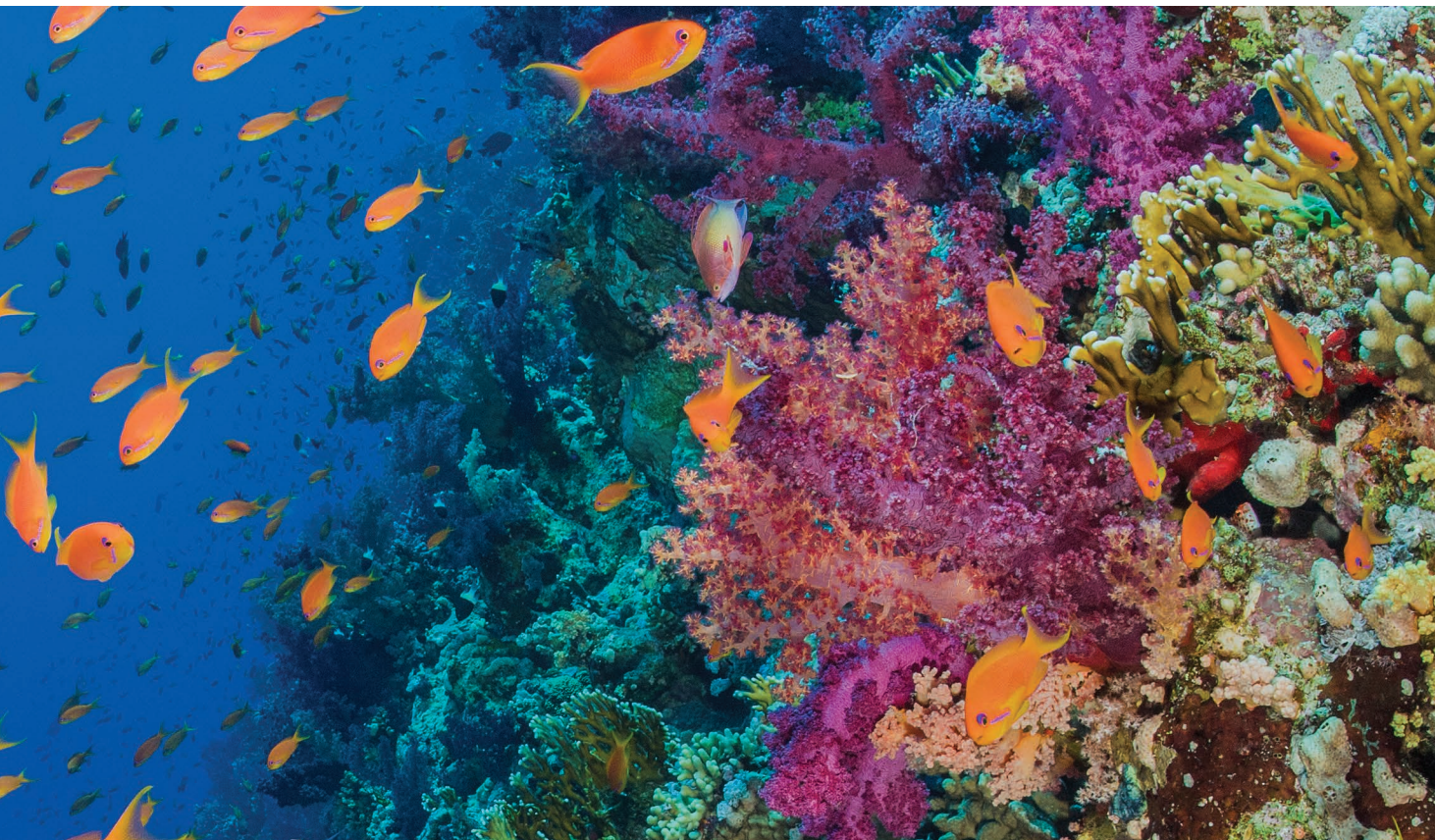
- The *Custodians of the globe's blue carbon assets* highlights the tremendous blue carbon stores in World Heritage marine sites, and the need for more strategic investment and protection in these crucial sinks.
- As part of a broader call for increased and strategic investment in the ocean science needed to safeguard marine World Heritage sites, UNESCO held a series of workshops and produced the *Ocean Science Roadmap for UNESCO World Heritage Marine Sites* report, which highlighted RRI's work in Ningaloo.

In 2022, UNESCO announced an [emergency plan](#) to give World Heritage coral reefs the best chance of survival, including deepening the partnership with the Global Fund for Coral Reefs to drive more resources to action.

Several times per year, UNESCO provides an exclusive online knowledge sharing platform where managers from the 50 marine World Heritage sites connect and share ideas around key conservation challenges, including outcomes towards building climate resilience strategies, such as '[How to successfully build resilience-based management](#)', '[How to apply the CVI to your marine World Heritage site](#)', and '[How to prepare for the next coral bleaching event](#)'.

AECOM

Our global delivery partner, AECOM, provides tailored, expert support to each of the RRI site partners in the development of their Resilience Strategies. This includes partnership in stakeholder engagement, developing Resilience Assessments, designing on-ground actions, and formulating comprehensive strategies. They also participate in all Network programming, bringing a unique perspective and set of skills to the Initiative's work. AECOM's role as program delivery partner is being led out of the Australian sustainability and resilience practice, with support from its global team.



The Nature Conservancy

The Nature Conservancy's (TNC) Reef Resilience Network provides immeasurable support to RRI sites, connecting them to other managers, experts, and the latest science and strategies as well as sharing RRI's key learnings with reef managers around the world. TNC has featured several of RRI's efforts, including co-developing a [website](#) for resources on Sustainable Tourism (based on learnings from the Solution Exchange) a [Resilience-Based Management Toolkit](#), and [case studies](#) of RRI site's efforts, such as Ningaloo's Stakeholder Engagement approach. The Resilient Reefs Initiative and TNC are also co-developing a new course on resilience-based management, which will be a crucial new resource for global managers.

The Resilience Accelerator Team

Columbia University's Center for Resilient Cities and Landscapes (CRCL) and Resilient Cities Catalyst (RCC) led the research, design and delivery of Resilience Accelerators at two RRI sites. The Ningaloo Accelerator focused on trialling coral restoration, and synthesised the latest and best available science to inform future trial decisions, co-designed draft protocols that emerged from internal workshop sessions in the agency, developed case studies of reef restoration implementation practice, and implemented a workshop with Traditional Owners.

In Belize, CRCL worked closely with the local team and combined forces with the GSAPP Urban Design Studio to run a week long workshop with graduate students and faculty from Columbia and the University of Belize to tackle a range of challenges facing coastal communities.

In both cases, the partnership has leveraged diverse expertise from across Columbia University's Climate and Urban Planning Schools, among others.

Great Barrier Reef Marine Park Authority

While the Great Barrier Reef is not a pilot site for Resilient Reefs, as the largest barrier reef system in the world it has a lot to share and a lot to learn. The Great Barrier Reef Marine Park Authority is a key partner for Resilient Reefs; it is active in the Resilient Reefs network, joining Solution Exchanges and other knowledge exchanges, bringing its wealth of experience to the pilot sites, and learning about innovations and opportunities being piloted elsewhere.

WHAT WE'RE LEARNING



Through the delivery of the Resilient Reefs pilot, we are learning a great deal about the needs and challenges of reef managers globally.

Reef communities around the world are looking for strategies and tools to help them deliver resilience-based management. They know that climate change poses extreme risks and that old management approaches are inadequate. They know that more adaptive, integrated planning approaches are required, and they are hungry for support and partnership in embedding those approaches into their own work. The pilot phase of this work has reinforced that:

- **Investment in governance is key to enduring impact**, but it takes time and is often under resourced. Local governments are at the forefront of responding to climate impacts, but they are under-resourced and overwhelmed by the scale and pace of change threatening their ecosystems and communities. Our work with local partners has reinforced that these amazing leaders need long-term commitments, partnership, and resources to meet the scale of challenges they face.
- **Managers want practical tools** for how to design and implement resilience strategies and resilient projects. Resilience is a popular buzz word, often easier to describe than to demonstrate.

We are working with our global partners to refine tools that help all managers put the concepts of resilience into practice – designing projects that are climate aware, locally-informed and led, and deliver multiple benefits across the reef and adjacent ecosystems and human communities.

- **Trusted intermediaries are needed to facilitate this work**, helping to bring together global science and policy expertise with traditional and local knowledge and management experience. We feel a great imperative to democratise access to leading scientific research, but deliver it within the context of local knowledge and with the leadership of local partners.

Participants in a community stakeholder workshop at Ningaloo. Credit: Joel Johnsson.

Site visit to the Whitsundays for the RRI launch. Credit: Gary Cranitch.



Through our partnership with these incredible pilot sites, we are also seeing a common set of resilience challenges emerge. These include the need to:

Advance co-management with Indigenous communities.

Improve fisheries management to reduce pressure on the reef, giving ecosystems the best possible chance to resist and recover.

Improve coastal development trends to achieve better outcomes for vulnerable communities and for reef health, including crucial improvements in water quality.

Build local capacity for restoration and adaptation, delivering technology and research that will prepare local partners for the step change that will be required to manage restoration activities at scale.

Build socio-economic resilience of coastal communities, including diversifying livelihoods away from reef-dependent income.

Better value reef and adjacent blue carbon ecosystems to drive new resources to support their protection.

While the specifics may vary site to site, these challenges are felt broadly and commonly across coastal communities around the world. There is a crucial opportunity to accelerate collaboration on new solutions to these challenges.

Now that our partner sites have articulated these challenges and asked for support in designing actions to respond, the priority for Resilient Reefs in the next few years will be co-designing and trialling solutions to these common challenges – accelerating local impact and global learning.

Leaders from RRI's partner sites at New Caledonia, Belize, Ningaloo, the Great Barrier Reef and Palau.

WHAT WE NEED NOW

Climate change poses existential threats for coral reefs and the communities that depend on them. The urgency and complexity of this challenge demands action.

But which actions? With which partners and delivery approaches? What does holistic resilience planning look like for coral reef communities? Charting that path – learning what capacities, interventions, technologies and partnerships have the greatest impact – globally across varying ecological, cultural, and political contexts, is the work of the Resilient Reefs Initiative.

We are incredibly proud of the work done to-date, but we also know this is just the beginning.

Over the next two years, all four RRI pilot sites will release their Resilience Strategies, and we will partner on the design and implementation of new actions to build the resilience of these incredible places and their Outstanding Universal Value, and the communities that depend on them – spending over \$4 million to deliver this suite of new actions.

In these last two years of the pilot, our focus will be on:

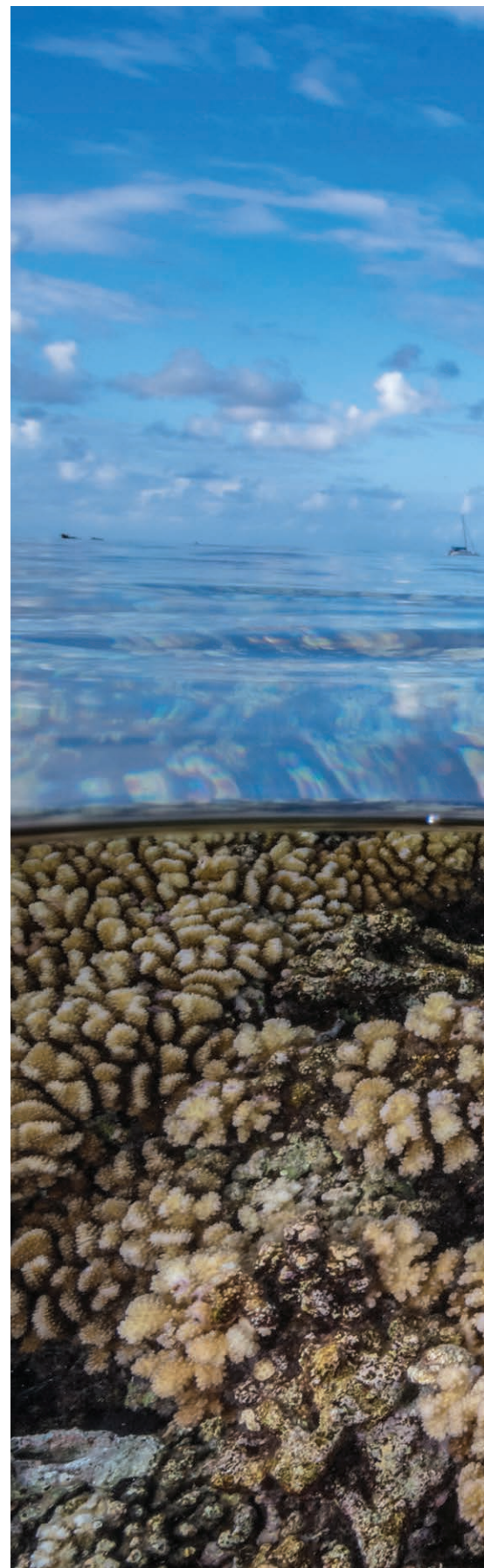
Supporting the delivery of **resilience strategies and new solutions** across the network, monitoring impacts to build the evidence base of what works

Facilitating more **knowledge sharing** and exchanges, sharing what works in the field with our global network

Identifying **new global partners** who believe in this innovative model and want to support this important work

Climate disasters and mass bleaching events continue to accelerate, reminding us of what is at stake and putting pressure on all of us to move to action as quickly as possible – at the speed of trust.

If you would like to learn more about Resilient Reefs and opportunities for collaboration, please contact info@barrierreef.org





Coral reef, French Polynesia. Credit: Hannes Klostermann, Ocean Image Bank.



Great Barrier
Reef Foundation