

# Global Reefs

**IMPACT REPORT** 2022



**F**ifteen years ago, I was on a large wooden boat heading to the island of Misool, one of the four major islands in Raja Ampat, Indonesia. Raja Ampat is literally the most biodiverse place on the planet underwater—with more coral and fish species than anywhere on Earth.

I was traveling there to learn about how communities in Raja Ampat manage their coral reefs and fishes using a traditional practice called *sasi*—a system of marine management that includes limiting the harvest of certain species to maintain healthier populations. Diving and spending time with communities in Raja Ampat ignited my passion for community-led coral reef conservation that builds on local traditions and practices—and led to my career in helping to save coral reefs.

Fast forward to this past June. I was in Lisbon, Portugal, along with over 5,000 others, at the United Nations Ocean Conference. World leaders, entrepreneurs, youth activists, influencers, and scientists—we had all come together to discuss how to protect the world’s oceans and deliver solutions for responding to climate change, overfishing, and marine habitat loss. My colleagues and I led a session focused on improving the management of existing protected areas and the critical reefs and fisheries that they support. Our session highlighted the 2022 Blue Park Award recipients, recognizing outstanding efforts to protect marine ecosystems. This year, Raja Ampat Islands Marine Conservation Area was one of three winners, along with marine protected areas in the Philippines and Colombia.

The Blue Park Award committee recognized the outstanding success of Raja Ampat’s community-led, collaboratively managed marine protected area network and its dedicated conservation staff, including patrols and scientific monitoring that benefit local villages while promoting stewardship of their marine resources. Raja Ampat is truly a global model for how to do it right, and I felt really proud as I watched Dr. Victor Gustaaf Manoppo, MH, from Indonesia’s Ministry of Marine and Fisheries accept the award on behalf of Raja Ampat. I remembered the community leaders, conservation staff, and government officials I met there more than a decade ago who inspired me to dedicate my life to protecting oceans.

I’m grateful that I’m able to do the work that I do, and for the community of partners who are helping save the world’s reefs. You are all an essential part of this community, and your support is vital to achieving our mission to conserve reefs for current and future generations.

*Elizabeth Mcleod*

**Dr. Lizzie Mcleod**, Global Reefs Lead

# PROTECTING CORAL AND SHELLFISH REEFS



## State of the World's Reefs

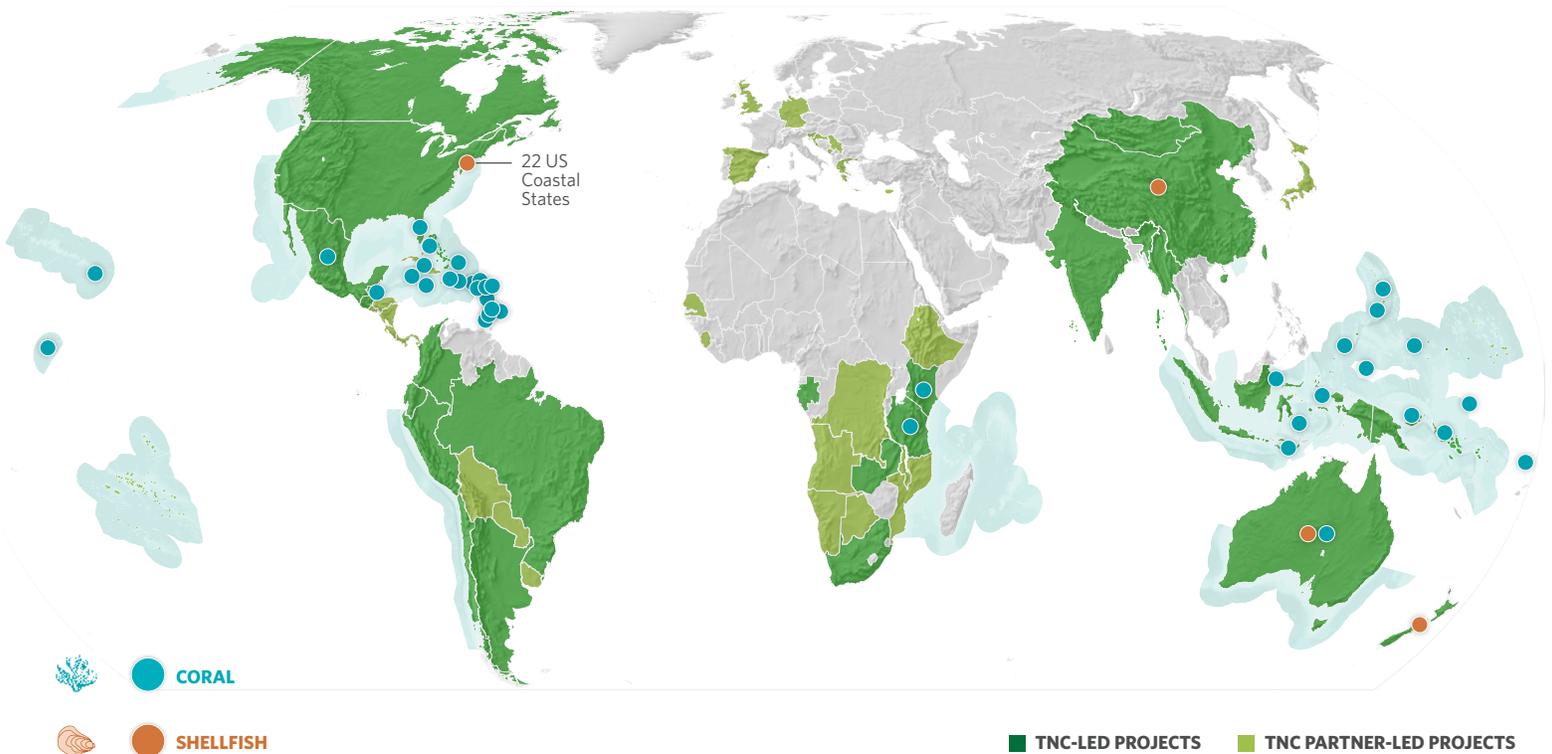
Coral and shellfish reefs are in danger, but the extent of damage varies based on local conditions and whether reefs are being managed effectively. The good news is that some reefs are showing remarkable signs of recovery.

Scientific evidence demonstrates that when coral reefs are resilient and threats are abated, corals can bounce back. A recent survey found that coral reefs have recovered to record levels across much of Australia's Great Barrier Reef. In fact, the reef's northern and central areas currently have the highest amount of coral cover since monitoring began 36 years ago. Unfortunately, most reefs are facing a much grimmer outlook. Today more than half of the world's reefs are degraded from climate change, pollution, coastal development, and overfishing. Scientists estimate that with business as usual, 90% of coral reefs could be gone within our lifetimes.

And it's not just coral reefs that are in great peril—oyster populations are also at an all-time historic low. Erosion from development, wetland loss, pollution from fertilizer runoff, and disease have proved devastating for shellfish. Overharvesting and a steady decline in water quality have also led to greatly diminished oyster reefs around the world. But like corals, oysters have shown that they can recover quickly if given the chance.

Recognizing the importance of coral and shellfish reefs, TNC has set an ambitious goal: to protect 30% of the world's reefs by 2030. We partner with major ocean protection and restoration champions around the world, including the U.S. National Oceanic and Atmospheric Administration, United Nations Environment Program, United Nations Development Program, and many others. Through these partnerships, and by engaging local experts, we are protecting and restoring vital reef areas, developing cutting-edge tools for marine managers, leading trainings on key conservation topics, and designing guidance for protecting and restoring marine habitats that builds on TNC's four decades of expertise in ocean conservation.

## TNC'S CORAL AND SHELLFISH LOCATIONS





TNC's CEO Jennifer Morris conducting a coral reef survey in St. Croix.

## Saving the World's Super Reefs

In January 2022, TNC, Woods Hole Oceanographic Institution and Stanford University launched the Super Reefs partnership to safeguard reefs that are resistant to climate change impacts and can replenish damaged reefs nearby. Our mission is to identify, protect, and grow a global network of climate-resilient Super Reefs to secure the future of coral reefs and the human communities that they support. In the last year, the partnership has:

- Worked with the Marshall Islands Conservation Society and the Marshall Islands Marine Resources Authority to validate a 4D hydrodynamic model for Majuro, Republic of the Marshall Islands. The model was used to predict the location of potential Super Reefs, quantify the levels of heat corals were exposed to during heatwaves in 2014 and 2019, and assess whether Super Reefs could be used to re-seed neighboring reefs devastated by heatwaves.
- Connected with staff and partners in Belize, Hawaii, Indonesia, the Dominican Republic, Palau, and the Marshall Islands to discuss opportunities for identifying new Super Reefs that will support existing coral reef management.
- Trained local students and scientists from Palau Community College and the Palau International Coral Reef Center to conduct heat-stress experiments, create nurseries of heat-resistant corals, and develop a data monitoring system to track corals' responses to warming seas.
- Secured funding from the U.S. National Science Foundation for the Super Reefs Digital Reefs project, which will build virtual models of each Super Reef and share them through a visual platform at [digitalreefs.org](https://digitalreefs.org).

**Left:** Tropical schooling fish in a healthy coral reef, Raja Ampat, Indonesia © Aaron/AdobeStock.  
**Right:** Aerial view of TNC's Virgin Islands Coral Innovation Hub, where scientists are working to restore reefs at a meaningful scale © MJS Visions.

### U.S. Virgin Islands

## Launching a Coral Innovation Hub in the Caribbean

In May, TNC launched our newest Coral Innovation Hub on St. Croix, U.S. Virgin Islands. This center for science and education, which includes a cutting-edge coral lab and nursery, is advancing novel techniques that can restore coral reefs on a larger scale than ever before and with greater long-term impact. The lab will also play a key role in a multi-year program to strengthen coastlines within St. Croix's East End Marine Park by restoring 150 acres of reef area. Using corals grown in the lab, this initiative will fortify coasts to better protect communities against climate-related threats and, thanks to a partnership with the National Park Service, it will expand to other sites across the U.S. Virgin Islands. Together with existing Coral Innovation Hubs in The Bahamas and the Dominican Republic, TNC is mobilizing a network of partners to help the region's imperiled coral reefs before it's too late.



Indonesia

## Identifying “Gold Standard” Marine Protected Areas in Indonesia

Well-managed marine protected areas provide multiple benefits for ecosystem health, fisheries, and human well-being. However, if they fail to meet management objectives, these areas are reduced to so-called “paper parks.” To assess the effectiveness of Indonesia’s marine protected areas, Yayasan Konservasi Alam Nusantara (YKAN), TNC’s affiliate in Indonesia, worked with partners to apply the EVIKA management effectiveness tool across 10 marine protected areas. The tool categorizes protected areas into bronze, silver, and gold status based on indicators of effective management, such as zoning and management plans, infrastructure, and community awareness and participation. Every marine protected area assessed in Raja Ampat received a gold ranking, meaning that the areas are managed sustainably and are benefiting the wider community.

**Left:** A diversity of hard corals thriving on a shallow reef in Misool, Raja Ampat, Indonesia © Alexander Mustard/www.amustard.com. **Right:** Amina Ahmed fishes for octopus on Pate Island, Lamu, Kenya © Roshni Lodhia.

Africa

## Working with Communities to Restore Coral Reefs in Africa

In Kenya and Tanzania, TNC worked with global and local coral restoration experts to help communities restore degraded reef areas and increase coral cover and key fish species within locally managed marine areas. In Kenya’s Pate Island and Kiunga, fishing communities established six new locally managed marine areas, including a pioneering model of temporary octopus harvesting closures that is predominantly led by women. In addition, Kenya Wildlife Service allowed fishing communities to set up locally managed marine areas within government-managed marine reserves, a significant precedent that will provide a model for other coastal communities. Working with TNC’s Reef Resilience Network, a cohort of 58 coral restoration practitioners—including 26 from Kenya and 29 from Tanzania—participated in reef restoration planning and best practices training, including constructing cost-effective artificial reef structures that support community fisheries and improve coastal resilience. By combining local and global expertise, we have created a successful model for scaling up effective reef restoration in the Western Indian Ocean.



Clockwise from top left: An endangered White's Seahorse catches the sun in Chowder Bay, Sydney © Kate Ahmad/TNC Photo Contest 2021; volunteers in a line passing clumps of oysters in Pak Nai, Deep Bay, Hong Kong © Derek Tang/TNC; Tim Henry, owner of Bay Point Oyster Company harvesting oysters on his boat in Little Bay in Durham, New Hampshire © Jerry and Marcy Monkman /EcoPhotography.

Asia Pacific

## Restoring Shellfish Reefs in Asia and the Pacific

TNC is a leader in advancing new science, partnership models, and best practices for shellfish restoration. While only about 10% of Australian shellfish reefs remain, blue mussels, Australian flat oysters, and other species are remarkably resilient—if given the chance to re-establish. One of our signature initiatives is Reef Builder, a shellfish reef program in Australia that is now the nation's largest marine restoration initiative. TNC worked with government, business, and community partners to protect and restore 60 shellfish reefs nationwide, making Australia the first country to recover a critically endangered marine ecosystem. We established new reefs in 13 locations along the Australian coastline—projects with the potential to create more jobs than traditional infrastructure investments across a diverse group of industries, from maritime construction and aquaculture to natural resource management.

TNC's experience in shellfish restoration helped us make the economic and ecological case for similar work in coastal China, where our Global Reefs team helped initiate China's first in-water reef restoration project in Jiantiao Bay, Zhejiang Province. TNC completed this pilot project in 2022, and work will be carried on by provincial institutions and the East China Fisheries Research Institute. TNC also initiated a marine habitat restoration network in China to energize and support the restoration community, promote additional projects, and share lessons learned in other regions over the last two decades.

United States

## Supporting Oyster Aquaculture and Restoration

TNC and partners launched the Supporting Oyster Aquaculture and Restoration (SOAR) program in late 2020 to support oyster farmers by buying unsellable live oysters when the COVID pandemic forced restaurants to close. To date, the program has purchased more than 3.5 million oysters and helped rebuild nearly 40 acres of imperiled native shellfish reefs across 25 restoration sites in the United States. TNC is collating monitoring data to track the program's success in establishing self-recruiting oyster populations. We established a SOAR Shellfish Growers Resiliency Fund that has distributed more than \$1 million to shellfish farmers to catalyze projects that combine aquaculture, conservation, innovation, and diversity, equity, and inclusion. The fund supports 36 projects across 15 coastal states, leading to important collaborations between industry and conservation. For a full list of fund recipients, visit [nature.org](https://www.nature.org).

# EXPANDING THE REEF RESILIENCE NETWORK



For nearly two decades, the Reef Resilience Network has equipped and empowered marine managers around the globe to effectively manage, protect, and restore coral reefs threatened by local and global stressors. To date, the Network has trained 36,000+ reef managers and practitioners, reaching 85% of the 103 countries and territories with coral reefs. Nearly one million people visit [reefresilience.org](https://reefresilience.org) each year for online resources. Highlights of the Network's progress this year include:

## Understanding and Addressing Wastewater Pollution

Wastewater pollution is a growing threat to the health of coral reefs and humans. Although the threat is not new, the lack of attention on wastewater management and monitoring persists globally. The Network hosted a mentored online course for 103 participants from 41 countries and territories to raise the profile of this important issue and build reef managers' skills and capacity to address it. During the mentored course, participants took self-paced lessons, joined interactive webinars with global experts, and participated in discussions. The Network's [Wastewater Pollution Toolkit](#) provides marine managers with the latest science and strategies to address wastewater pollution.



Green Sea Turtle (*Chelonia mydas*)  
© whitcomber/AdobeStock.

## Guiding Sustainable Tourism for Coral Reefs

Leveraging the Network's capacity-building expertise, we are partnering with the Resilient Reefs Initiative (RRI), a global initiative to help UNESCO World Heritage-listed coral reefs—and the communities that depend on them—to adapt to climate change and local threats. Through the RRI, managers from four coral reef sites learned from experts in behavior change, visitor capacity, and sustainable livelihoods during four virtual sessions. The Network collaborated with the Great Barrier Reef Foundation to develop a [Sustainable Tourism Toolkit](#) for reef managers, which provides guidance on managing impacts from tourism and shifting behavior to better meet resilience goals.

*From May 4 – June 8, 2022, the Network hosted a mentored online course on coral reef restoration. The course had:*

453

PARTICIPANTS

85

COUNTRIES & TERRITORIES

7

SELF-PACED LESSONS

3

LIVE WEBINARS

WITH LIVE INTERPRETATIONS  
IN 3 LANGUAGES

English + Spanish + French



# PROTECTING OCEANS AND REEFS



## Making Waves: Women Leaders in Ocean Conservation

True conservation success requires the leadership of women and the next generation of conservation leaders. In July, TNC hosted a [virtual gathering](#) of global women leaders working to restore the health of the world's oceans, including our CEO, Jennifer Morris. The rich discussion centered on the critical importance of tackling climate change, elevating local leadership, and empowering youth to achieve long-term improvements in ocean health. In October, TNC, the Coral Triangle Center, and the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security hosted the first in a two-part series of regional exchanges, focused on women's leadership within the Coral Triangle—the region that holds the world's greatest marine diversity. The exchange highlighted the innovations and actions taken by women in the region, including the story of [KAWAKI](#), a local women's organization working to protect sea turtles and conduct conservation education programs in the Solomon Islands.

**Above:** Healthy and diverse coral reef at Palmyra Atoll © Ian Shive.

## SPOTLIGHT: Mary Kay Inc.



In 1990, Mary Kay and TNC announced a partnership. Mary Kay's conservation efforts started off close to home, focusing on protecting and preserving the natural resources of Texas. Over the last 32 years, Mary Kay has supported hundreds of projects and served as a vocal advocate for organizations to be proactive and make substantive environmental improvements.

Mary Kay has continued to generously support TNC with an expanded focus on oceans work around the globe, including conserving coral reefs and restoring important shellfish reefs in Asia and the Pacific. In addition to helping TNC protect reefs and restore ocean health, Mary Kay is also bolstering the organization's efforts to uplift women's leadership to make their communities more resilient.

With half of the Earth's coral reefs and 85% of shellfish reefs lost to date, TNC and Mary Kay are urgently working together to protect and restore remaining reefs. "Mary Kay's founder, Mary Kay Ash, believed that there are three types of people in this world: those who make things happen, those who watch things happen, and those who wonder what happened," said Deborah Gibbins, Chief Operating Officer at Mary Kay. "We're honored to join forces with the first type of people to develop the tools and resources needed to protect our oceans for generations to come."

# THANK YOU



Your support of The Nature Conservancy's Global Reefs program enables our team to protect and restore critical coral and shellfish reefs around the world in partnership with communities, governments, NGOs, researchers, and the private sector.



For more information please email:  
[globalreefs@tnc.org](mailto:globalreefs@tnc.org) or visit [nature.org](https://www.nature.org)

