A COLLABORATION TO CONSERVE OUR CORAL REEFS

Highlights of a 12-year partnership between The Nature Conservancy, NOAA Coral Reef Conservation Program, and U.S. Coral Reef Jurisdictions

September 2021

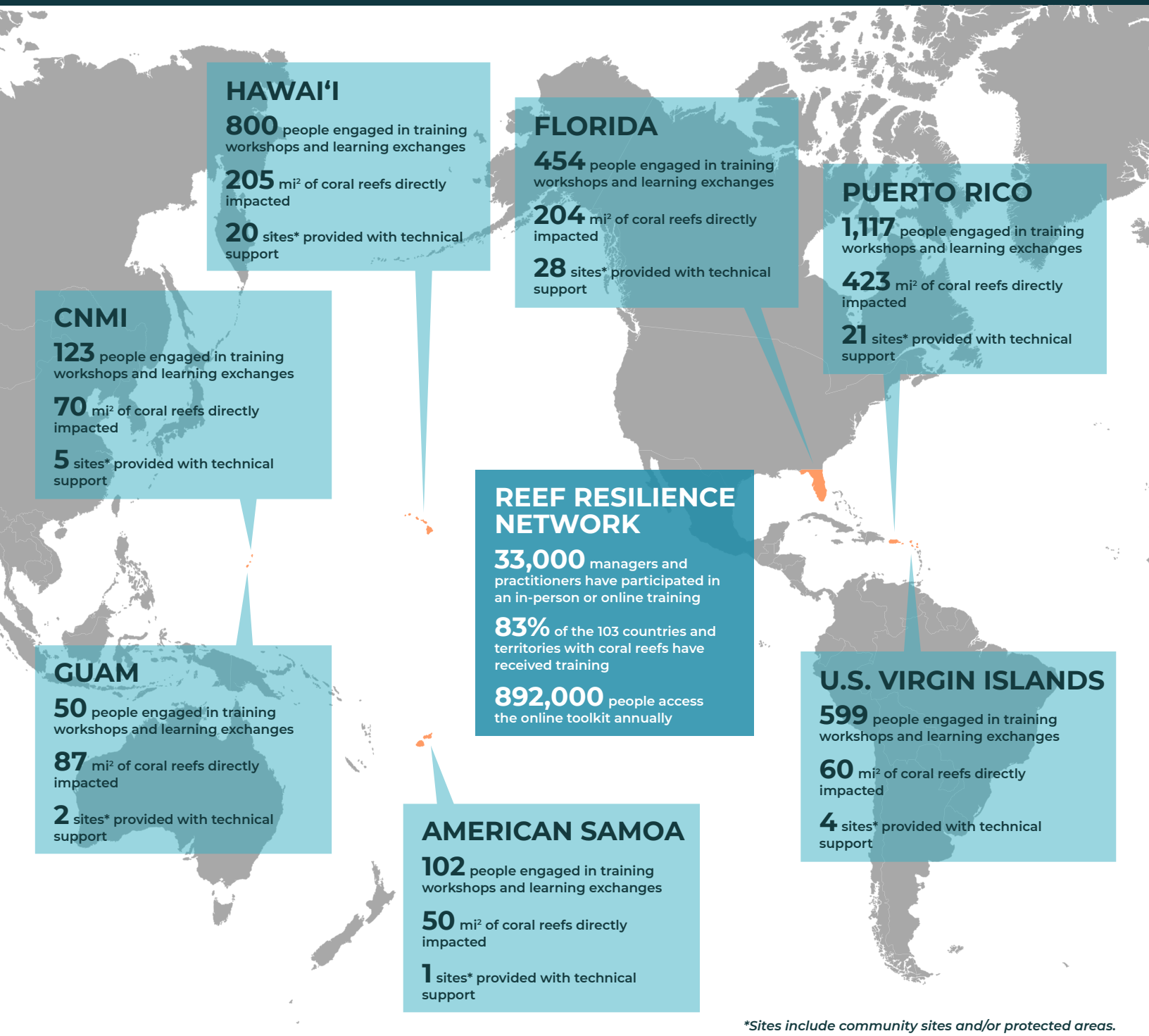
The Nature Conservancy

U.S. All Islands Coral Reef Committee

NOAA CORAL REEF CONSERVATION PROGRAM

Highlights of a 12-year Partnership between The Nature Conservancy, the NOAA Coral Reef Conservation Program, and the U.S. Coral Jurisdictions.

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions completed a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Efforts focus on building the capacity of resource management agencies to reduce reef threats and improve resilience. Successful strategies are shared and amplified through trainings and connecting coral reef managers globally.



HAWAIʻI

800 people engaged in training workshops and learning exchanges

205 mi² of coral reefs directly impacted

20 sites* provided with technical support

FLORIDA

454 people engaged in training workshops and learning exchanges

204 mi² of coral reefs directly impacted

28 sites* provided with technical support

PUERTO RICO

1,117 people engaged in training workshops and learning exchanges

423 mi² of coral reefs directly impacted

21 sites* provided with technical support

CNMI

123 people engaged in training workshops and learning exchanges

70 mi² of coral reefs directly impacted

5 sites* provided with technical support

REEF RESILIENCE NETWORK

33,000 managers and practitioners have participated in an in-person or online training

83% of the 103 countries and territories with coral reefs have received training

892,000 people access the online toolkit annually

GUAM

50 people engaged in training workshops and learning exchanges

87 mi² of coral reefs directly impacted

2 sites* provided with technical support

U.S. VIRGIN ISLANDS

599 people engaged in training workshops and learning exchanges

60 mi² of coral reefs directly impacted

4 sites* provided with technical support

AMERICAN SAMOA

102 people engaged in training workshops and learning exchanges

50 mi² of coral reefs directly impacted

1 sites* provided with technical support

**Sites include community sites and/or protected areas.*

AMERICAN SAMOA

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for American Samoa's reefs.

Photo: Ofu Island (NOAA Fisheries/Evan Barba).

Where We Work

American Samoa is an archipelago in the central South Pacific Ocean comprised of five volcanic islands (Tutuila, Ta'u, Ofu, Olosega, Aunu'u, Nu'utele) and two coral atolls (Rose Atoll and Swains Island). The coral reefs and coasts of American Samoa are home to over 2,700 species of Indo-Pacific corals, invertebrates and fish. However, the reefs face negative impacts from local sources of pollution and sedimentation. Additionally, severe natural disturbances, including a major outbreak of crown-of-thorns starfish, several bleaching events and hurricanes, have impacted reef resources over the past several years.

Our Approach

Coral reef conservation in American Samoa is advanced by providing technical assistance and building the capacity of local government and community partners to support management efforts that increase the resilience of local reef systems. Partnership efforts focus on developing and delivering trainings to boost the effectiveness of marine protected areas (MPAs), monitoring efforts, strategic planning and advisory group development, as well as foster shared learning through regional learning exchanges.

Our Accomplishments

Our work has directly benefited approximately 50 square miles of coral reef habitat. Partnership efforts have provided technical support to 14 agencies and organizations, resulting in the training of 102 individuals on reef resilience principles.

- **Developed strategic communications plans** with eight agencies for climate change preparation projects to increase the effectiveness of work planned with local communities.
- **Completed and formally adopted a Conservation Action Plan (CAP)** with the village

of Faga'alu to assess the main threats to coral reef resources and develop strategies to reduce impacts from those threats.

- **Trained 35 resource managers and users in data collection and stock assessment formulas.** Participants were provided training on collection, life-history data processing and stock assessments (See Success Story on page 5).
- **Trained 22 practitioners to create and manage effective projects**. Participants learned how to manage project teams to execute coral conservation work.
- **Facilitated an Organizational Management Workshop for the American Samoa Coral Reef Advisory Group (CRAG)**. Members and Staff assessed how CRAG functions and developed a plan for improving how CRAG supports coral reef management in American Samoa. In 2019 additional support was provided to assess plan execution and prioritize next steps for action.
- **Hosted a collaborative workshop on reef resilience principles**—the first of its kind in American and Western Samoa—for 32 individuals representing 13 groups. The workshop sparked a productive discussion on how a marine protected area (MPA) network could be created in the Samoan archipelago and developed recommendations to more efficiently implement the Two Samoas Initiative, a partnership to promote conservation of the shared ecosystems of the Samoan archipelago.
- **Coordinated and implemented learning exchanges to share successes and lessons learned** between partners, foster better understanding of community-led marine stewardship and catalyze on-the-ground action.
- **Managers and practitioners from Micronesia visited American Samoa to share their experience implementing the Micronesia Challenge**. Participants were exposed to the concept of MPAs as mixed-use areas, community-based management approaches and the value of incorporating traditional knowledge in the management process.

Photo above: Ofu and Olosega with Ta'u in the distance (Hideyo Hattori); Photo below: Coral head in the lagoon at Rose Atoll (NOAA Fisheries/Louise Giuseffi).

SUCCESS STORY: Using Data-Poor Stock Assessments to Improve Coral Reef Fisheries Management

Coral reef fisheries are a central component of Pacific Island societies. The management of these dynamic multi-species fisheries is complex, and further hindered by limited local capacity for science-to-management translations.

Limited Data Shows a Need for More

While studies of coral reef fisheries in American Samoa are limited, anecdotal evidence suggests an undesired effect on stocks, especially on more vulnerable species. Additional studies based on fisheries-independent datasets indicate a lower-than-expected fish biomass, especially among medium and large-size species, with direct links between decreasing herbivore fish biomass and coral reef resilience (Fenner et al., 2008; Houk et al., 2010).

The Partnership and Training Increase Capacity

Through the Partnership, thirty-five resource managers and users in American Samoa were provided training on collection, life-history data processing and stock assessments. Equipped with these new skills, managers and fishers worked together to conduct stock-assessments of three target species identified as priorities by local partners. These species were: *Naso lituratus* (Orangespine Unicornfish/ili‘ilia); *Lethrinus rubrioperculatus* (Spotcheek Emperor/ fiola pa‘o‘omumu); and *Chlorurus japanensis* (Palecheek Parrotfish/fuga-alosama).

Data Collection Goes to Market

Samples from each of the prioritized species were collected from local markets. Otoliths and gonads from each fish were processed to assess its age and growth. Participants then used the life-history information of each species to conduct formal stock assessments using the Froese Sustainability Indicator assessment. The results suggested the species studied had healthier stocks and helped to guide management decisions.

Success Leads to More Good Work to Come

The positive impacts of this project were many. In addition to providing critical skills to American Samoa managers, the project rallied the active participation of fishers and laid the foundation for more robust data collection and a more collaborative and inclusive fisheries management practice.

Based on this early success, local managers hope to expand this work to include other fish species in the near future. Armed with these skills and new data, managers and fishers can establish sustainable harvesting levels to ensure sustainable fisheries and healthy ecosystems.

Photos above, left to right: participants extracting the otoliths of the three selected species; learning how to histologically stage gonads (Cassie Pardee).

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for CNMI's reefs.

Photo: Robbie Green.

Where We Work

The Commonwealth of the Northern Mariana Islands (CNMI) is comprised of 14 islands extending over 370 miles in the western Pacific. Coral reefs are an important part of CNMI's cultural heritage; unfortunately, a growing population and increased development have exacerbated threats to coral reef ecosystems, leading to reduced coral health. These effects are most noticeable on the island of Saipan, where approximately 90 percent of CNMI's population resides.

Our Approach

Partnership efforts focus on providing technical support and capacity building for local staff to conduct watershed planning and prioritization of coral reef management efforts; secure sustainable financing for marine protected areas (MPAs); increase effectiveness of monitoring efforts; engage youth in conservation; and support local NGO advisory group development. To amplify conservation momentum in the region and foster shared learning, the partnership also supports regional learning exchanges and activities conducted within the framework of the Micronesia Challenge, a commitment to conserve at least 30 percent of nearshore marine resources and 20 percent of terrestrial resources by 2020.

Our Accomplishments

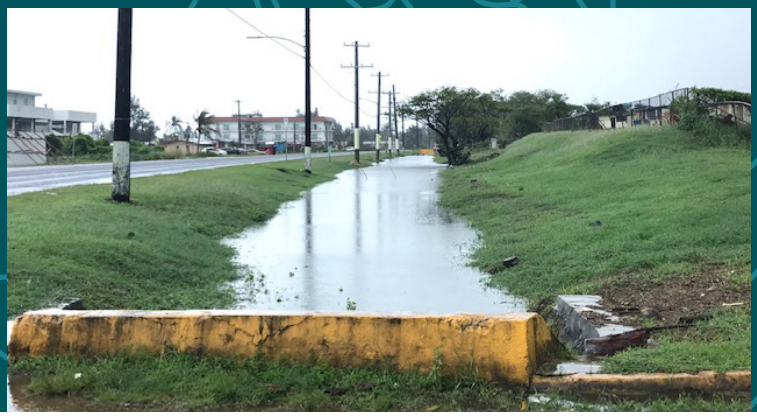
Partnership efforts have directly benefited approximately 70 square miles of coral reef habitat, provided 5 sites with technical support and resulted in the training of 123 people.

- **Completed and formally adopted two Conservation Action Plans (CAPs)**. A collaborative, science-based approach was used to identify and preserve priority coral resources

Photo: Coastline of Garapan, Saipan (Robbie Green).

and measure these efforts at two sites (Talakaya Watershed and Garapan). Plan implementation has begun at both sites.

- **Supported the exploration of a sustainable financing mechanism** to support conservation as part of the broader Micronesia Challenge for a regional endowment. The endowment will provide a sustainable financing source that supports the preservation of the marine resources that are crucial to the survival of Pacific traditions, cultures and livelihoods.
- **Completed an inventory and review of social science work** conducted in CNMI to inform the development of socioeconomic monitoring protocols and a plan which allows for a unified approach to socio-economic monitoring across CNMI.
- **Supported enhanced capacity of non-governmental organizations (NGOs)** by providing five years of technical assistance through board training, strategic planning and the development of fundraising plans for local NGOs.
- **Completed a threat assessment for the Managaha Marine Conservation Area** to determine priorities for conservation efforts.
- **Completed a social marketing campaign** to reduce poaching in the Managaha Marine Conservation Area. The campaign increased knowledge sharing among community members about the historical, cultural and economic significance of the area to increase community support for fishing regulations.
- **Facilitated the development of strategic coral reef management priorities with coral reef management agencies**. Potential funders were encouraged to invest in activities outlined in the CNMI 2019-2029 Coral Reef Management Priorities and expand partnerships to build common coral reef conservation goals.
- **Developed the Garapan Integrated Watershed Management Plan (GWMP)** which will help guide CNMI's efforts to maintain or improve the Garapan Watershed over the next five years. (See Success Story on page 8).
- **Migrated twenty-plus years of historical coral reef monitoring data into the Micronesia Challenge Regional Database**, an online platform that provides safe, secure, and standardized data to partners and facilities our shared data analysis pipelines across the region.



SUCCESS STORY: Management Plan will help guide CNMI's efforts in Garapan Watershed

The Garapan watershed is a sub-watershed of the West Takpochao watershed on Saipan. The coastal waters off Garapan provide critical mangrove, seagrass, and reef habitat for important marine species, and also provide critical protections for Saipan's socio-economic hub, by buffering storm surges and extreme rain events. Due to projected increases in these events due to climate change, protecting and maintaining the Garapan watershed is a priority. In 2017, Commonwealth and federal stakeholders identified the need to transition all existing Conservation Action Plans to IWMPs. Thus, the Garapan Integrated Watershed Management Plan (GWMP) was developed in 2020. It's primary objective is to consider key watershed benefits and identify ways to maintain or improve them over the next five years.

Building the Plan

Over 40 stakeholders from CNMI government agencies and NGO's met to discuss and complete watershed management planning activities for the Garapan watershed and other priority areas. During this workshop, participants reviewed required components of watershed management plans to meet EPA standards, updated core components of the Garapan CAP, and updated modeling and monitoring results.

Additional input was provided after the workshop through the CNMI Watershed Working Group and meetings with key implementation partners in the plan. The Horsley Witten Group also conducted pollutant load modeling to identify key strategies to reduce pollutant loads. The resulting GWMP is a combination of both the workshop and model outputs.

Key Findings

The GWMP identifies the main impairments and sources of threat to the Garapan watershed as bacterial contamination from human and animal waste; non-bacterial polluted runoff from fats, oils, and grease (FOG); invasive species that threaten critical habitat due to inadequate permitting; native wildlife population decline; and illegal harvest. To address these impairments, the plan proposes to:

1. Improve lagoon water quality, through improved management, infrastructure, and development planning.
2. Improve management of Critical Habitat (i.e., wetlands, mangrove, seagrass, reef, forest) through invasive species prevention and management, and enforcement of existing regulations.
3. Foster sustainable and resilient development through improved planning and permitting processes, inter-agency collaboration, and community involvement.

The GWMP will help guide CNMI's efforts to maintain or improve the Garapan Watershed over the next five years. In doing so, the plan will also protect and preserve Garapan's important role as home to CNMI's only recreational and commercial marina and only hospital and the wide range of benefits it provides to the people of CNMI. The resulting IWMP is a combination of both the workshop and model outputs and an example of successful partnerships among multiple agencies and organizations. The IWMPs will now guide the work of at least nine different government agencies in CNMI.

Photo above left: Participants in the Garapan Watershed Management Plan workshop review a map; Photo above right: Blocked drainage ditch alongside the road in Garapan, Saipan (Meghan Gombos).

FLORIDA

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for Florida's reefs.

Photo: Carlton Ward Jr.

Where We Work

Florida's bank-barrier reef system supports 1,400 species of marine plants and animals, including more than 40 species of coral and 500 species of fish. This chain of reefs stretches from the remote Dry Tortugas up through the areas offshore of Monroe, Miami-Dade, Broward, Palm Beach and Martin counties. These reefs are as much a part of South Florida's cultural landscape as they are a foundation of the biological and ecological seascape. From the earliest Floridians, people have derived sustenance from the sea. Florida's coral reefs generate $6.3 billion in local sales and provide 71,000 jobs annually.

Our Approach

Building on what has worked in other regions, Florida is working to develop and promote resilience-based management strategies to enable its coral reefs to adapt to global climate change and withstand local threats. Projects engage a diverse set of partners to improve reef health and enhance the sustainability of reef-dependent commercial and recreational enterprises.

Our Accomplishments

Our work has directly benefitted 204 square miles of coral reef habitat. Partnership efforts have supported the comprehensive collection of coral reef monitoring data across the Florida Reef Tract and the training of 410 people in coral reef survey methods, resulting in 3,379 sites surveyed. This is the longest-standing cross-jurisdictional approach to informing reef management in the state.

- **Developed the "Florida Reef Tract Coral Bleaching Response Plan"** to provide a strategic approach for monitoring bleaching and other events, as well as protocols for early warning, impact assessment, communications and management actions.
  - » Coordinated up to 14 survey teams of scientific divers to conduct up to 389 coral

reef surveys annually to monitor and assess bleaching. In 2014, survey results showed severe bleaching from Dry Tortugas through Biscayne National Park, making it the most significant coral bleaching event since the Florida Reef Resilience Program began in 2005. In 2016, surveys showed substantially lower levels of bleaching; however, high disease prevalence and disease mortality was recorded at numerous sites, leading to adaptation of monitoring protocols for better documentation of coral disease.

- Post Hurricane Irma, survey methods were utilized to determine impacts on coral reefs, resulting in the prioritization of reefs for rescue and stabilization efforts.
- Monitoring protocol has now been modified to help in the response efforts to Stony Coral Tissue Loss Disease. Surveys help to identify where the disease is present, quantify the severity of the disease at each site, and most recently to identify signs of recovery through the addition of juvenile surveys.
- Designed and supported the successful transfer of Florida Reef Resilience Program (FRRP) Disturbance Response Monitoring (DRM) effort to the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute (FWRI). Annual DRM surveys, previously coordinated by The Nature Conservancy, have been incorporated into the state's monitoring program to more firmly establish linkages between the monitoring information and reef management actions.

- **Provided coordination and technical support to develop, inform, and implement two public planning processes to improve the management of Florida's coral reefs**.
  - Collected, and provided decision makers and stakeholders access to, reef tract-wide data to increase effective, comprehensive, science-based on-the-ground management efforts in support of Our Florida Reefs.
  - Collaborated with state partners to support the analysis of resilience across the Florida reef tract. Recommendations from the summary report were shared with local partners.
- **Provided coordination, technical support, and interagency communications for a spatially explicit modelling and mapping effort describing reef fish biomass at 1 ha resolution for the entire Florida reef tract**. Results are available on TNC's Ocean Wealth data portal and have been co-presented with Florida International University at public forums and one-on-one meetings with public agencies. See www.OceanWealth.org.
- **Provided coordination and dissemination of the "Respect Our Reefs" communications campaign** which resulted in 681,056 digital media impressions and 3,076 clicks to learn more about the campaign by users with interests in fishing and diving in Florida.

Photo above left: Respect Our Reef Table at Miami International Boat Show (Fran Perchick); Photo above right: Diver in Dry Tortugas (Jennifer Adler).

SUCCESS STORY: Modeling and Mapping Fishing Impact and the Current and Potential Biomass of Coral-Reef Fishes in South Florida

Florida's coral reef fish species are ecologically and culturally important as well as economically valuable. Many of these fish populations suffer from fishing pressures and all are subject to habitat loss or degradation associated with multiple threats impacting reefs and other habitats.

A Need to Understand Crucial Ecosystem Relationships

As the concept and practice of ecosystem-based fishery management matures, state and federal fishery managers are becoming increasingly aware of the critical relationships between fish populations and the reefs and other habitats on which they rely.

Despite this increase in awareness, basic questions about these relationships remain. These questions include:

- How much fish biomass can a given area of coral reef produce?
- What if that area were subjected to a different amount of fishing pressure than at present?
- What if that area were in a less degraded condition?

Providing initial answers to these questions was the genesis of this project led by our partners at Florida International University.

A Two-Phase Approach

Phase 1 of the project focused on modeling and mapping fishing impact and current fish biomass, and assessing the potential benefits of conservation and management measures. For example, it identified the potential biomass increase on a reef following reduction of fishing pressure or increasing reef rugosity via active restoration.

Phase 2 allowed for further refinements including modeling subsections of the reef system (e.g., Biscayne National Park, Middle Florida Keys, Dry Tortugas Region), and individual fish species.

Results Provide Insights that Lead to Better Decision-Making

The models and resulting maps offer key insights to assessing the potential benefits and trade-offs of conservation and management investments. They also provide new information on fish biomass and fishery impacts for areas where there was little data. Armed with this vital information, managers were able to set more realistic expectations for area-based management outcomes and make better restoration management decisions.

According to John Hunt, Program Administrator for the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, "*This model is a great step toward understanding and predicting the potential for fish populations to change as coral reef restoration expands throughout Florida. Its use will also help the restoration managers determine where added site-based management will maximize the restoration actions.*"

To explore the data, visit the Coral Reef Fisheries app on www.OceanWealth.org.

Photo above left: Florida Keys (NOAA/Matt McIntosh); Photo above right: Red grouper (NOAA/Greg McFall).

GUAM

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for Guam's reefs.

Photo: Tumon Bay (NOAA Fisheries/James Morioka).

Where We Work

The waters of Guam are home to 5,000 species of marine organisms, many of which rely on healthy coral reefs for survival. In Guam's nearshore waters, the combined area of coral reef and lagoon is approximately 26 square miles—nearly 13,000 American football fields. Guam's coral reefs are estimated to be worth $127 million per year, making them crucial to the economic, cultural, political and social viability of Guam.

Our Approach

Partnership efforts focus on providing technical support and capacity building for local staff to conduct watershed planning and prioritization of coral reef management efforts; increase effectiveness of monitoring efforts; and support local NGO advisory group development. To amplify conservation momentum in the region and foster shared learning, the partnership also supports regional learning exchanges and activities conducted within the framework of the Micronesia Challenge, a commitment to conserve at least 30 percent of nearshore marine resources and 20 percent of terrestrial resources by 2020.

Our Accomplishments

Partnership efforts have directly benefited approximately 87 square miles of coral reef habitat, provided 2 sites with technical support and resulted in the training of at least 50 people.

- **Completed and formally adopted Conservation Action Plans (CAPs) at two sites** (Cetti Bay and Manell-Geus Watershed). Plans resulted in increased community awareness and restoration efforts in the upper watersheds, including invasive species removal efforts targeting bamboo and invasive algae on the reefs.
- **Trained 30 government resource managers to communicate the potential impacts of climate change** to facilitate action by local agencies and stakeholders and reduce Guam's vulnerability to climate change and other threats.
- **Trained nine resource managers in effective project development and team management** to improve execution of coral conservation work throughout Guam.
- **Held a learning exchange for fishers from Guam** to learn about alternative management approaches being used successfully across the Micronesia region. As a result, two attending fishermen went on to establish the Humåtak Community Foundation, a community-based conservation organization (See Success Story on page 14).
- **Supported the enhanced capacity of local nongovernmental organizations** through facilitation and completion of a needs assessment, strategic planning development and support for the Humåtak Community Foundation.
- **Five Guam youth attended a learning exchange in Palau** to increase awareness and understanding of community-based resource management.

Photo above: Chevroned butterflyfish; Photo below: Black and white humbug dascyllus and blue-green chromis (NOAA/David Burdick).

Photo: Snorkelers wading (NOAA/Valerie Brown).

SUCCESS STORY: Humåtak Community Foundation

Jesse and Joe Quinata are brothers who grew up in Umatac, Guam on land that has been in their family for generations. They have fished their whole lives and have seen the ocean in Guam change. When the brothers go fishing, they catch only about two fish in four hours—much less than the old days. "People don't use the same practices," Jesse explains, "or fish for the same reasons. Fishing in Guam is now economic."

Inspiration from a learning exchange

To learn what might be done to improve fishing practices and restore fish populations in Guam, Jesse and Joe attended a learning exchange in Palau supported by the Partnership. There, the brothers had the opportunity to visit one of Palau's many marine conservation areas. Bobbing offshore in a small fishing boat, the group spoke about conservation as they caught one fish after another. A Palauan host explained, "The real fisherman is not the fisherman who catches a lot of fish. It's the fisherman who understands the seasonal changes, the ethics of conservation and the whole process about fishing." Joe reflects on how fishing in Palau feels different: "In Palau, fishermen value traditional ways. They've been conserving fish for years, and because of that they have plenty."

Inspired by Palau's abundance and approach to resource management, Jesse and Joe established a conservation organization for their village—The Humåtak Community Foundation. The Foundation promotes land and water conservation as part of the community's cultural heritage.

"We're celebrating what we have and working toward conserving for our kids and our kids' kids," Joe says. He points toward a lone fisherman standing knee-deep in the bay where the brothers grew up, "I want to be able to have my kids do what that man's doing...fishing," he continues.

A vision of a better forever

Since attending the learning exchange in 2011, Jesse and Joe have continued building the Foundation to promote their vision of a better forever—Nihi ya ta na' maolek mo'na para famagu'on-ta, as they say. The Foundation has implemented various projects and programs to support marine conservation in Guam, such as the Umatac Coral Reef Ambassadors movement, which blends traditional beliefs with environmental values and provides the community with life-long learning experiences to promote awareness, teamwork and a future-focused mindset. They've also created the Humåtak Tree Planting Legacy Program which protects the health of marine ecosystems by mitigating land-based pollution and focuses on maintaining the balance between current needs for natural and cultural resources and the obligation of sustaining resources for future generations.

But they're not stopping there, Jesse and Joe have even larger ideas. They plan to open the Humåtak Heritage-Based Community Charter School, "the school without walls," as Joe calls it. Here, science will be learned at the mountain ridges, riverbeds and coastal reefs instead of in classrooms. Students will learn skills necessary to become contributing citizens, life-long learners and perhaps the next generation of conservationists.

HAWAIʻI

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Photo: Kipahulu, Maui (Alana Yurkanin).

Where We Work

Hawai'i's reefs provide ecological, cultural and economic benefits to local communities, and are valued at more than $2 billion a year for fishing, tourism activities, and flood protection. The islands of Maui Nui–Maui, Moloka'i, Lana'i, Molokini, and Kaho'olawe–have some of the largest and healthiest coral reefs in the state. But these natural treasures are threatened by land-based sediments and pollutants, overfishing, overuse, invasive species and climate change, causing a 90 percent decline in some of Hawai'i's most valuable nearshore fisheries and reducing live coral cover on some reefs by up to 40 percent. In 2015, Hawai'i experienced unusually high ocean temperatures and the first statewide coral bleaching event in its history, with some reefs experiencing up to 90 percent coral mortality. Impacts from rising sea surface temperatures, sea levels and acidification are predicted to intensify as the climate continues to change. The pace and scale of our conservation efforts must increase to meet the need to reduce local stressors to reefs and Hawai'i's goal of effectively managing 30 percent of nearshore waters by 2030.

Our Approach

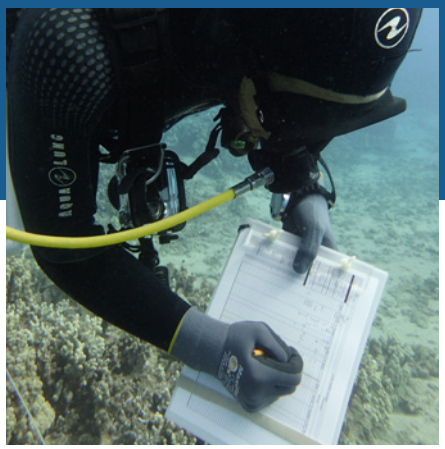
Since 2001, The Nature Conservancy's Hawai'i marine program has been building local community capacity to protect and restore coastal and marine resources and ensure conservation results endure. We support community partners through strategic conservation planning, science-based monitoring and research, direct management of local threats, strategic communications and outreach, and community engagement for improved local management. Our collective conservation work is grounded in Hawai'i's rich traditional knowledge and history of sustainable resource management. This accessible and participatory approach has resulted in increased community capacity and public support for improved marine resource protection.

Our Accomplishments

Our work has directly benefited more than 200 square miles of coral reef habitat at more than 20 sites. Partnership efforts have provided training and technical assistance for more than 800 individuals, developed 10 new management

plans to improve coral health and supported 14 organizations directly and through regional networks.

- **Established the Maui Nui Makai Network (Network)**, which is helping to increase capacity for effective co-management with the State. The Network is now leading a coalition of community groups to create a collaborative, regional plan for marine resource management across east Maui.
- **Co-authored the Malama I Ke Kai: Community Action Guide** to help groups successfully undertake community-based management of coastal and marine resources. The Guide integrates Native Hawaiian practices and values with contemporary conservation processes, resulting in a robust and culturally appropriate 4-step process for creating and implementing community-based management plans.
- **Developed 10 site-based conservation action plans (CAPs)** in partnership with the State Department of Land and Natural Resources for existing marine life conservation districts and community areas that harbor beloved reefs where people live and work. The plans identify conservation actions and traditional Hawaiian practices that can be taken to address threats to coral reefs.
- **Completed reef and reef fish baseline monitoring at eight Maui sites and established the most comprehensive baseline in the state at Ka‘ūpulehu on Hawai‘i island**. The data are actively informing management efforts at these high priority sites.
- **Developed a sustainable finance plan** in collaboration with the State of Hawai‘i’s Division of Aquatic Resources (DAR) for the Molokini Shoal Marine Life Conservation District (MLCD). The plan serves as a model that DAR is using to increase funding for management of this and other State marine protected areas.
- **Launched the South Kohala Coastal Partnership**, which has galvanized more than 50 public, private and community groups who are implementing projects to abate threats to the region’s coral reefs and mitigate the impacts of climate change across an area the size of Moloka‘i.
- **Published the *Atlas of the Reefs of West Maui***, a first of its kind report compiling 20 years of data. Our analysis shows where reefs are doing well and where they are in decline to inform reef management and restoration efforts.
- **Assessed the effectiveness of voluntary rest areas for ‘opihi (*Cellana exarata*)**, a prized intertidal fishery species. The study found ‘opihi size and abundance increased in both the voluntary no-take areas and in many areas downcurrent.



SUCCESS STORY: Atlas of the Reefs of West Maui—Helping natural resource managers and planners work smarter, faster, better.

Over the past 20 years, researchers have documented significant declines in the health of West Maui's coral reefs and reef fisheries—resources vital to the area's people, culture and economy. Local communities have also noticed the declines and are collaborating with State agencies to improve management of these resources.

The Atlas provides the groups and agencies with a shared understanding of when and how reefs and fisheries have changed, so they can develop targeted and effective strategies to reduce local pressures and increase the resilience of these vital resources.

A Snapshot of 20 Years of Change

The Atlas of the Reefs of West Maui (Atlas) is a valuable new resource that summarizes scientific data documenting changes in coral reefs and marine life to inform management strategies in West Maui.

The first of its kind, the Atlas delivers a wealth of data through efficient collections and summaries. It reflects data collected by five public and private organizations over 20 years (1999-2019) from 2,600 sites spanning 23.6 miles (38 km) of coral reefs and other hardbottom areas.

Extending from the Pali Tunnel on Honoapiʻilani Highway to Līpoa Point north of Honolua Bay, the Atlas documents changes in abundance, biomass, and diversity of marine life. This information is helping marine managers develop effective strategies to address threats to reef health from a growing population (e.g., land-based sources of pollution, unsustainable harvest of ocean resources) and warming climate (e.g., rising sea levels, temperatures, ocean acidification).

Informing Planning and Modeling

Developed at the request of Hawai'i's Division of Aquatic Resources (DAR), the Atlas is already being used by State and community partners who are developing much-needed Conservation Action Plans with targeted strategies to reduce local pressures and increase resilience at two popular tourist destinations—the Honolua Bay Marine Life Conservation District and an eight-mile area surrounding Lāhaina.

"The Atlas provides a clear picture of the changes in West Maui's reefs and fish populations," explains DAR Biologist Russell Sparks. "Understanding these changes is helping us and our community partners develop effective management plans to restore these resources and achieve our shared goal of effectively protecting 30% of nearshore areas by 2030."

The Atlas is also contributing to USGS 3D ocean modeling and US Coral Reef Task Force efforts.

Photos on previous page: (top) Members of the Maui Nui Makai Network work in the loʻi to remove weeds and learn about kalo (TNC/Manuel Mejia); (below) Kipahulu ʻopihi (TNC/Jill Wirt).

Photos on this page: (above left): Diver records reef data during fish and benthic surveys in West Maui (TNC/Ryan Carr); (above right) Conservation Action Planning group conducts a site visit at Honolua Bay, Maui (TNC).

PUERTO RICO

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for Puerto Rico's reefs.

Photo: Reef at La Parguera (NOAA).

Where We Work

Puerto Rico's coastline is home to more than 1,930 square miles of shallow coral reef ecosystems, including mangrove forests and seagrass beds. These habitats support more than 677 species of fish and 237 species of coral. However, over 93 percent of Puerto Rico's coral reefs are threatened by sedimentation, algal growth, overfishing, bleaching and climate change.

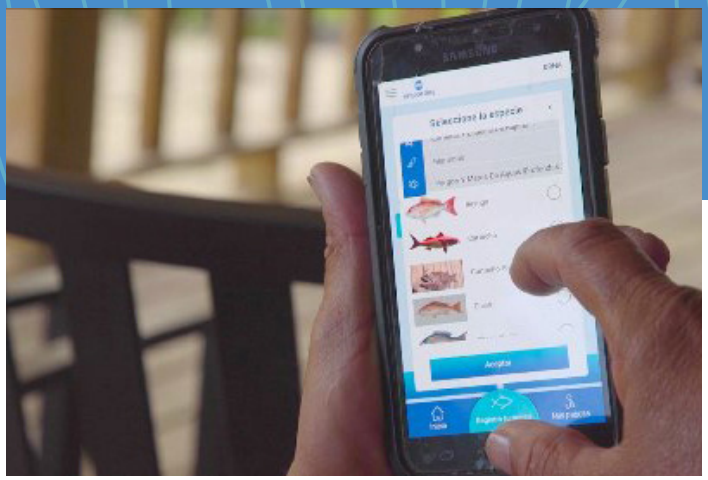
Our Approach

Coral reef conservation efforts in Puerto Rico build on successes in neighboring Caribbean islands and foster collaboration among stakeholders at the federal, regional, and local levels to ensure ocean habitats are protected for the benefit of people and nature. Effective management of marine and coastal protected areas is achieved through policy analysis and support of cooperative management efforts with local communities and stakeholders. Additionally, science-based decision-making tools, including new technologies to determine sustainable harvest levels, monitor catch sizes, and drive accountability, have been developed to ensure sustainable management of key fisheries.

Our Accomplishments

Our work has directly benefited approximately 423 square miles of coral reef habitat. Partnership efforts have engaged 1,117 people in training workshops and learning exchanges, and provided 21 sites with technical support.

- **Developed the first prototype for an electronic reporting application specific to Puerto Rico**. This technology supports more informed, timely and effective management decisions for reef fisheries.
- **DNER officially adopted the electronic Reporting System (eReporting), and more than 700 commercials fishers are registered on it.** The Secretary of DNER signed an administrative



order to formally adopt the eReporting mobile app as one of the official ways that the commercial fishers can report the fisher's daily catch required by local and federal regulations.

- **Supported training of fishers in responsible fishing practices**, including regulations, license and permit requirements, through the development of the Commercial Fishers Education Program Guiding Document.
- **Developed human-use maps and GIS geodatabase for Culebra Island** to identify human stressors to coral reefs. The spatial information developed supports integrated coastal zone management efforts. All data is available to managers and the general public.
- **Puerto Rico joined the Caribbean Challenge Initiative (CCI) by committing to conserve at least 20% of nearshore marine environments as national marine protected areas by 2020** and create a National Conservation Trust Fund. Nature Conservancy staff advised the Puerto Rican CCI delegation, provided technical support to draft the Puerto Rico Declaration, participated in key meetings leading to a summit, and hosted the first ministerial CCI meeting. The PR Natural Protected Areas Trust Fund is currently being developed and will be fully functional by 2019.
- **Provided technical support to develop the first document to assess Puerto Rico's vulnerability to climate change** ("Puerto Rico State of the Climate Report"). Based on this report, the governor of Puerto Rico issued five executive orders which mandate all public agencies to create climate adaptation plans for public infrastructure.
- **More than ten restaurants joined us in the Reef Responsible Initiative** to raise awareness about the vital role restaurants, consumers, and fishers can play in the fight to save coral reefs by choosing sustainable seafood. This initiative is a collaborative effort with DNER, Caribbean Fishery Management Council, and Sea Grant Program.
- **The Arrecifes Isla Verde Nature Reserve completed four years of a successful community water quality program**. As part of our commitment to marine protected areas, we provided seed funding to support the implementation of best management practices leading by organizations with an active co-manage with DNER.
- **The CCI, DNER, TNC, and CBF completed the Puerto Rico Conservation Fund Sensitization Workshop** to provide key stakeholders with an overview of conservation trust funds generally (history, purposes, benefits, among other things) and the Caribbean Challenge Initiative/ Caribbean Biodiversity Fund, specifically; and to identify next steps to the establishment and capitalization of a fund in Puerto Rico. More than a dozen local and federal partners expressed their support for developing the new entity that will allocate resources to support the conservation of marine protected areas in Puerto Rico. The bylaws for the new entity have been completed, and we are working on the following steps to incorporate it under the laws of the Puerto Rico government.

Photo above left: Water quality workshop series in the "Reserva Natural Arrecifes Isla Verde" (Francisco "Paco" López); Photo above right: eReporting mobile app training in Humacao (TNC/ Alberto Mercado).

Photo: Foureye butterflyfish (NOAA).

SUCCESS STORY: The Puerto Rico Coastal and Marine Protected Areas Fund

Marine protected areas cover 27% of Puerto Rico's territorial sea. These marine protected areas (MPAs) are complex management zones and subject to many pressures. These include pollution from land-based sources and the effects of boating and other aquatic activities.

Because Puerto Rico's Department of Natural and Environmental Resources (DNER), and co-managers of the MPAs have limited access to economic resources, TNC is working with the DNER to establish the first Puerto Rico Coastal and Marine Protected Areas Fund.

The Fund will work hand in hand with the DNER and environmental organizations in Puerto Rico to implement strategies that promote marine resource conservation to address these pressures and their negative impacts.

Buoyed by a Coalition of Support

Creation of the Fund is supported by the Caribbean Challenge Initiative, the Caribbean Biodiversity Fund, and a dozen other funds in the Caribbean region. In total, more than 15 governmental and private organizations are involved in the Fund development process.

A Steady Source of Funding Support on the Horizon

The Fund will be sustained through producing its own recurrent funds, and aims to be a steady support in protecting the marine resources of the islands of Puerto Rico.

The organization's bylaws have been finalized and the Fund is expected to be incorporated between 2021 and 2022. Once the Fund's board is constituted, they will develop funding priorities.

U.S. VIRGIN ISLANDS

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for the U.S. Virgin Islands' reefs.

Photo: Aerial view of Cramers Park, the location of coral nursery demonstration site and outplant patch reef (MJS Visions).

Where We Work

The U.S. Virgin Islands (USVI) consists of three main islands — St. Croix, St. John and St. Thomas. These islands are home to hundreds of species of plants, fish and birds. Millions of tourists visit the islands each year, supporting local livelihoods and communities. The tourism sector in the U.S. Virgin Islands constitutes almost 32 percent of Gross Domestic Product and supports 29 percent of employment. However, increased ocean temperatures and acidity, overfishing and pollution have damaged reefs in the Virgin Islands. In parts of the Virgin Islands, populations of elkhorn corals, a key reef-building species, have decreased by 90 percent since the 1980s.

Our Approach

In the USVI we bring together cutting-edge science and technical support to rebuild reefs, support effective management and produce long-term marine protections. Through partnership with some of the world's leading coral science organizations, new coral restoration techniques are being developed and tested to grow large numbers of corals faster than ever and with greater survival rates. Based on needs identified by local partners, we provide support for policy development, management planning, strategy implementation, and the development and implementation of community engagement efforts.

Our Accomplishments

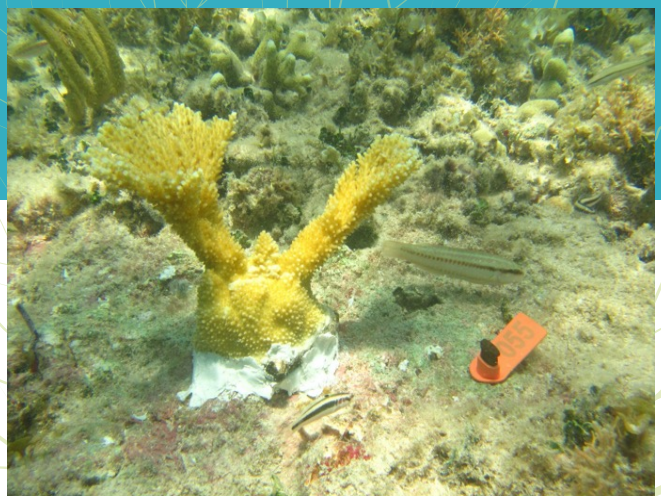
Our work has directly benefited approximately 60 square miles of coral reef habitat. Additionally, Partnership efforts have resulted in the training of nearly 600 individuals and the completion of eight new plans to directly support coral reef management and site-based coral reef restoration.

- **Mapped and quantified protection provided by coastal ecosystems in the USVI** to help local resource managers and decision makers identify coastal habitats that reduce risks from coastal hazards to local communities by providing storm protection, as well as to explore potential

impacts of management actions (such as the removal or restoration of nearshore habitat).

- **Created response plans for coral bleaching and vessel groundings** resulting in the creation of a BleachWatch program and the training of more than 200 volunteers to assess and respond to coral bleaching.
- **Outplanted 16,533 elkhorn and staghorn corals**, directly enhancing 8,036 square meters of coral reef within the St. Thomas East End Reserve and the St. Croix East End Marine Park.
- **Created a coral restoration plan for the East End Marine Park** that includes outplanting corals throughout the park, creating a demonstration site, and offering snorkeling tours as an opportunity for community engagement.
- **Completed and shared human-use maps for the St. Croix East End Marine Park**; maps were created through a participatory mapping workshop and will be used to inform management efforts.
- **Supported management activities at the St. Thomas East End Reserves (STEER)** to increase management effectiveness and build capacity at the site by: conducting a visitor willingness-to-pay study; fieldwork for watershed assessments, contaminants, and biological monitoring; and developing models to analyze the impacts of sea level rise in the territory.
- **Held a USVI Climate Change Ecosystem-based Adaptation (EBA) Workshop** that facilitated stakeholders in developing strategies to incorporate climate adaptation into disaster response, site-level management, and coastal zone planning, resulting in the first climate change policy document in the USVI.
- **Trained over 39 participating Reef Responsible Restaurants** that have voluntarily made commitments to improve their best practices when purchasing locally harvested seafood. Additionally, more than 1,000 participants engaged through Reef Responsible community events.
- **Installed a coral restoration demonstration nursery** containing 6 different species of coral in the East End Marine Park and trained 3 park staff and 16 volunteers in restoration methodology.
- **Supported learning exchanges and workshops** for 67 local resource managers and practitioners to respond to the outbreak of Stony Coral Tissue Loss Disease in the USVI.
- **Hosted the first USVI Coral Restoration Learning Exchange** bringing together restoration practitioners from across the territory and special guest experts from Florida to share knowledge and techniques.
- **Responded to 9 vessel groundings** with boat support, assessing damage, performing triage to broken corals and carrying out restoration.

Photo above left: East End Marine Park staff outplants A. palmata from the demonstration nursery to the nearby patch reef. Epoxy is used to attach the coral to the substrate (MJS Visions); Photo above right: Researcher from the University of the Virgin Islands performs a disease transmission experiment on corals in the St. Croix land-based coral nursery as a part of the Coral Restoration Learning Exchange (Lindsay Dade).



SUCCESS STORY: East End Marine Park: Coral Restoration Encourages Community Involvement

Coral restoration is becoming an important tool in safeguarding our coral reefs in the face of climate change, coral disease, and land-based sources of pollution. Staff at the St. Croix East End Marine Park (EEMP) discovered coral reef restoration to be an effective means of engaging more stakeholders and volunteers in conservation and restoration efforts at the park.

The EEMP staff partnered with restoration practitioners at The Nature Conservancy (TNC) to develop a coral restoration plan for the park. The plan outlined the value of active restoration and detailed a demonstration nursery project aimed at community engagement.

Coral Patrols – Multiply Impact and Build Capacity with Volunteers

Park staff were trained in cutting edge restoration techniques and then installed a demonstration nursery at Cramer's Park. The nursery consists of two table structures containing six species of coral and provides essential coral stock for outplanting and restoration within the park.

To increase their capacity and impact, the park staff established a community-based a Coral Patrol. 16 volunteer divers were recruited to the Coral Patrol where they were trained to provide valuable in-water assistance to support restoration efforts and help maintain the installations.

This team of volunteers has been a valuable support to the small staff. EEMP Coordinator Caroline Pott shared, "Coral Patrol volunteers allow the park to extend its impact much further than is possible with its small staff. More eyes and more hands truly multiply the impact of work we do and allow us to do much more." Together with the Coral Patrol, the Staff, TNC and EEMP staff successfully outplanted 35 coral fragments from the nursery onto a nearby patch reef.

A Bright Future and Goals to Increase Community Engagement

Since its installation in 2019, the coral nursery is proving to be a fun and innovative way to engage residents and tourists in coral reef conservation and increase their understanding of ongoing efforts to protect and restore this important ecosystem in St. Croix.

Located at a popular site for beach-goers within the marine protected area and near the shore, the nursery is easily seen by visitors while snorkeling. In its first year, the park held four site tours for specific groups and one site tour for the general public.

Future plans aim to conduct four public tours a year, engage more volunteers and interns, and expand their involvement to include collecting data on coral survival and health, taking 3-D photos, and outplanting more corals onto nearby patch reefs.

Photo above left: Park staff and Coral Patrol volunteers conduct monthly maintenance on coral nursery tables (EEMP); Photo above right: Newly outplanted coral at the Cramer's Park demonstration outplant site (Lisa Terry).

REEF RESILIENCE NETWORK

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for coral reefs around the world.

Photo: Lamu (credit: Mwangi Kirubi).

Where We Work

Coral reefs cover less than one tenth of one percent of the ocean, yet they are among the most biologically diverse, culturally significant and economically valuable ecosystems on the planet. The Reef Resilience Network (the Network) works around the world to accelerate solutions for improved conservation and restoration of coral reefs and reef fisheries.

Our Approach

Healthy coral reefs provide billions of dollars in food, jobs, recreational opportunities, coastal protection and other important goods and services to people around the world. However, 75 percent of the world's reefs are impacted by pollution, unsustainable fishing practices and global climate change. To help marine managers on the front lines of coral reef conservation address these threats and mobilize action for improved coral health, the Network connects them with peers, global experts, tools and knowledge. More specifically, the Network:

- Synthesizes and shares the latest science and management strategies to keep busy managers informed and up-to-date.
- Connects managers to peers and experts to share resources and lessons learned to improve management decisions and inspire greater collaboration.
- Provides training, technical assistance and seed funding to help managers apply learned concepts and tools and catalyze action on-the-ground and in-the-water.

Our Accomplishments

The Network has provided in-person and online training for more than 33,000 managers working in 83 percent of the 103 countries and territories with coral reefs.

Our reach stretches even further through our train-the-trainer model and online connection activities, such as webinars and discussion forums, resulting in a better informed and networked cohort of marine resource managers.

Key highlights of our work include:

- **Connected global managers and practitioners to peers and leading experts in coral-related fields** through 47 e-newsletters, 73 interactive webinars on hot topics in reef management, and the Network Forum, an online discussion forum where managers can ask questions, share ideas and resources and provide support to one another.
- **Worked with experts to synthesize the latest science and management strategies and share these products with managers via the Network website**. More than 892,000 people visit this online toolkit annually to read 67 case studies highlighting successful management strategies, 170 summaries of cutting-edge resilience science articles and new featured content on topics including reef restoration, blue carbon, communication, aquaculture, reef mapping, community-based climate adaptation and coral reef fisheries.
- **Designed and executed on-the-ground trainings for 1,500 managers** to help them incorporate resilience concepts into their management strategies, apply cutting-edge science to resource management and encourage increased knowledge sharing within and across regions. Through these trainings, managers and practitioners from around the world have:
  - » Developed coral reef restoration plans for their jurisdiction.
  - » Developed strategic communication plans to promote fisheries rules and best practices, motivate pro-reef actions, promote the use of reef resilience strategies and reduce storm drain pollution.
  - » Developed and implemented response plans for coral bleaching, coral disease and invasive species.
  - » Applied new reef monitoring programs and protocols to inform resilience-based management strategies.
  - » Created a coral restoration area that incorporates resilience-based management principles.
  - » Developed a new reef resilience program that has shaped policy, made critical management decisions and created a coral bleaching monitoring and response plan.
  - » Incorporated reef resilience principles into existing spatial management plans to support the long-term health of coral reefs.
  - » Applied resilience science to the design of marine protected area networks.
  - » Built the capacity of people at all levels—managers, enforcement personnel, educators, policy-makers, students, community members, fishermen, tourism operators, and more—to strengthen community resilience and mobilize action for improved coral health.
  - » Applied new tools for community-based climate adaptation.
  - » Produced publishable journal and media articles.

SUCCESS STORY: When Reef Building Goes Online

COVID has put a real strain on coral reefs as more people turn to the sea to feed their families and earn money – making coral reef conservation and restoration even more urgent. In Lamu, Kenya, where livelihood options are limited, more than 70% of the local communities depend on marine ecosystems. Coral reefs are particularly important, providing jobs linked to tourism activities and food and shelter for reef fish, octopus, and lobsters – which in turn provides food and income for Lamu's people.

On any given day, Kenya's reefs are under siege, threatened by overfishing, damaging fishing practices, large-scale development, unsustainable tourism, coral mining, changes in ocean chemistry and pollution, and warming seas due to climate change. In 1998, Kenya's reefs took their biggest hit yet when warming waters caused a bleaching event that greatly compromised their health and integrity. Since the bleaching event, there are glimmers of hope with the recovery of some coral along the Kenya coast.

In light of this decline and hope of recovery, reef managers—scientists, resource managers, and community leaders—are looking for new solutions to boost reef health and provide food and alternative livelihood options for local communities. The Nature Conservancy's (TNC) Reef Resilience Network and TNC Africa Program are working together to train local communities how to restore reefs which will support fisheries and community livelihoods.

Building Reefs Online?

A cohort of regional restoration practitioners was trained in reef restoration planning and best practices via a two-month mentored online course. Course participants developed a plan to restore half a hectare of reef within a locally managed marine area at Pate Marine Community Conservancy in Lamu. The project design incorporated low-cost and low-tech restoration methods to improve local fish populations, including the lobster fishery.

Following the online training, the cohort hosted a field-based workshop to engage stakeholders within the local fishing community in restoration practices. With hands-on support from the cohort, community members in Lamu began in-water work in January 2021 to build coral nurseries and artificial reef. The concrete structures will provide a surface for growing corals and also provide important habitat for fish and lobster; habitat that is largely absent from the degraded reef.

As work on the community-based restoration project in Lamu continues, the Reef Resilience Network and TNC Africa Program will provide on-going (virtual and in-person) support to the cohort, which includes scientists, managers, and community leaders from the County Government of Lamu, Kenya Marine and Fisheries Research Institute, Kenya Wildlife Service, and Pate Marine Community Conservancy—one of the conservancies under Northern Rangelands Trust-Coast that is leading this project on-the-ground in Lamu ensuring community participation and impactful implementation.

Photos above, left to right: Community conducting surveys in Lamu, Kenya; Echinopora *garden at Iweni (credit: Hamadi Mwamlavya).*

MICRONESIA

The Nature Conservancy, NOAA Coral Reef Conservation Program, and seven U.S. coral reef jurisdictions continued a $16.5 million, 12-year partnership to support the effective management and protection of coral reefs. Here's a peek at how that partnership translated to work on-the-ground and in-the-sea—and what that means for coral reefs around the world.

Photo: Coral reefs at Palau (credit: Ian Shive).

Where We Work

Coral reef health and resilience is paramount in Guam, the Commonwealth of the Northern Mariana Islands (CNMI), Palau, the Federated States of Micronesia and the Marshall Islands. These five jurisdictions cover 6.7 million square miles and encompass 2,000 islands inhabited by nearly 500,000 people speaking 12 languages. The area is also home to over 1,300 fish species and more than 480 coral species, with annual benefits valued at $800 million. In response to increasing pressures from climate-related impacts and locally induced human impacts, efforts to blend traditional conservation practices with modern methods are underway to protect these natural resources.

Our Approach

In Micronesia, coral reef conservation is advanced by providing technical and financial assistance to support the management efforts of local government agencies, non-governmental organizations and community partners. To amplify conservation momentum in the region, activities are conducted within the framework of the Micronesia Challenge, a commitment to conserve at least 30 percent of nearshore marine resources and 20 percent of terrestrial resources by 2020. Partnership efforts focus on site-based work in both Guam and CNMI while also fostering shared learning throughout the entire Micronesia region. Through implementation of learning exchanges and trainings, we aim to boost the effectiveness of protected areas, support strategic planning and conduct effectiveness assessments.

Our Accomplishments

Our work has directly benefited approximately 2,000 square miles of coral reef habitat. Partnership efforts have provided technical support to 37 organizations, brought together 29 organizations for learning exchanges and resulted in the training of staff from 25 organizations on reef resilience principles.

Photo: Diver at Palau (credit: Ian Shive).

- **Developed 18 Conservation Action Plans (CAPs)** to address threats to coral reefs with climate change impacts integrated into 10 plans.
- **Coordinated with governments, partners and working groups across Micronesia to develop and implement the following tools and structures to implement and measure the effectiveness of Micronesia Challenge efforts**:
  - » Developed the Marine Protected Areas Management Effectiveness (MPAME) tool to standardize evaluation of effectiveness of site management and document the accumulated impacts of protected sites. Results are being used to produce a scorecard which tracks the progress of the Micronesia Challenge. Eight sites have completed MPAME evaluations and the Palau Protected Areas Network (PAN) has adopted the tool to evaluate all 13 of its sites.
  - » Developed the Micronesia Finance and Administration-Operations Network (MFAN) to strengthen conservation organizations in the region by enhancing the management skills of operations staff. Individuals from 16 organizations participated in a workshop to teach financial and administrative skills.
- **Coordinated and implemented learning exchanges to share successes and lessons learned** between partners, foster better understanding of community-led marine stewardship and catalyze on the ground action.
- **Coordinated the participation of over 100 fisherman, scientists, resources managers, NGOs, State agencies and community members in the 1st Pohnpei State Coastal Fisheries Symposium** to share the latest information on the state of Pohnpei's coastal fisheries. The event yielded a commitment from state leaders to better manage Pohnpei's coastal fisheries and coral reef stewardship efforts.
- **Worked with enforcement experts from WildAid to conduct a comprehensive assessment and develop an enforcement plan for Palau's Northern Reefs**.
  - Annual ranger training was held with skill-building activities for new surveillance equipment and technologies.
  - MOUs were developed with Kayangel and Ngarchelong States to improve coordination and begin establishing joint enforcement and outreach and engagement with fisherman.
  - Lessons learned are helping to inform the establishment of a nationwide support network and process for improving enforcement of protected areas and fisheries.
- **Provided technical support to the Marshall Islands Conservation Society (MICS) in the creation of a pilot fisheries council in western Majuro** (Republic of the Marshall Islands). Activities included:
  - Design and collection of a perception survey with a sample of fishers from Majuro Atoll.
  - Meetings and workshops with key stakeholders to gather suggestions, feedback, and recommendations.
  - Working with the Western Majuro fishers to develop a common vision and mission for their association.
  - Establishing direct ties with the Marshall Islands Marine Resources Authority.

Learn more about our partnership to save reefs:
www.coralpartnership.org

Photo above: Butterflyfish (The Nature Conservancy/Tim Calver);
Front cover photo: Volunteers conduct coral nursery maintenance,
U.S. Virgin Islands (Lisa Terry).

The Nature Conservancy

U.S. All Islands Coral Reef Committee

NOAA CORAL REEF CONSERVATION PROGRAM