



Local Action For Global Coral Reef Conservation

**Highlights of a 4-Year Partnership between The Nature Conservancy
and the NOAA Coral Reef Conservation Program**

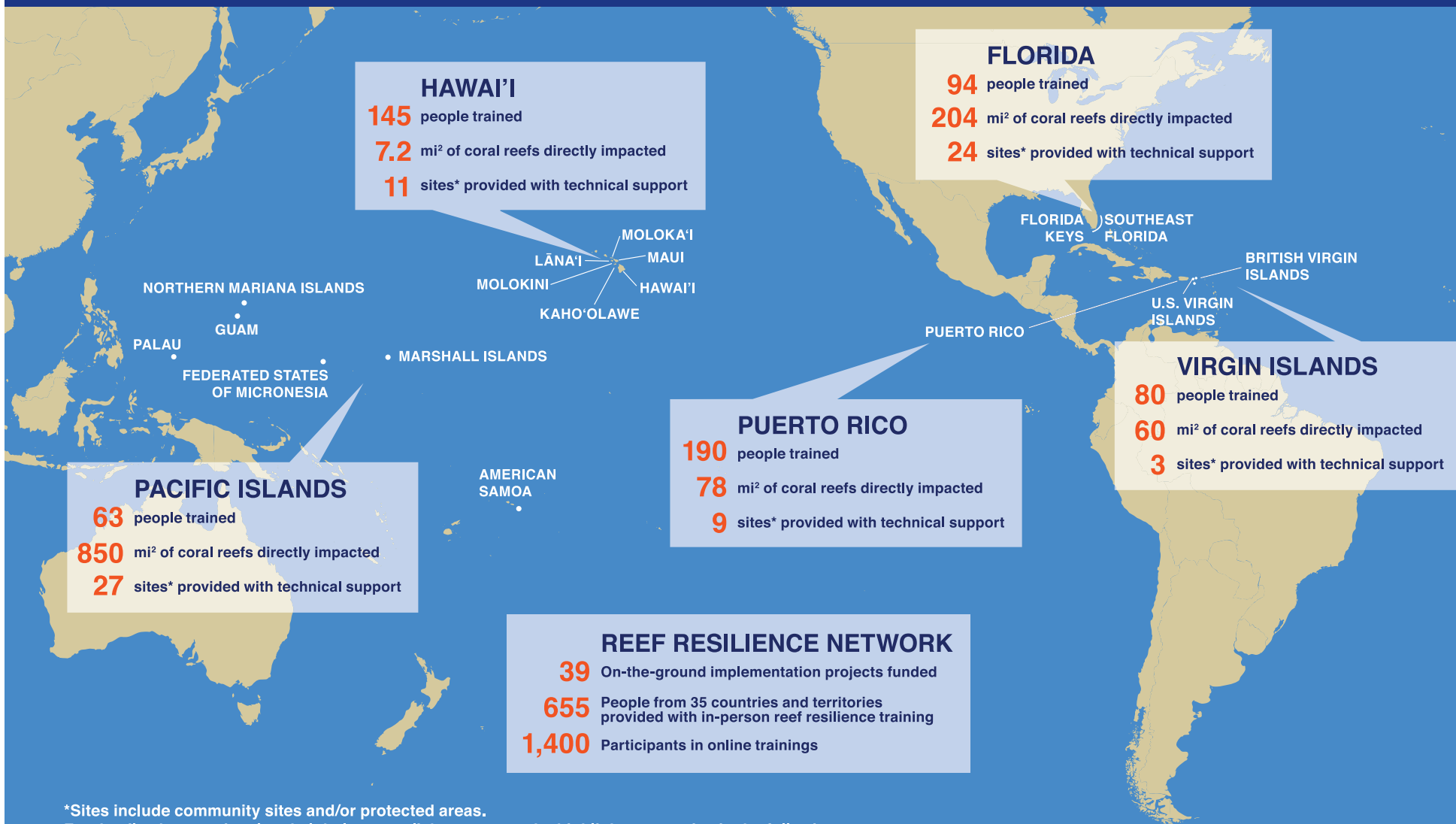
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NOAA
CORAL REEF
CONSERVATION PROGRAM

Local Action For Global Coral Reef Conservation

Highlights of a 4-Year Partnership between The Nature Conservancy and the NOAA Coral Reef Conservation Program



The Nature Conservancy and the NOAA Coral Reef Conservation Program completed a \$7 million four-year partnership to support effective management and protection of coral reefs. The work focused on providing planning, science, and on-the-ground implementation activities in priority U.S. geographies. Successful strategies were further leveraged through global capacity building activities for coral reef managers.

FLORIDA:

Local Action for Global Coral Reef Conservation

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FLORIDA KEYS) SEVENTH FLORIDA

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 individual reefs stretches from the remote Dry Tortugas, up through the areas offshore of the counties of Monroe, Miami-Dade, Broward, Palm Beach and Martin County. These living 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. Today, Florida's coral reefs generate \$4.4 billion in local sales and provide 70,400 full- and part-time jobs.

OUR APPROACH

Building on what has worked in other regions, emerging resilience-based strategies from the Great Barrier Reef Marine Park Authority (GBRMPA) and Caribbean are used to shape strategies that engage a diverse set of partners to improve reef health and enhance the sustainability of reef-dependent commercial and recreational enterprises. Using a combination of science and stakeholder engagement, resilience-based management strategies are developed and promoted to enable Florida's coral reefs to withstand and/or adapt to global climate change and local threats.



Stakeholders involved in the Our Florida Reefs Public Process inform the design of a new management framework for the region's reefs.

SUCCESS STORY: Public Engagement in Improving Coral Reef Management

In an effort to enhance coral reef conservation efforts across the Florida Reef Tract two public planning processes were launched: The Florida Keys National Marine Sanctuary (FKNMS) Marine Zoning and Regulatory Review and Our Florida Reefs (OFR) Public Process of Florida's Department of Environmental Protection's Southeast Florida Coral Reef Initiative.

These two efforts support the design and implementation of a comprehensive management framework for the region's reefs. Both processes are working to include the best available scientific information, respond to new environmental conditions and threats, and increase public involvement in developing a management strategy to ensure healthy coral reefs in the future.

The Nature Conservancy was intricately involved in coordinating and launching both processes. Staff continue to provide support for implementation through participation in advisory groups, providing access to new ecological data, coordinating process planning, securing community working group members, and bringing the latest mapping and interactive technology to the process. Final recommendations from the OFR are expected to be completed by the fall of 2016. FKNMS recommendations are complete and the public process for comments will take place during 2015.

FLORIDA: *highlights*

“The Our Florida Reefs (OFR) Community Planning Process is a blueprint model for stakeholder engagement. This multi-year process will obtain stakeholder recommendations for management of southeast Florida’s ecologically and economically valuable coral reefs.”

—Joanna Walczak, Florida Department of Environmental Protection

OUR ACCOMPLISHMENTS

Our work has directly benefited approximately **204 mi² of coral reef habitat**. Partnership efforts have supported the comprehensive collection of coral reef monitoring data across the Florida Reef Tract — the only existing cross jurisdictional approach to inform reef management — and trained 94 people in coral reef survey methods, which resulted in 1,121 sites surveyed.

HIGHLIGHTS:

■ 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 information** to increase effective, comprehensive, science based, on-the-ground management efforts.

• **Provided easy access to coral reef demographic datasets** through the addition of an interactive map for the Florida Reef Resilience Program website (www.frrp.org). The website is the most comprehensive resource of its kind for the region.

• **Conducted a learning exchange between managers and experts** from California and the Southeast Florida Coral Reef Initiative Process Planning Team (SEFCRI PPT). The exchange highlighted California’s experience in implementing the California Marine Life Protection Act and provided valuable recommendations for the SEFCRI public process to engage the broad community in planning for the future of Florida’s coral reefs (See “Success Story” on reverse).

• **Trained sixteen practitioners on the technical aspects of utilizing MARXAN software** to inform decisions on resource management and marine planning. Training participants represented the State of Florida’s

Coral Reef Conservation Program, Pennekamp State Park, Nova Southeastern University, University of Miami, and NOAAs Coral Reef Conservation Program.

■ **Developed “The Florida Reef Tract Coral Bleaching Response Plan”** to provide a strategic approach for monitoring bleaching and other events, and protocols for early warning, impact assessment, communications and management actions.

• **Thirteen survey teams of scientific divers conducted more than 230 coral reef surveys annually to monitor and assess bleaching.** In 2011, survey results indicated that almost the entire reef tract was impacted by bleaching, making it the most significant coral bleaching event since the Florida Reef Resilience Program began in 2005.

• **Additionally, researchers from 13 organizations surveyed 78 sites across the Florida Reef Tract to analyze and assess impacts of unusually cold weather and inform management.**

The most impacted areas were the inshore and mid-channel zones from Summerland Key through Biscayne National Park.

• **Provided Florida and Caribbean managers with mentorship from Great Barrier Reef Marine Park Authority experts** through a learning exchange to improve bleaching response plans.



From top to bottom: Volunteer conducting disturbance response monitoring. SEFCRI Partners attending the Presentation Boot Camp Training. Presentation during the *Our Florida Reefs Process Event* at Nova Southeastern University.

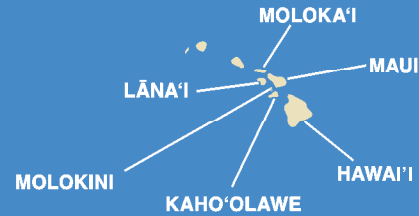
This resulted in ongoing communication and collaboration between coral reef management agencies in Australia and Florida.

■ **Published the “Climate Change Action Plan for Florida’s Coral Reef System: 2010-2015”** in collaboration with reef scientists, managers, and users. The Action Plan guides coordination of reef management across jurisdictions and geographies to increase resilience through active management, enhanced communications, and targeted research.

■ **Provided technical assistance to the Government of the Cayman Islands**, with funding from the UK government, to apply resilience principles to a process of MPA review and design. This request was a direct result of participation by Florida practitioners in the Reef Resilience Training of Trainers and has led to increases of no-take areas in the Caymans from 15 to 50%.

HAWAI'I:

Local Action for Global Coral Reef Conservation



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WHERE WE WORK

Hawai'i's coral reefs and nearshore waters are home to more than 7,000 forms of marine life. About 33% of corals and 25% of all other marine organisms living in Hawai'i are found nowhere else in the world. The islands of Hawai'i and Maui Nui – which includes Maui, Moloka'i, Lāna'i, Molokini, and Kaho'olawe –include some of the healthiest coral reefs in the State. On these islands, community groups are reinvigorating place-based management to rebuild fisheries and maintain the clean, clear waters upon which they and the coral reefs depend.

OUR APPROACH

In Hawai'i, coral reef conservation depends on local community and state partners ability to protect and sustainably manage marine resources. We provide organizations and agencies with technical support in science, planning, strategic communications, and policy to effectively manage marine resources. Our collective conservation work is grounded in Hawai'i's rich tradition of resource knowledge and management and is accessible and participatory. This approach has resulted in increased community capacity and public support for improved marine resource protection and management.



Mū'olea community members posting information on the three-year no-take area for 'ōpihi.

SUCCESS STORY: A Hāna Community Creates a New Type of Management Area

The endemic 'ōpihi (limpet), remains a staple in the Hawaiian diet, and is a species of highest concern for one east Maui community group. To better understand what was happening to 'ōpihi populations, we brought together scientists, government partners, and three Hāna fishermen with decades of expertise. Emily Fielding, The Nature Conservancy's Maui Marine Program Director, says, "Hank Eharis can look at the shoreline and immediately tell you whether the 'ōpihi has been over-picked or recently picked. It's all based on what he sees with a trained eye."

Over the course of four years, community volunteers at multiple sites on Maui, Kaho'olawe, and Hawai'i Island were trained in 'ōpihi monitoring. The resulting data, along with Hank's keen eye, indicated that certain size classes were missing from the 'ōpihi stocks, likely due to overfishing. The result of this community engagement in ongoing scientific monitoring was a decision by two east Maui communities to pilot a brand-new approach for Hawai'i—a **three-year voluntary no-take area for 'ōpihi**, conceived, designed, and implemented at the community level with Partnership support.

Together, we developed signs, posters, and t-shirts; held community meetings; and talked with friends and family members to encourage respect for the voluntary no-take area. With science support from Texas A&M University and The Nature Conservancy, the community will continue to monitor 'ōpihi populations and monitor compliance. The project combines biological science with traditional knowledge and strategic communications to test the effectiveness of voluntary no-take areas as a fisheries management tool for Hawai'i.

HAWAI'I: highlights

“Hank can just look at the shoreline and immediately tell you whether the ‘ōpihi has been over-picked or recently picked. It’s all based on what he sees with a trained eye.”

—Emily Fielding, The Nature Conservancy’s Maui Marine Program Director

OUR ACCOMPLISHMENTS

Our work has directly benefited approximately **7.2 mi² of coral reef habitat**, in 11 sites. Partnership efforts have resulted in training for individuals from 12 organizations, technical assistance for 11 organizations, and development of 9 new management plans to maintain and improve coral health.

HIGHLIGHTS:

■ **Facilitated the creation of the Maui Nui Makai Network.** Comprised of six community groups, representing 18.5 mi² of marine area, the Network’s goal is to demonstrate and accelerate the success of community place-based co-management.

■ **Engaged over 600 people in management efforts.** All six member groups of the Network are promoting best practices for fishing based on traditional Hawaiian values, and three groups are seeking formal designation as Community-Based Subsistence Fishing Areas.

■ **Provided communications and technical support to complete an administrative rule request for a 10-year fishing rest period** along 3.6 mi of shoreline from the Ka‘ūpūlehu community in west Hawai‘i to replenish fish for sustainable fishing.

■ **Completed Eight Conservation Action Plans (CAPs)**— a collaborative, science-based approach to identify and preserve conservation targets and measure success. The plans are all being actively implemented, resulting in improved management of coral reef habitat.

■ **Developed a Preliminary Invasive Fish Removal Plan** for peacock grouper (*Cephalophalus argus*) based on a three-year pilot invasive fish removal effort on the island of Hawai‘i.

■ **Implemented a parentage and larval dispersal project to better manage**

connectivity along the west Hawai‘i coastline. Scientists and local fishermen worked to measure the spillover benefits of fully protected areas to adjacent waters through export of larval fish.

■ **Completed reef and reef fish baseline monitoring at four Maui sites, and established the most comprehensive baseline in west Hawai‘i.** When scientists reported that one west Maui site had no fish of reproductive size, the community developed an administrative rule proposal to rebuild fish stocks.

■ **Implemented intertidal fisheries monitoring at two Hawai‘i island sites** with community and science partners to identify seasonal and spatial patterns of invertebrates to inform long-term sustainable fishery planning.

■ **Trained community leaders and local youth in traditional ecological knowledge interview techniques,** and helped the community conduct twelve interviews to inform planning and outreach efforts at community-managed sites on Maui.

■ **Conducted scientific and cultural projects** to evaluate hydrology, biology, water chemistry, and ecology at the Kīholo fishpond in west Hawai‘i with partners. The work included 13 work-days with 319 community volunteers, perpetuating Hawaiian cultural practices and traditions related to coastal and ocean stewardship.

■ **Trained 18 Maui Nui Marine Resource Council members** in community-based planning,



Maui and Hawai‘i Island community groups and partners conducting an intertidal habitat survey; Local fishermen blend traditional and modern fishing methods to collect fish samples in west Hawai‘i; Resource managers from Hawai‘i participating in a learning exchange in Palau.

resulting in the creation of three active community-based management groups.

■ **Conducted a two-part learning exchange for policy makers, fishers, and community marine resource managers between Hawai‘i and Palau.** Thirty community members and government partners traveled between Hawai‘i and Palau to learn about their natural resource management challenges and successes. In part as a result of this place-based sharing, Hawai‘i has its first Community-Based Subsistence Fisheries Area, west Hawai‘i has banned SCUBA spearfishing, and Palau became goat free.

■ **Convened six coastal communities in west Hawai‘i** to develop a network supporting each other’s ocean resource management efforts. All pledged to provide support for the west Hawai‘i communities seeking fisheries policy reform.

PACIFIC ISLANDS:

Local Action for Global Coral Reef Conservation

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NORTHERN MARIANA ISLANDS

PALAU

GUAM

FEDERATED STATES
OF MICRONESIA

MARSHALL
ISLANDS

AMERICAN
SAMOA

WHERE WE WORK

Coral reef conservation efforts are underway in American Samoa, the Republic of Palau, the Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI), the U.S. Territory of Guam, and the Commonwealth of the Northern Mariana Islands (CNMI). Spanning 2.6 million mi² – 5% of the Pacific Ocean – this area is home to biodiverse marine and coastal habitats with over 1,300 fish species and 535 coral species. Natural resources in this region support more than 550,000 people, with annual benefits from coral reefs alone valued at \$800 million. In response to increasing pressures from climate-related impacts and locally induced human impacts, Pacific Islanders have begun efforts to blend traditional conservation practices with modern methods to protect these natural resources.

OUR APPROACH

In America Samoa and Micronesia, coral reef conservation is advanced by providing technical and financial assistance to support the management efforts of government, non-governmental organization, and community partners. To build on conservation momentum in the region, activities are conducted within the frameworks of the Micronesia Challenge, a commitment to conserve at least 30% of nearshore marine resources and 20% of terrestrial resources by 2020; and the Two Samoas Initiative, which recognizes biological interconnectedness and enhances environmental stewardship in the Samoan archipelago. Partnership efforts have focused on fostering shared learning among local partners through exchanges and trainings to boost the effectiveness of protected areas, developing site-based conservation action plans, supporting strategic planning and board development, and conducting effectiveness assessments.



Joe and Jesse Quinata promoting land and marine conservation as part of the community's cultural heritage.

SUCCESS STORY:

A Learning Exchange Inspires Brothers to Promote Sustainable Fishing in their own Waters

Jesse and Joe Quinata are brothers who grew up in Umatac, Guam, on ranch land that has been in their family for generations. They have fished their whole lives and seen the ocean in Guam change. “People don’t use the same practices,” Jesse explains, “or fish for the same reasons...Fishing on Guam now is economic.” When the brothers go fishing, they catch about two fish in four hours—not like the old days. Joe dreams of teaching his children, and their children, how to fish. He wants to pass along the proud secrets of his elders.

Jesse and Joe attended a learning exchange with Palau. There, the brothers had the opportunity to visit one of the many conservation areas. Bobbing offshore in a small fishing boat, the group spoke about conservation as they caught one fish after another. A Palauan host explains, “The real fisherman is not the fisherman who catches a lot of fish. It’s the fisherman who understands the seasonal changes, the ethic 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. Because of that, they have plenty.”

Inspired not only by Palau’s abundance, but also by the resource management approach used in Palau, Jessie and Joe created a conservation organization for their village. The Humåtak Community Foundation was developed to promote land and water conservation as part of the community’s cultural heritage. “We’re here today to celebrate what we have,” Joe says, “and work toward conserving for our kids and our kids’ kids.” Joe 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.”

Adapted from Into the Islands with Dan Ho, Season 1: “Pilot” and “Episode II,” available at <http://intotheislands.com/>

PACIFIC ISLANDS: *highlights*

“The real fisherman is not the fisherman who catches a lot of fish. It’s the fisherman who understands the seasonal changes, the ethic of conservation, and the whole process about fishing.”

—Jesse Quinata, Humatak Community Foundation

photo: Courtney Couch

OUR ACCOMPLISHMENTS

Our work has directly benefited approximately **850 mi² 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.

HIGHLIGHTS:

■ **Completed and formally adopted Conservation Action Plans (CAP)**— a collaborative, science-based approach to identify and preserve priority biodiversity and measure these efforts—at 27 sites. Plan implementation, which results in improved management of important coral reef affiliated areas, has begun in eight sites.

■ **Hosted collaborative workshop on reef resilience principles**— the first of its kind for American and Western Samoa—for 32 individuals representing 13 groups from these islands. The workshop sparked a productive discussion on how an MPA network could be created in the Samoan archipelago and developed recommendations to more efficiently implement the Two Samoas Initiative.

■ **Held the 2nd Micronesia Challenge Measures Working Group meeting**, in collaboration with the Palau International Coral Reef Center, which resulted in the development of monitoring protocols to measure the ecological effectiveness of protected areas. All 13 Palau Protected Areas Network (PAN) sites, FSM (Yap, Chuuk, Pohnpei, and Kosrae) and the Marshall Islands are now using these protocols in their MPAs.

■ **Trained thirty partner coaches on the Open Standards for the Practice of Conservation and the CAP process**. Following this training, coaches led management planning and CAP workshops to develop four new CAPs in the region.

■ **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.

• **Participants from Pohnpei and Yap visited Palau to learn about watershed partnerships, through which several terrestrial managed areas have been established**. Based on lessons learned from the Babeldaob Watershed Alliance, a network of Palau communities engaged in watershed management, Yap participants rallied their eight villages to establish the Tamil Resources Conservation Trust, which has since developed a management plan and established an MPA.

• **Managers and environmental 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 into the management process.



From top to bottom: Learning exchange participant takes a closer look at the results of community-based management; Monitoring protocols are used to measure the ecological effectiveness of marine protected areas; An important coral reef site where a Conservation Action Plan has been completed.

■ **Designed the Marine Protected Areas Management Effectiveness (MPAME) tool to standardize effectiveness evaluation of site management and document the accumulated impacts of protected sites**. Results from the Pacific jurisdictions are used to produce a scorecard, tracking 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 through enhancing the management skills of operations staff. Individuals from 16 organizations participated in a workshop to teach financial and administrative skills.

PUERTO RICO:

Local Action for Global Coral Reef Conservation

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PUERTO RICO



WHERE WE WORK

Puerto Rico is a mountainous archipelago in the northeastern Caribbean that includes the main island of Puerto Rico and a number of smaller islands. The coastline is home to more than 1,930 mi² of shallow coral reef ecosystems that include mangrove forests and seagrass beds. These habitats support more than 677 species of fish and 237 species of coral, however over 93% of coral reefs are threatened due to 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 focus on fostering collaboration among stakeholders at the federal, regional, and local levels to develop a functional, effective system of sustainably managed Marine Protected Areas (MPAs). Local government and communities are provided with technical and coordination assistance in science, MPA effectiveness and the development of strategies to integrate climate considerations into planning and increase the effectiveness of coral reef management efforts.



View from the beach at Cabo Rojo, Puerto Rico, a coral priority region and site of a human-use mapping workshop

SUCCESS STORY: Human-Use Mapping Leads to Conservation Action

The Cabo Rojo Coral Priority Region in southwest Puerto Rico includes three marine protected areas and is well known for commercial fishing. More recently, the region has also become a popular tourism destination. A lack of understanding of when and where human uses were taking place in the region was identified as a key barrier to effective management.

Through a collaborative mapping and conservation action planning process with local stakeholders, including fishers, several strategies – such as the need for mooring buoys and additional fishing regulations – were identified to reduce conflict and protect coral reefs. As a result, the Department of Natural & Environmental Resources is planning for mooring buoy installation, in accordance with the new human-use maps to prevent anchor damage to coral reef resources. Through the mapping and action planning process, information about an unregulated shark pup fishery in the area was provided, which resulted in the proposal of the first action to protect sharks in Puerto Rico. These new regulations to create a no-take shark sanctuary are supported by both recreational and commercial fishers in the region, and are currently under government review.

PUERTO RICO: *highlights*

“Through the Cabo Rojo Project, our voices are being heard about impacts to our marine resources. We’ve been included as partners and are able to collaborate in creating conservation actions that are needed for the area that our livelihoods depend on. Fishers can be the first line of defense for marine conservation.”

—Puerto Real Community Leader and Commercial Fisher Daniel “Papo” Irizarry

OUR ACCOMPLISHMENTS

Our work has directly benefited approximately **78 mi² of coral reef habitat**. Partnership efforts have resulted in the training of 36 people in ecosystem-based adaptation and 154 commercial fishers in data reporting; provided on-site management assistance to nine coral reef sites; and created the first-ever management plan for the Cabo Rojo Coral Priority Region.

HIGHLIGHTS:

■ ***Puerto Rico joined the Caribbean Challenge Initiative (CCI) by committing to conserve at least 20% of nearshore marine and coastal environments in national marine protected areas systems by 2020*** and created the National Conservation

Trust Funds. TNC staff served as an advisor to 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.

■ ***Completed the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) for Puerto Rico’s protected area system in collaboration with the Department of Natural and Environmental Resources (DNER) Reserves and Refuges staff.*** The assessment was the first-ever system wide evaluation of protected area management in Puerto Rico; taking the assessment into consideration, the DNER has begun a process of agency restructuring and staff reallocation to increase protected area management effectiveness.

■ ***Trained eight coral reef managers in Conservation Action Planning (CAP)*** who directly applied these skills to continued action planning for four sites: Cabo Rojo, Puerto Rico;

Cane Garden Bay, British Virgin Islands (BVI); St. Thomas East End Reserves and the St. Croix East End Marine Park, U.S. Virgin Islands (USVI).

■ ***Trained three enforcement officers from the BVI, USVI, and Puerto Rico,*** to effectively protect coral reefs at the WildAid Global MPA Enforcement Conference.

■ ***Developed and coordinated the Puerto Rico Natural Protected Areas Congress,*** the first-ever opportunity for local marine and terrestrial managers to convene and share best management practices. More than 130 participants from government, academia, NGOs and community groups were involved. The Congress facilitated connections between funders with on the ground projects resulting in a successful dune restoration project.

■ ***Supported the creation of the Puerto Rico Climate Change Council (PRCCC)*** to support the incorporation of climate adaptation and vulnerability considerations into planning. The Council is made up of 170 interdisciplinary collaborators and has been designated by the governor as the official body to advise the government on climate change policy. The Nature Conservancy continues to serve as one of the lead partners in the development and operation of this unprecedented and successful effort.



From top to bottom: Cabo Rojo Coral Priority Region; Local fisherman participate in conservation action planning; La Parguera communities vulnerable to the impacts of climate change.

■ ***Provided technical support to develop the first document to assess Puerto Rico’s vulnerability to climate change,*** the “Puerto Rico State of the Climate Report.” Based on this report, the governor of Puerto Rico issued five executive orders that mandate all public agencies to create adaptation plans for public infrastructure.

■ ***More than 30 people attended an Ecosystem-based Adaptation Integration Workshop,*** which was held in collaboration with the PRCCC and the recently formed Caribbean Landscape Conservation Cooperative. As an initial result, a committee was created within the Climate Change Council to address ecosystem-based adaptation to climate change.

VIRGIN ISLANDS:

Local Action for Global Coral Reef Conservation

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BRITISH VIRGIN ISLANDS
U.S. VIRGIN ISLANDS

WHERE WE WORK

The U.S. Virgin Islands (USVI) and the British Virgin Islands (BVI) coral reef, mangrove, and seagrass habitats nurture 45 species of coral and more than 400 species of fish. These coral species are under threat from a variety of impacts including vessel groundings, overfishing, point and non-point source pollution, increased ocean temperatures that cause bleaching and lionfish invasion. With a land area of only 134 mi² in the USVI, the annual economic value of reef-related tourism, recreation, and commercial fisheries is \$147 million.

OUR APPROACH

Coral reef conservation efforts enable greater federal, regional, and local collaboration to directly reduce threats to coral reefs. Expertise provided in policy development, management planning and strategy implementation, as well as incorporation of technical ecosystem-based climate change adaptation into local and regional planning efforts, make a tangible difference.



Left to Right: Hostess Sarah showing the Reef Responsible plaque at restaurant Savant, a certified Reef Responsible Restaurant on St. Croix; Chef Mike from Savant prepares Reef Responsible dish.

SUCCESS STORY:

Working with Restaurant Owners to Protect Coral Reefs

In the USVI, nine restaurants on St. Croix have joined the Reef Responsible Sustainable Seafood Program to promote healthy reefs and support fishers by purchasing local and responsibly harvested seafood.

To become a certified Reef Responsible Restaurant, owners, chefs, and staff undergo comprehensive training. Participants are provided with outreach materials based on the best available science and are briefed on the negative impacts from the overharvest of herbivorous fishes, which play an important role to remove algae from reefs and provide space for corals to thrive. They also learn about seasonal closures and catch size restrictions, and are introduced to the “Good Choice, Go Slow, and Don’t Eat” seafood list. Additionally, demonstrations are provided on how to prepare “good choice” fish like invasive lionfish.

Once the training is completed restaurants are then branded as a Reef Responsible Restaurant, and are celebrated for their commitment through free advertisement. By helping restaurant owners make informed decisions about the seafood they purchase, prepare, and serve, the program works to ensure that both the seafood and the reefs that we enjoy today can be enjoyed by generations to come.

VIRGIN ISLANDS: highlights

“Reef Responsible Restaurants is an invaluable tool for chefs and restaurant employees! The service industry is an integral part of educating and informing the consumer, and making sure fishermen know that providing sustainably fished and healthy products to customers is important to us.”

—Katherine Pugliese, co-founder of A Taste of St. Croix

OUR ACCOMPLISHMENTS

Our work has directly benefited approximately **60 mi² of coral reef habitat**. Partnership efforts have resulted in the training of 195 individuals, and the completion of eight new plans to directly support coral reef management goals and site-based restoration work.

HIGHLIGHTS:

- *The USVI endorsed the Caribbean Challenge Initiative, with a commitment to conserve at least 20% of the nearshore marine environment in an updated protected areas system by 2020.* Capacity-building and outreach efforts of the partnership were significant factors leading to the commitment.
- *Developed a USVI Sustainable Financing Plan for Protected Areas* with stakeholders, which includes an implementation schedule and commitments from key partners.
- *Created response plans for coral bleaching and vessel groundings*, resulting in the creation of a Bleachwatch program and training of more than 30 volunteers to assess and respond to coral bleaching.
- *Created and updated the Territorial Lionfish Management Plan* to proactively address the threat of lionfish to the health of coral reefs.
- *Facilitated the creation of the Virgin Islands Marine Protected Areas Network (VIMPAN)*, a multi-agency coral reef management group, resulting in increased collaboration on reef management efforts in the region.
- *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, and fieldwork for watershed assessments, and contaminants, and biological monitoring, and developing models to analyze the impacts of sea level rise in the territory.

- *Implemented management activities at the St. Croix East End Marine Park (STXEEMP).* Conducted the planning process to update the park management plan, mooring buoy maintenance, and the design and construction of an outdoor classroom, which is successfully being used in the park’s EcoCamp program to provide local youth with environmental education.
- *Completed a resilience assessment for St. Croix’s reefs* to inform managers about response activities and threat reduction priorities.
- *Provided training and learning exchange opportunities for 195 local resources managers, practitioners, and stakeholders* to improve their skills and knowledge of tools and techniques in spatial planning, geographic information system (GIS), watershed management, enforcement, and the integration of ecosystem-level data into coastal zone planning and policy.
- *Held a USVI Climate Change Ecosystem-based Adaptation (EBA) Workshop* that facilitated stakeholders in developing strategies



Top to bottom: USVI BleachWatch signage; 3rd Annual STEER Cleanup with Eurdora Kean High School students; Conservation Action Planning participants from USVI, BVI and PR on Mona Island, Puerto Rico; Biological Monitoring at STEER, USVI.

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.

- *Completed a policy review of local coral reef regulations and mandates* and laws on in-water damage of coral reefs to inform local management efforts.
- *Held the Coral Assembly to increase collaboration across the Puerto Rico Bank* (Puerto Rico, USVI, and British Virgin Islands), which gathered 100 managers and practitioners to exchange information and generate strategies for shared initiatives.
- *Facilitated government agencies, builders, and designers to develop solutions to coastal erosion* resulting in the creation of the handbook “Best Management Practices: A Guide for Reducing Erosion in the British Virgin Islands.”

Global Capacity Building For Coral Reef Managers

Highlights of a 4-Year Partnership Between The Nature Conservancy
and the NOAA Coral Reef Conservation Program

WHERE WE WORK

The Reef Resilience Network is an international partnership between government and non-governmental organizations to build the capacity of coral reef managers and practitioners around the world to implement management strategies that address impacts on coral reefs from climate change and other stressors.

OUR APPROACH

The Network translates local successes into global change by providing access and translating the latest science and management strategies for coral reef practitioners through in-person trainings and online resources. Reef managers are connected to experts and other managers around the globe through our online forum, webinar series and mentored online course. Trained managers serve as change agents, educating their own communities and implementing best management practices and resilience principles.



Left to Right: Jahson Alemu I, Reef Resilience Network member, implementing resilience-based management on the ground in Tobago; Caribbean Training of Trainers Workshop held in June 2010. Left image photo credit: Jonathan Gomez.



SUCCESS STORY: Building the Capacity of Reef Managers Results in on-the-ground Action

Jahson Alemu I from the Institute of Marine Affairs in Trinidad and Tobago, was a participant in the 2010 mentored Reef Resilience online course and the in-person Caribbean Training of Trainers workshop. As a result of this training, he received seed funding from the Reef Resilience Network to lead a workshop with stakeholders in Tobago, where they drafted a bleaching response plan for the island.

Now, thanks to funding from the Inter-American Development Bank and Caribbean Community Climate Change Centre, Tobago will be building on Jahson's bleaching response plan and implementing it as part of a climate change monitoring program.

Jahson has participated in several other Reef Resilience Network exchanges and events. One of which was a workshop to build writing skills. Following this workshop, Jahson submitted a paper to several journals, and his article Mass Coral Bleaching in 2010 in the Southern Caribbean was published in PLOS in January 2014. Jahson was also supported to present his work on community-based management and social resilience in Tobago, at an international Island Resilience symposium in New York City. Jahson is one example of hundreds of managers that the Reef Resilience Network engages and supports through capacity building activities.

REEF RESILIENCE NETWORK: highlights

“This training has taught me to take up the challenge of managing MPAs for uncertainty in our ever changing world. The course gave me knowledge and tools that I have shared with representatives from local government, research and the private sector - facilitating our common goal of making a change for the better in Zanzibar.”

—Ulli Kloiber, 2013 Reef Resilience training participant

photo: Courtney Couch

OUR ACCOMPLISHMENTS

Through the Partnership, the Reef Resilience Network has provided in-person training for more than 750 people from 70 countries and territories; implemented Training of Trainers courses for more than 95 managers from 47 countries; conducted online training for over 1400 participants; and held webinars attended by 700 people resulting in a better informed and networked cohort of coral reef managers.

HIGHLIGHTS:

- **Supported online interactions between managers and experts through the Reef Resilience Toolkit**, a comprehensive website, which includes the latest coral reef science and management methods, making relevant science accessible, and highlighting challenges and solutions for coral reef managers. Accomplishments include:
 - **Over 16,000 unique visitors** to the Toolkit each month.
 - **Provided access to the latest science and management research** via 70 summaries of recent journal articles.
 - **Developed 32 case studies** to highlight successful management strategies and share lessons learned.
 - **Synthesized new science and strategies** on coral bleaching, ocean acidification, identifying resilience, social resilience, and strategic communications to include in the Coral Reef Module.
 - Developed and distributed 19 newsletters to over 650 people.
 - **Developed and hosted 17 interactive webinars, attended by over 600 people** with recordings available online.
 - **Connected over 100 managers and experts through the development and hosting of the online Network Forum.**

- **Developed the Reef Resilience online course**, which includes Bahasa, French, and Spanish versions, to support in-person resilience training activities. Over 1,200 people from 88 countries have participated.
- **Developed and led in-person trainings and experiences for coral reef managers** to improve management strategies and build capacity. Participants received technical support and seed funding for trainings. Accomplishments include:
 - **Trained 95 managers from 47 countries and territories through Training of Trainers workshops from 2010-2013**, which required participation in the online course mentored by experts prior to in-person training.
 - **Distributed more than \$67,000 in seed funding for 32 trainer’s projects** implemented by 39 workshop participants.
 - **Training of Trainers’ curriculum replicated by partners**, resulting in the training of an additional 21 practitioners and participant-led trainings for 308 stakeholders throughout Mesoamerica and Southeast Asia.
- **Developed and implemented eight learning exchanges** to share successes and lessons learned, further understanding of the application of resilience principles to management, and catalyze on-the-ground action. Highlights of these exchanges include:



Left to right: Training of Trainers (TOT) participants learning about marine protected area design. TOT participant leading a reef resilience training in Kenya; photo credit: Jillo Katello Wato.

- Managers from Florida, the Caribbean, and Australia developed or revised bleaching response plans assisted by local and global experts.
- Twenty field practitioners and experts participated in an exchange to assess coral reef resilience and bleaching impacts in the Indonesian Archipelago.
- Twenty-four practitioners from around the world focused on the application of resilience science to the design of MPA networks.
- Fifty-eight managers participated in an exchange to build capacity and connections between marine resource professionals through targeted skill development in strategic communications and the application of resilience principles.
- Sixty-two managers, practitioners, and community members participated in exchanges between Palau and Hawai‘i to learn about management systems in each location.
- Fourteen managers and practitioners from the Caribbean participated in a workshop to build writing skills and develop publishable journal and media articles.