



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Coral Reef Conservation Fund – Funded Projects

Quantifying Watershed Erosion Control Impacts on Coral Reefs in the U.S. Virgin Islands, *University of San Diego*

U.S. Virgin Islands

Coral Reef Conservation Fund 2013 Grant: \$18,055.13 Partner Contributions: \$18,102.00

In collaboration with NOAA's Restoration Center and Dr. Ramos-Scharrón, monitor the effectiveness of erosion control best management practices that were installed in Coral Bay, St. John, USVI in 2011. The practices were installed to reduce sediment loading into the Bay, which can smother and harm coral reefs, in an effort to restore coral reefs in this area. Approximately \$1.98 million from the American Recovery and Reinvestment Act of 2009 (ARRA) were allocated to sedimentation reduction strategies in the watershed. This project will continue post-restoration monitoring for a third year to determine the effectiveness of these restoration measures and enable scientists and managers to better understand the connection between restoration activities on land and their impact on reefs. Monitoring will take place in both marine and terrestrial environments resulting in a determination of the relative impact of the ARRA-funded restoration activities on watershed runoff and marine sedimentation in associated coral reef areas. The lessons learned from this project will be transferable to environmental managers in other tropical islands. The results may also inform the selection of land based sources of pollution metrics and the development of sediment monitoring protocols.

Developing a Watershed Action Plan for Cabo Rojo, Puerto Rico, *Ridge To Reefs, Inc.*

Puerto Rico

Coral Reef Conservation Fund 2013 Grant: \$75,000.00 Partner Contributions: \$75,000.00

Ridge To Reefs, Inc. will create a watershed action plan for Cabo Rojo to include specific and prioritized key actions and projects for implementation by interagency partners, local groups and municipalities to improve the health of the Cabo Rojo watershed and nearshore coral reefs. As part of this effort a baseline inventory of the reefs will be completed as a basis for establishing conservation goals and threat reduction targets. The planning effort will include the identification and prioritization of projects in urban and agricultural areas based on their relative estimated impact to the goal, and will identify source areas of pollution (via GIS to the extent possible). The project will also include a stakeholder process to engage stakeholders in the assessment, goal setting and establishing feasible priority actions in the plan that will reach this goals.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Building Networks for Coral Conservation in New Guinea, *Conservation International Foundation*

New Guinea

Coral Reef Conservation Fund 2013 Grant: \$50,000.00 Partner Contributions: \$56,000.00

Conservation International will conserve a vast area of coral reefs in Milne Bay, Papua New Guinea. The coral reefs and fisheries of Milne Bay are globally outstanding in terms of biological diversity and are essential to the survival of tens of thousands of people. Unfortunately, these reefs are threatened by human activities including over-fishing, destructive fishing, land-based pollution and sedimentation. Additionally, these reefs are vulnerable to climate impacts, especially if already degraded via direct human threats. The project team will work to achieve the following outcomes: 1) Strengthen the management effectiveness of the existing Nuakata labam-Pahilele Community Marine Managed Area covering 92,000 hectares including 10,000 hectares of no-take area, 2) Use a peer-to-peer mentoring approach to support neighboring communities to create additional managed areas covering 5,000 hectares of no-take and 50,000 square hectares of sustainable fisheries management; to create a resilient network over 140,000 square hectares with 15,000 square hectares of no-take zones, and 3) Develop and test a low-cost model for expanding the reach of community-based coral reef conservation across the remainder of the vast province of Milne Bay, aiming initially to have 15% of the marine resource base of participating communities in no-take areas and the remainder under effective fisheries management as a sustainable resource management best practice.

Strengthening Reef Management in the Grenada Bank – II, *Sustainable Grenadines Inc.*

Grenada

Coral Reef Conservation Fund 2013 Grant: \$72,200.00 Partner Contributions: \$76,000.00

Sustainable Grenadines Inc. will address priority capacity building needs for site level management of MPAs in the Grenada bank and develop capacity among members of the Grenadines Network of Marine Protected Areas. Individual members will carry out activities agreed upon by the network through small grants funded through this project. The activities will include enhanced enforcement of rule and regulations of individual member locals, improve stakeholder compliance with regulations through education, training on monitoring and evaluation, and increased communication and networking opportunities. The project will bring together staff from all member groups, government agencies, communities and other stakeholders to improve and expand the impact of the network. This project will continue to build the foundation of collaborative, consistent management that was developed during Phase I of this project. Finally, the project will fund grants to the members to delve deeper into enforcement, biophysical monitoring and socioeconomic monitoring needs. Altogether, this project will build a resilient network of marine areas that are effectively managed and that function effectively for community well-being, biodiversity protection, and as a critical climate change response mechanism.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Conserving Coral Reefs in Indonesia through Resilient Managed Areas, *Indonesia Locally Managed Marine Area Foundation*

Indonesia

Coral Reef Conservation Fund 2013 Grant: \$41,000.00 Partner Contributions: \$82,000.00

Apply an approach developed and implemented in two previously funded Coral Reef Conservation Fund grants to design resilient locally managed marine areas in three focal areas: Tanah Merah Bay, the Kei Islands, and the Banda Islands. The project will also train and mentor community partners in local management techniques, thus building the local capacity and ability to effectively implement and enforce their local regulations. The first grants focused on raising awareness of the issues impacting marine resources, including awareness of climate change impacts, vulnerability assessments, and development of adaptation plans to build resilience to climate change. Key adaptation strategies that were identified and applied in the second grant were the development of a network of managed areas, the integration of biodiversity conservation into management actions, sustainable fisheries development and climate change adaptation. The second grant also tested and refined the approach in one locally managed marine area. Through this project over 71,643 square hectares of coral reef and associated habitats will come under resilient conservation zoning and regulatory schemes and significantly strengthened management.

Implementing Locally Managed Marine Area Practices in the Solomon Islands, *Oceans Watch*

Solomon Islands

Coral Reef Conservation Fund 2013 Grant: \$40,000.00 Partner Contributions: \$40,000.00

Oceans Watch will work with local communities on Fenualoa Island to finalize the establishment of a network of educated Reef Guardians and work with the local chiefs to expand the footprint of no-take marine protected areas. The project team has been working with the communities on Fenualoa Island since 2010. These communities are subsistence communities that suffer food shortages and value their reefs as a source of fish. The increasing population and better fishing methods have upset the natural balance and the ecosystem is threatened. During long-stay annual visits, the project team works with conservation committees and Reef Guardians to implement a marine management plan that covers the entire area of reef that the islanders have customary fishing rights over. To date, 34 Reef Guardians have been trained in coral reef ecology and management with both quantitative and qualitative monitoring techniques. OceansWatch scientists will also begin the analysis of the total area of closures needed to restore biodiversity and to ensure sustainable use of marine resources.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Financial Sustainability of the Port Honduras Marine Reserve in Belize, Toledo Institute for Development and Environment
Belize

Coral Reef Conservation Fund 2013 Grant: \$28,800.00 Partner Contributions: \$100,660.00

The Toledo Institute for Development and environment will develop a paying volunteer program as a long-term financing mechanism for the Port Honduras Marine Reserve. Sustainable financing was identified as a priority need in the Caribbean Marine Protected Areas Network (CaMPAM) assessment for this location. Following the successful model used by organizations such as Blue Ventures, the project team will host groups of up to 16 volunteers who will pay to participate in biodiversity monitoring and conservation action. TIDE has conducted a detailed business analysis that gives realistic financial projections. The volunteer program is projected to break even by the end of the third year of activity and generate a profit by year four. As a subsidiary outcome, the program will provide the equivalent of up to 10 full time field staff. This human resources will enable the project team to achieve valuable research and monitoring and conservation objectives, including habitat mapping, marine mammal monitoring, sea turtle nest protection, lion fish culling and riparian reforestation.

Improving Near Shore Marine Ecosystem Management in Micronesia, Rare
Micronesia

Coral Reef Conservation Fund 2013 Grant: \$50,000.00 Partner Contributions: \$50,000.00

Rare, in collaboration with the Micronesia Conservation Trust, will improve near shore marine ecosystem management and effectiveness across the region. Project proponents will work at key marine sites to build greater community ownership and enforcement of zoning regulations, improve the health of coral reefs and near-shore environments. Through Rare's Pride campaign, the project team will use social marketing techniques to inspire people to take pride in their natural resources and to promote sustainable behavior and alternative practices in communities to benefit conservation. This program holds the promise of significant impact within Micronesia – enabling effective protection of 25% of all Micronesian marine protected areas within 3-5 years and potentially reaching 30% of the region's population. The goal of Rare's program in Micronesia is to promote effective near-shore management through strengthening existing marine reserves in combination with the adoption of sustainable land use practices. This builds a holistic ridge to reef approach which will engage and empower communities to protect island ecosystems.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Storm Runoff Remediation in Napili Bay (HI) - II, *Napili Bay and Beach Foundation, Inc.*

Napali

Coral Reef Conservation Fund 2013 Grant: \$28,000.00 Partner Contributions: \$28,000.00

Napali Bay and Beach Foundation, Inc. will conduct initial, substantive remediation of the seaward end of Napili 4-5 watershed, the ephemeral stream named "Napili Kahawai". The streambed and banks have been severely damaged over at least 20 years by uncontrolled storm runoff from the desilting basin above it. Now that the Napili 4-5 desilting basin has an operational outlet valve in place, the project team will complete phase two of the remediation: focusing on repairing the downstream channel, to prevent further heavy storm erosion and subsequent sediment outflow into the bay and onto the reef. In the process, the project team will plant streambed flora that help filter and slow future storm runoff, and protect any bare soil areas of the streambed. This project will also expand newly established Water Quality monitoring to document levels of nutrient pollutants often found in urban runoff, with goal of achieving DOH clean water standards for our bay. An additional goal of this project is to provide training for resort staff who use landscape, maintenance and cleaning agents which are harmful to reef biota.

Sustaining Coral Reef Fisheries in Puerto Rico - II, *University of Miami, Rosenstiel School of Marine and Atmospheric Science*

Puerto Rico, USA

Coral Reef Conservation Fund 2012 Grant: \$55,398 Partner Contributions: \$55,398

The proposed study will hold technical training workshops to train Puerto Rico fisheries scientists and managers in new coral reef fishery stock assessment technologies. The new assessment technologies were developed through previous funding from the National Fish and Wildlife Foundation. This project will build institutional capacity for analyzing the sustainability status of exploited species and providing the basis for formulation of rational management policies in regards to coral reef fisheries. The coral reef fisheries of the Puerto Rico reef ecosystem inhabited by hundreds of reef fishes, supports multimillion-dollar fishing and tourism industries. The sustainability of multispecies coral reef fisheries in Puerto Rico is a key conservation concern given their economic and ecological importance, the significant dependence of subsistence and artisanal fishers on reef fisheries for their livelihoods, and the considerable and growing threats to coral reef habitats (i.e. coral bleaching and disease, pollution and climate change). Sustainability refers to the ability of an exploited stock to produce goods and services, including yields at suitable levels in the short term, while maintaining sufficient stock reproductive capacity to continue providing these goods and services into the indefinite future. The long-term conservation outcome is to achieve sustainable levels of fishing for exploited groupers, snappers, and parrotfishes in Puerto Rico.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Engage West Maui Hotels in Watershed Management Planning, *The Coral Reef Alliance*

Hawaii, USA

Coral Reef Conservation Fund 2012 Grant: \$55,524 Partner Contributions: \$69,000

Hawai'i is facing three interrelated environmental issues: water scarcity, coastal nutrient pollution, and possible increases in water-borne infections. These issues are likely exacerbated by inadequacies in current water treatment and reuse infrastructure. CORAL's long-term objective is to help minimize all three of these threats by increasing the use of a straightforward technological solution: use reclaimed wastewater to lessen demand for potable water and reduce the need for the injection wells that are driving nutrient-laden wastewater to reefs. Perhaps more than any other constituent group, the hotel sector stands to gain from supporting and promoting wastewater reclamation. Hotels are major water users and therefore have a long-term interest in access to ample water. By shifting to reclaimed water for appropriate applications, hotels reduce potable water use, thereby realizing greater water security. Reclaimed water is also typically less expensive than potable water, creating an immediate financial incentive to use reclaimed water whenever possible. Finally, using reclaimed water helps keep coastal ecosystems clean and healthy, maintaining a lasting draw for hotel guests. Building on these existing incentives for the hotel sector, CORAL will complement the West Maui Watershed Project by ensuring that hotels, one of the most influential constituent groups, are well informed and actively seeking efforts to reduce potable water usage and increase water reclamation.

Coral Bay Revised and Expanded Watershed Management Plan (VI), *Coral Bay Community Council, Inc.*

U.S. Virgin Islands

Coral Reef Conservation Fund 2012 Grant: \$45,755 Partner Contributions: \$46,216

The Coral Bay Watershed Management Plan (WMP), published in 2008, spurred efforts by stakeholders to implement its key recommendations. A five-year update of the plan needs to be completed acknowledging implemented recommendations. Also, as a collection of actions within an overall management strategy (rather than a traditional technical plan), the WMP has several deficiencies including the lack of a watershed characterization report, the reconnaissance nature of the document, and its focus on sedimentation without addressing other watershed needs. The Coral Bay Community Council (CBCC) is proposing to update the WMP and reduce its shortcomings by following EPA's Handbook for Developing Watershed Plans to Restore and Protect Our Waters. CBCC's efforts will start with impairment cause and pollutant source identification, followed by pollutant load estimation. CBCC will then use these estimates to set goals, identify reduction targets, and develop management strategies and techniques. The final WMP will also include estimates of required assistance, progress criteria, and a monitoring plan. Long term, the updated WMP can be used by stakeholders to improve watershed conditions, and by management agencies to prioritize enforcement, management, and restoration activities. The document should be a model for developing additional Virgin Islands WMPs based on EPA's methodology in the continuing efforts by stakeholders to reduce negative coral reef impacts.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Stabilizing Streambanks And Reducing Erosion In South Kohala To Benefit Coral Reefs (HI), *The Kohala Center*

Hawaii, USA

Coral Reef Conservation Fund 2012 Grant: \$60,000 Partner Contributions: \$68,000

The watersheds of the South Kohala District on Hawaii Island and their associated streams have been altered by past land-use decisions, development, feral animals, invasive species, and fire. As a result, these watersheds contribute sediment and nutrients to near-shore environments, threatening the coral reef ecosystem. Makeahua Gulch, fed by one of the largest stream systems on this coast, drains into Pelekane Bay. Although these streams were perennial in the past, recent drought along with loss of vegetation cover have resulted in flashy streams that fill stream channels to capacity, but drop off within a day. Due to fire and drought in drier, leeward parts of the watershed, the soil has become hydrophobic, and infrequent storms result in overland flows with heavy sediment burdens, which dump tons of sediment onto the coral reefs of Pelekane Bay.

Enforcement Training to Benefit Coral in Micronesia, *Micronesia Conservation Trust*

Marshall Islands,

Micronesia, Palau

Coral Reef Conservation Fund 2012 Grant: \$66,000 Partner Contributions: \$30,800

This project will widen and strengthen law enforcement institutions supporting coral reef conservation in three Micronesian nations: Palau, the Federal States of Micronesia, and the Marshall Islands. Individual programs will work to improve site and jurisdiction-wide management by continuing to develop and implement: 1) enforcement plans for law enforcement units, 2) consistent standard operating procedures, and 3) informational and/or orientation guides, where applicable by building on an existing peer network of conservation officers and a well-received approach of practical training workshops, mentoring, and documentation. Building on previous efforts to develop capacity and overall professionalism of Conservation Officers, the goal of this project is to increase the ability of conservation enforcement units to carry out their mission effectively and safely. Improving compliance with and enforcement of marine management laws remains a challenge for many Micronesian jurisdictions. While tremendous strides have been made in establishing new protected areas, proactive fisheries regulations, and enforcement and compliance institutions throughout the region, significant needs remain. The project will support outcomes that improve institutional capacity to learn, share, and apply new skills and approaches that will lead to greater management effectiveness.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Building Enforcement Capacity and Sustainable Financing, Reef Explorer Fiji Ltd.

Fiji

Coral Reef Conservation Fund 2012 Grant: \$50,000 Partner Contributions: \$52,848

The fishing right owners in Fiji's Korolevu-i-wai district (KiW FROs) began formal resource management efforts in 2002 to halt the decline in marine resources in their traditional fishing ground. With the assistance of co-management partners, the KiW FROs created a holistic ride-to-reef marine management plan aiming to jointly address pollution threats, overfishing, and community development needs. This project will address three priority marine management needs identified by the KiW FROs. By working with co-management partners and relevant government authorities to undertake an awareness campaign in surrounding settlements of non-fishing right owners and displaying signs in public access areas, the KiW FROs hope to encourage further compliance with their marine conservation and management plan. By formalizing rules, penalties, processes, and institutional linkages and providing necessary information and tools to community fish wardens, the KiW FROs will strengthen local capacity for enforcement of management regulations. By working with local resorts and marine tourism operators to inform tourists of the community's conservation activities and solicit tourist donations, the KiW FROs hope to implement sustainable financing mechanisms to support their enforcement and management efforts. The long-term outcomes of improved financial resources and compliance to management regulations will ultimately benefit the livelihoods of KiW FROs through improved marine resource health.

Building A Network Of Resilient Coral Reefs In Eastern Indonesia Through Community Management, Indonesia Locally Managed Marine Area Foundation

Indonesia

Coral Reef Conservation Fund 2012 Grant: \$40,000 Partner Contributions: \$64,832

This project will advance coral reef conservation in Indonesia and the Asia Pacific region by supporting communities to lead the design of a resilient network of Locally Managed Marine Areas. The project will focus on the Padaido Islands in Papua where communities have requested that the current LMMAs be extended from one to four islands. This will result in expansion of coral reef conservation from 7,000 hectares to 117,500 hectares. The communities made this request late in 2010. Since that time ILMMA has carried out outreach with these communities but we have been focusing on building our capacity to ensure that we can properly support this expansion. This has included making sure the community members from our existing partner communities have sufficient skill to be the main teachers of the new communities. Additionally, new tools on climate change outreach and planning as well as those on the design of resilient LMMAs and LMMA networks provide a great opportunity to support this work. This project will adapt the new resilient design tool to support not just design of an LMMA network but the design of a resilient network. We will also be sure to communicate in this process with our colleagues in Micronesia and Papua New Guinea who are pursuing similar work. The ultimate outcome will be both greatly expanded conservation of coral reefs in Papua as well as the creation of advanced coral reef conservation approaches that can be pursued by other communities.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Creating Sustainable Financing and Capacity for St. Lucia Coral Reef Protected Areas, *Coastal Quest*

St. Lucia

Coral Reef Conservation Fund 2012 Grant: \$60,000 Partner Contributions: \$60,000

This project will address the issues contributing to the budget gap present at the Soufriere Marine Management Association (the Association) for marine protected area (MPA) management. The Association is a self-sustained not-for-profit NGO authorized by the Government of St. Lucia to manage both the Soufriere Marine Management Area (SMMA) and the Canaries & Anse La Raye Marine Management Area (CAMMA). The Association is in need of a long-term sustainable funding and financing strategy to finance their operating activities and capitalize on missed opportunities to protect the important ecosystems located within the SMMA and CAMMA. This project will work alongside Association staff to develop a 5 year sustainable financing plan to support the Association's management of the SMMA and the CAMMA. This project will also work to increase Association staff capacity in regard to sustainable financing and, wherever possible, this project will reach out to other MPAs in St. Lucia and the wider Caribbean in order to increase sustainable financing capacity throughout the region. The project will lead to two long-term outcomes: 1) Increase in the Association's annual MPA operation budget by at least 25% within 1-2 years and 100% within 5 years of implementation of the sustainable financing business plan; and 2) the Association staff is executing the sustainable financing business plan to ensure long-term funding security for the SMMA and the CAMMA.

Strengthening Grenada's Marine Protected Area Enforcement Capacity, *Grenada Fund for Conservation*

Grenada

Coral Reef Conservation Fund 2012 Grant: \$38,165 Partner Contributions: \$36,850

This focus of this project will be increasing enforcement capacity and effectiveness at Grenada's three MPAs, working with existing managers to better protect and conserve the MPAs' coral reef ecosystem and help ensure their health and resilience over time. Grenada's three MPAs are targeted. The long term conservation outcome is improved health and resilience of Grenada's three MPAs' coral reef and marine ecosystem through effective enforcement and increased awareness. This project proposes to carry out enforcement training and create a MPA enforcement program that can be used for long-term management of Grenada's three MPAs. This program will be adaptable to changing circumstances (stressors, resource uses, financing) and needs. This project will also strengthen local cooperative enforcement partnerships, and develop and implement an awareness and communication program. Reduction in infractions and existing threats through improved enforcement, management conservation and understanding of coral reef ecology, combined with strengthened enforcement partnerships and effective education and outreach, will help ensure the reefs health and resilience over time.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Build Local Capacity for Community Reef Fisheries Monitoring in Indonesia, *Conservation International Foundation*

Indonesia

Coral Reef Conservation Fund 2012 Grant: \$30,000 Partner Contributions: \$32,523

Many Papuan coastal communities depend entirely on the ocean's resources for their livelihoods. Unfortunately, due to the communities' traditionally low capacity and political marginalization, outside interests have severely exploited these resources. The Bird's Head Seascape (BHS) initiative, facilitated by CI, TNC, and our local partners, aims to equip Papuan communities with the tools and capacity to protect their marine resources from destructive outside interests, and to more sustainably manage them for their own use. This project builds on a NOAA-sponsored training on Sustainable Fisheries, providing an opportunity for local community fishers to apply the lessons learned from NOAA as they develop and manage community fisheries monitoring programs. Its short-term outcomes are as follows:

1) By the start of 2013, a community fisheries monitoring team with at least five local fishers has been established in each of the three pilot sites—Kaimana, Kofiau, and Ayau MPAs—and has been trained and equipped to gather critical fisheries data to quantify total catch and effort for one locally important fishery in their MPA 2) By the start of 2014, the community fisheries monitoring teams in each of the three pilot sites—Kaimana, Kofiau, and Ayau MPAs—have collected a year's worth of fisheries data for one locally important fishery in their MPA and presented initial results and management recommendations to the local communities and to the Department of Marine Affairs and Fisheries.

Guanica Treatment Wetlands and Stormwater Wetland Design, *Paul Sturm*

Puerto Rico, USA

Coral Reef Conservation Fund 2011 Grant: \$341,128 Partner Contributions: \$50,000

Ridge to Reefs will design and build six to ten acres of treatment wetlands to address the largest single nitrogen source to Guanica Bay. An additional two acres of wetlands will be designed to address runoff from the town of Guanica entering the site. This project represents a low cost method of addressing nutrient pollution from treatment plants and urban areas (10 times less expensive than other urban management practices/and septic upgrades) will serve as a model for Puerto Rico where nitrogen loads have increased an estimated 5-7 times the historic levels. Educational signage and coordination with the Municipality of Guanica will be key components of this effort in order to expand the project to address stormwater runoff and increase public use through creating park space for the community.

Educational Products in Support of Culebra's No Take Marine Protected Area in Puerto Rico, *CORALations, Inc.*

Puerto Rico, USA

Coral Reef Conservation Fund 2011 Grant: \$10,140 Partner Contributions: \$10,144

Update poster graphics for three existing wooden interpretive signs found at terrestrial access points to protected areas around Culebra. This update will include ongoing research inside Culebra's coral reef resources on inlaid poster, as well as to re-design some aspects on the wooden signs to better convey a more focused educational coral reef etiquette message that is easier for local students and visiting volunteers to continue to maintain.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Improved Reserve Management through Community Participation (PR), *University of Puerto Rico - Mayaguez*

Puerto Rico, USA

Coral Reef Conservation Fund 2011 Grant: \$18,641 Partner Contributions: \$18,734

Increase community participation within the Tres Palmas Marine Reserve by facilitating the incorporation of a local non-governmental organization that functions under the guidelines of the local conservation management plan, and increasing compliance by designing a Volunteer Ranger program for the marine reserve. The Tres Palmas Marine Reserve protects one of the healthiest breeding stands of Elkhorn coral in Puerto Rico. This reserve is a priority site for the state coral program; however, coral health within the reserve continues to decline, largely due to non-compliance with management regulations, resulting in illegal fishing and recreational misuse. The reserve has no on-site staff, dedicated enforcement officers, nor office space to address the need for improved regulatory compliance and management of threats to the reserve. Through the establishment of this organization, greater community involvement in conservation actions will improve protection of this important coral ecosystem.

Ahihi-Kinaiu Marine Protected Area Management (HI), *Hawaii Department of Land and Natural Resources*

Hawaii, USA

Coral Reef Conservation Fund 2011 Grant: \$70,404 Partner Contributions: \$87,468

Employ an Education and Outreach Coordinator at the Ahihi-Kinaiu Natural Area Reserve. The reserve currently has healthy reefs with high diversity and abundance of marine life. Current threats include poaching and human recreational impacts. The Coordinator will reduce and eliminate human threats to reefs in the Reserve by establishing a volunteer program and targeted community education. Outreach activities will include improving visitor/user awareness of regulations within the protected area; promoting low-impact behavior through educational materials and a "good stewardship etiquette while visiting" program. Project partners include the state, The Nature Conservancy and a community advisory group. Short-term outcomes will include increased levels of voluntary compliance with: (1) low-impact visitor use guidelines; (2) no access rules into designated sensitive areas; (3) no harvest rules; and (4) no motorized vessel entry.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Pelekane Bay Watershed Restoration (HI), *The Kohala Center*

Hawaii, USA

Coral Reef Conservation Fund 2011 Grant: \$68,373 Partner Contributions: \$96,000

build upon ongoing efforts to reduce land-based sediment inputs into Pelekane Bay. From 2009-2011, the Kohala Watershed Partnership, through previous funding, implemented a large-scale restoration project on this agricultural watershed that involved construction of 18 miles of fencing, removal of a population of 500 feral goats from the watershed, creation of a 400-acre restoration enclosure along two stream corridors, and protection or outplanting of 90,000 native plants. This project will maintain outplantings, fencing, and sediment mitigation infrastructure to ensure the long-term viability of the project. The project will also address new areas of bare ground through the implementation of both physical barriers, including the construction of 20 sediment check dams & address erosion from 30 acres of bare ground, along with biological restoration. 5000 native trees, shrubs, grasses and forbs will be added into the restoration enclosure to rehabilitate this former dry forest ecosystem to increase infiltration and reduce run-off. Over time, as less sediment flushes into the bay, the corals and associated reef fish populations will recover.

Building Capacity for Management of Invasive Lionfish in the Caribbean, *Reef Environmental Education Foundation*

Bahamas, Mexico, Florida

Coral Reef Conservation Fund 2011 Grant: \$37,600 Partner Contributions: \$45,600

Translate and disseminate a Best Practices Manual on how to address the invasion of two species of indo-pacific lionfish in western Atlantic and Caribbean waters to Spanish-speaking countries in the region and organize and conduct hands-on training workshops for resource managers. These two species of indo-pacific lionfish have recently become the first non-native marine fish to successfully invade western Atlantic and Caribbean waters. Through their predation on native species, uncontrolled impacts are expected to be severe. Recent collaborative efforts to address the invasion have resulted in international collaborations and directives to build local and regional capacity to minimize impacts. Project outcomes for this effort will include creation and dissemination of a Spanish language reference document providing current information on the lionfish invasion and best strategies from around the region to minimize impacts. In addition, workshops to provide hands-on training in lionfish collecting, handling, dissection, research and monitoring will provide on the ground managers and key stakeholders with skills and knowledge to safely and effectively implement removal and control strategies.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Socioeconomic Monitoring in Verde Island Passage, Philippines, *Conservation International Foundation*
Philippines

Coral Reef Conservation Fund 2011 Grant: \$29,987 Partner Contributions: \$29,995

Conduct a pilot phase of long-term socioeconomic monitoring in the Verde Island Passage protected area network, Philippines. The applicant will use lessons learned from baseline data collection and initial implementation methodologies to select pilot coral reef areas to refine the monitoring protocol in the communities throughout the Verde Island Passage. With locals trained as interviewers, the communities' capacity to replicate the process will be enhanced. Data collected will inform adaptive management of the associated protected reef areas, inform a variety of audiences, including local communities and stakeholders, local and national governments, development agencies, and partners, and contribute substantially to reaching conservation targets established by government partners. Producing quantitative evidence of the benefits of a network of small protected areas would be groundbreaking at a global level. Target areas will include mangroves, seagrasses, and coral reefs, all of which are expected to be impacted by higher sea temperatures, increasing storm events, and other changes to ocean conditions.

Socio-economic Monitoring by Caribbean Challenge Marine Protected Area Managers, *Centre for Resource Management and Environmental Studies (CERMES), The University of the West Indies*
Grenada, St. Lucia, St. Vincent and the Grenadines

Coral Reef Conservation Fund 2011 Grant: \$63,186 Partner Contributions: \$63,186

Invite three Caribbean Challenge countries (Grenada, St. Vincent and the Grenadines, and St. Lucia) to participate in a 7-day regional socio-economic training workshop. Building capacity of human resources involved in marine protected area management is important in facilitating improved and effective management. Each participating training site will be given the opportunity to apply for a small grant of USD 2,500 to assist in the initiation of monitoring. It is expected that 8 training sites will be ready to start monitoring within the timeframe of this project. The long-term conservation outcome of this project is that of increased capacity for effective MPA management among Caribbean Challenge countries through the use of social and economic monitoring data in MPA decision-making. Specific project outcomes include 20 trained MPA practitioners; 8 established site monitoring programs, shared information for improving socio-economic training; and shared project findings and lessons learned with the region.

Enhancing Coral Reef Resilience in Indonesia and Timor-Leste, *Indonesia Locally Managed Marine Area Foundation*

Indonesia

Coral Reef Conservation Fund 2011 Grant: \$41,000 Partner Contributions: \$80,000

work to improve, expand, and sustain its low cost community-based coral reef conservation model. The applicant has proven that communities can successfully design and implement effective (and in some cases large) managed areas. Given the growing threats to coral reefs, the strengthening and expansion of this model will have an extremely positive impact on coral reef conservation. In addition, the applicant is working to ensure that communities have the skills to consider the impacts of climate change in their management strategies. This project will improve the capacity of eleven existing communities (covering 151,366 hectares of coral reef) and four new communities (covering an additional several thousand hectares) to plan, operate, and adaptively manage their protected areas including consideration of climate change impacts.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Mitigation of Upland Impacts on Coral in West Maui Watersheds (HI), *Malama Kahalawai, Inc.*

Hawaii, USA

Coral Reef Conservation Fund 2011 Grant: \$64,167 Partner Contributions: \$64,325

in partnership with the Pu'u Kukui Watershed Preserve, build the last 0.6 mile link of a 1.8 mile ungulate exclusion fence in the upper reaches of the Honolua Watershed. This fence will prevent further ungulate disturbance to watershed forests, allow for the stabilization of soils and native vegetation above the fence and reduce sedimentation to watershed streams. This project covers 6,300 acres of upland forests and is in alignment with the goals of multiple agencies working in the mid and lower portions of the watershed. Together projects and agencies are trying to reduce the sedimentation and coral die-off that is impairing the Honolua/Mokulei'a Marine Life Conservation District found at the mouth of the Honolua Stream. This marine area is cherished for its marine diversity, recreation and aesthetic values and it appeals to locals and tourists alike. Together, the partnership is working to implement changes in the entire watershed, from the mountains to the sea. The long term conservation outcomes are both to reduce sedimentation of the Honolua/Mokulei'a protected area and surrounding coastal waters and to maintain healthy ecosystem function in the upland forested watershed.

Improving Law Enforcement and Coral Reef Systems Management in the Philippines, *Municipal Agriculturists Office*

Phillippines

Coral Reef Conservation Fund 2011 Grant: \$8,000 Partner Contributions: \$6,173

Increase local government capacity to protect and conserve coral reef resources of Taytay Bay a marine area within the Coral Triangle. With these funds, the local government will gain the material and technical capacity to greatly improve fishery law enforcement and marine protected area management. The Office of the Municipal Agriculturists will gain the necessary materials to conduct law enforcement through all areas of the municipal waters and clearly mark three newly established protected areas with marker buoys and signs. In order to increase compliance with local laws the local government will conduct environmental and managed area awareness campaigns in nearby communities, which will culminate in the establishment of a fully functional guardstation at the Dinot Island marine protected area constructed largely from plastic trash and bottles collected and prepared by school children from these communities, thereby increasing stakeholder investment in this area and concern for environmental conservation. Finally, the fisheries staff will gain the capacity to conduct biophysical and socioeconomic surveys from expert trainers from nearby universities, including the regional Socioeconomic Monitoring coordinator. The local government will then establish a regular schedule of biophysical and Socioeconomic Monitoring surveys in the area to ensure the ongoing monitoring of fisheries conservation practices, particularly marine protected area management.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Improving National Coral Reef Management in Vietnam, *Centre for Marinelife Conservation and Community Development*
Vietnam

Coral Reef Conservation Fund 2011 Grant: \$40,000 Partner Contributions: \$40,000

Will implement Socioeconomic Monitoring Southeast Asia methodology and training in two national-level coral reef reserves in Vietnam. The goal of this project is to improve the management of coral reef conservation sites in Vietnam through the implementation of coastal management plans, guided by the results and recommendations of socioeconomic monitoring at two selected sites. In order to meet the objectives of this project, twelve local people from selected project sites will be thoroughly trained in survey methodology and take part in the implementation of monitoring projects at two proposed sites. In addition to building management capacity, community engagement programs will be implemented to promote the involvement of coastal residents in coastal sites. Trainees and experts will serve as a catalyst to further promote a nation-wide use of socioeconomic data as applied across the broader marine protected area Network. Ultimately, this will help towards developing Vietnam's knowledge and expertise in socioeconomic monitoring methodology.

Payment for Ecosystem Services to Finance Marine Protected Areas, *Forest Trends Association*
Colombia, Washington, DC

Coral Reef Conservation Fund 2010 Grant: \$50,000 Partner Contributions: \$200,000

The San Andres Archipelago is one of the most extensive coral reef areas in the western hemisphere. The coral reefs, banks, and atolls are especially complex and productive due to the open ocean location, currents, and wave action. To protect this significant marine biodiversity, Colombia declared its first marine protected area (MPA), the Seaflower MPA, currently the largest MPA in the Caribbean and 7th largest in the world. The objective of this project is to develop and launch a pilot initiative of marine payment for ecosystem services (PES) as a sustainable financing mechanism for the Seaflower MPA, while raising awareness of the importance of coral reefs and other marine ecosystems and the ecosystem services they provide to safeguard human well-being. PES has been successfully used to conserve terrestrial ecosystem services, but is just developing for marine systems. Forest Trends will partner with CORALINA, the regional autonomous representative of Colombia's National Environment System for the archipelago and Seaflower management authority, to train MPA staff and work with stakeholders to develop and test PES as a sustainable income-generating mechanism to allow MPA management activities to be self-financed. The project will focus on the "sun, sand and sea" tourism sector or, alternatively, and the commercial fishing industry to develop PES deals that harness private sector funding for conserving the crucial marine ecosystem services which directly benefit them.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Nutrient Pollution Reduction in American Samoa, *Coalition of Reef Lovers*

American Samoa, USA

Coral Reef Conservation Fund 2010 Grant: \$48,646 Partner Contributions: \$50,199

Detergents containing high amounts of active phosphates can cause algae blooms that can kill corals and reduce the water quality on coral reefs. The Government of American Samoa (ASG) issued an executive order in 2007 that banned the importation of all detergents containing over 11% reactive phosphates. While the duty for the enforcement was placed upon the AS Customs department, they currently lack the tools to enforce the ban as many of the detergents entering the Territory are of foreign origin and lack contents and concentrations on their packaging. This project is a collaborative effort between The Coalition of Reef Lovers and the ASG Environmental Protection Agency. The project will analyze 100 types of foreign detergents being sold in American Samoa for their reactive and total phosphate contents. From the analysis and data gathered a High Phosphate Detergent Guide will be created that shows which soaps are banned and which soaps are allowed using a pass or fail grading system. The ASAEPA will conduct a workshop to train AS Customs in the guide's usage. Additional water quality testing will be conducted on six streams for surfactants and phosphates to obtain baseline information on the amounts of detergents entering those streams from grey water discharge lines. This project will also have an educational component to inform the store owners and public about the problems that high phosphate soaps cause to their streams and marine habitats.

Coral Reef Recovery Team for Maui, Hawaii, *Maui Nui Marine Resources Council*

Hawaii, USA

Coral Reef Conservation Fund 2010 Grant: \$50,000 Partner Contributions: \$50,000

The Maui Nui Marine Resource Council (MNMRC) requests support for a locally-based coral reef recovery team. Maui's coral reefs are fast declining, and effective, timely solutions are needed. Land-based pollution, reef fish declines, invasive algae, and sea changes related to climate threaten coral reefs. The team will apply scientific and place-based knowledge of coral reef ecosystems in developing technical and policy remedies. A primary goal is to better align local and state decision making with environmental requirements for coral reef conservation. The recovery team will consist of a core working group and an advisory panel with expertise in marine biology, resource management, and community-based knowledge. Anticipated near-term outcomes include: review and analysis of information and expert opinion on Maui's coral reefs; an assessment of current management efforts and implementation of existing plans intended to protect coral reefs; assistance to the MNMRC, Maui County, and others with information for public outreach and education; and progress in developing an interagency coral reef recovery program with standards and recommendations for restoring fish populations and reducing near shore pollution. Expected long-term outcomes include state-of-the art planning, technologies, and management policies and programs adequate to safeguard coral reefs.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Storm Runoff Remediation in Napili Bay (HI), *Napili Bay and Beach Foundation, Inc.*

Hawaii, USA

Coral Reef Conservation Fund 2010 Grant: \$24,000 Partner Contributions: \$24,410

This project is a first step toward remediation of storm runoff events which have negatively impacted Napili Bay. Multiple heavy winter storms have resulted in silt-filled runoff overwhelming an existing desilting basin (Napili Basin 4-5), causing flooding of nearby properties, erosion of a seasonal streambed and the sandy beach, as well as deposition of silt and debris on our coral reef and other benthic habitats. We are seeking funding to remediate storm runoff through installation of a functional outlet drain in Basin 4-5 to facilitate controlled release during heavy storms. We also plan to install 'rain garden' plantings below the basin to capture, filter, and slow down storm runoff. In addition, we will install educational signage to inform all stakeholders as to responsible use of the basin, streambed, and reef to preserve and protect the impressive natural resources in Napili Bay. Community members will partner with West Maui Soil and Water Conservation District, Maui County Public Works Department, and NRCS to accomplish this project. Our goal is to eliminate all further storm runoff damage from Napili Basin 4-5 as a first major step in protecting and improving the health of our reef and bay waters.

Addressing Stormwater Runoff Impacts to Coral Reefs in La Parguera, Puerto Rico, *Center for Watershed Protection, Inc.*

Puerto Rico, USA

Coral Reef Conservation Fund 2010 Grant: \$75,000 Partner Contributions: \$80,000

La Parguera is a coastal town that entertains over 100,000 visitors a year. Tourists come to enjoy the diverse coral reefs that are also home to threatened *Acropora palmata* and *A. cervicornis*. However, stormwater runoff from the hillside town and streets flow directly into the tidal waters and mangroves carrying high levels of pollutants that are damaging the nearshore coral reefs. This project will address land based sources of pollution by creating a Green Infrastructure Master Plan that includes conceptual designs for specific discharge points and sediment source areas to reduce pollutants entering nearshore coral areas. An initial innovative demonstration stormwater practice will set an important, one of the first of its kind, precedents in coastal communities in Puerto Rico (PR). In addition, storm event monitoring ports will be established to measure the effectiveness of the stormwater retrofit at removing target pollutants. Strong partnerships have been established to ensure project success including professors and students from UPR Rio Piedras and UPR Mayaguez in landscape architecture and engineering, Center for Watershed Protection, the engineering community, municipality of Lajas and PR Sea Grant. Project outcomes are the following: 1) decrease coral reef pollution loading; 2) build PR stormwater management capacity; 3) reduce stress to threatened corals; and 4) increase public awareness of land based sources of pollution and their solutions.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Reef Ecosystems Improvement through Effective Fisheries Governance, *Coastal Conservation and Education Foundation, Inc.*

Philippines

Coral Reef Conservation Fund 2010 Grant: \$75,000 Partner Contributions: \$130,869

Overfishing and degradation of coastal ecosystems threaten fish stocks in Tañon Strait, Central Philippines with collapse. The project aims to improve reef ecosystem health and demersal fisheries through management of a MPA network complemented with select EBFM tools in four municipalities in Far Northern Cebu Province covering 17 MPAs. It has three component objectives as follows: i) improve management capacity of 200 local government units (LGUs) and community managers on coastal and fisheries management; ii) develop and capacitate a constituency for MPA network at the community, municipal and inter-LGU levels for effective management, enforcement, monitoring and policy development; and iii) integrate biophysical, socio-economic and governance measures into the coastal monitoring and evaluation program of the four municipalities to improve coral reef management. With improved and sustained governance in coastal and fisheries management, the project will contribute to the long-term goal of securing cheap food sources and livelihoods of at least 26,850 municipal fishers dependent on Tañon Strait in a span of 10 years. Reef fish biomass will improve from very poor levels (0.04 mt/km²) to moderate as coral ecosystem health and other key habitats are improved from poor (21.59%) to good conditions (50-74.99%) because of effective and sustained protection, management and conservation of corals and other coastal ecosystems by educated fishers and capacitated local authorities.

Improving Stakeholder Awareness for Fisheries Management in Micronesia, *Kevin Layne Rhodes*

Micronesia

Coral Reef Conservation Fund 2010 Grant: \$37,790 Partner Contributions: \$37,950

The Pohnpei, Micronesia, coral reef fishery is a central to the island's cultural, social and economic fiber. The fishery targets 153+ species, with an estimated catch volume of 1,000 MT per annum and a gross value of more than \$1 million. It is crucial to both socio-economic stability and food security. The fishery is, however, threatened by growth and recruitment overfishing and the use of unsustainable fishing practices. Several species are endangered and in need of immediate protection. Current fisheries laws are sparse, lack scientific merit and are ineffective in protecting resources. To inject sustainability into the fishery, promote wise use practices and ensure long-term socio-economic stability, the proposed project will conduct a series of government-NGO-stakeholder seminars and workshops to produce a comprehensive reef fisheries management plan. The workshops will involve all levels of government and the private sector to produce a science-based, stakeholder-supported, biologically meaningful and logistically feasible management plan. The plan represents the culmination of 12 years of university, NOAA and NFWF-funded research that has documented not only the fishery, but also species life histories and habitat use, and public perceptions to resource decline and management support. Combined findings provide the basis for management initiatives and plan development, and have been instrumental in raising government-NGO-stakeholder awareness and support.



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Strengthening Reef Management in the Grenada Bank, *Sustainable Grenadines Inc.*

Grenada, St. Lucia, St. Vincent and the Grenadines

Coral Reef Conservation Fund 2010 Grant: \$70,000 Partner Contributions: \$70,500

The coral reefs of the Grenada Bank are seriously threatened due to increasing tourism in the area, development, overfishing, climate change and poor management of protected areas. Although both Grenada and St. Vincent and the Grenadines, who share the trans-boundary Grenada Bank, have made commitments to implement the Convention on Biological Diversity (CBD) Program of Work on Protected Areas (PoWPA) by effectively conserving at least 10% of their near shore marine areas by 2012, a large area of ecologically important marine habitats remain unprotected and unmanaged. The Strengthening of MPA Management on the Grenada Bank project aims to strengthen the management capacity of Marine Protected Areas in the Grenada Bank, through improved networking of existing Marine Protected Areas, increased understanding and enforcement of environmental legislation, training opportunities for Marine Protected Area management and staff and finally, increased public education and outreach on how to protect coral reef habitat. The long term conservation outcome is a resilient network of MPAs that are effectively co-managed by community and government that function effectively for community well-being, biodiversity protection (especially coral reefs) and as a critical climate change response mechanism. This project builds upon and creates linkages among ongoing efforts of a number of conservation partners including the implementing unit, the Sustainable Grenadines Project.

Improving Management of Marine Protected Areas in Belize, *Southern Environmental Association*

Belize

Coral Reef Conservation Fund 2010 Grant: \$85,450 Partner Contributions: \$85,450

The Southern Environmental Association (SEA) is responsible for the management of three marine protected areas within the Southern Barrier Reef Complex (SBRC). In 2008 SEA along with partners completed a Conservation Action Plan for the SBRC. This particular project will begin implementation of three of the objectives identified within that plan. The projects goal is increased coordination between the enforcement and science programs to support adaptive management of the SBRC. This will include a comprehensive assessment of the current status and impacts of SEA's science and enforcement programs including database development, data analysis, monitoring and enforcement and implementation activities to improve integration between the two programs. The objectives this project will begin to address include: By 2013, illegal fishing activities within the SBRC will be reduced to a level comparable with the Gladden Spit Marine Reserve's 2008 level: By 2019, populations of commercial species are increased by 20% from current stock assessments as a result of effective management; By 2019, populations of fish at Spawning Aggregation Sites will be stabilized & sustained within the SBRC through good resource-use practices.

It is expected that this project will pave the way for the successful monitoring and implementation of these goals by the development of baseline levels and targets. The project will also help to support SEA as it implements ecosystem based fisheries management



NFWF



NOAA
CORAL REEF
CONSERVATION PROGRAM

Coral Reef Sustainable Destination Model: Advancing Resilience in Kubulau, Fiji, *The Coral Reef Alliance*

Fiji

Coral Reef Conservation Fund 2010 Grant: \$55,000 Partner Contributions: \$55,000

After 5 years of CORAL-led support and capacity building, the Kubulau Resource Management Committee (KRMC) is at a critical tipping point. With a business plan, revenue-generating mechanisms, and the appropriate tools and training, CORAL will implement a five-year exit strategy so that the KRMC can begin a fully autonomous role in the management and conservation of the Namena Marine Reserve. During this first year, CORAL will meet three objectives:

1. Implement the first-of-its-kind business plan for the Namena Marine Reserve to build capacity;
2. Launch two community-run, micro-enterprises in the Kubulau District through a pilot micro-loan program. Repaid loans will be used to establish a seed fund for the start-up of additional community enterprises;
3. Train a minimum of eight CORAL Reef Leaders to engage the broader Kubulau community and tourism businesses to be active participants in the Namena Marine Reserve's growth and preservation.

Well-managed MPAs are the first and best line of defense against the global threat of climate change: eliminating local threats builds the reefs' resilience to increased sea surface temperatures, thus buying time for reefs as we gain the upper hand on our climate. Creating model Coral Reef Sustainable Destinations and expanding their impact by sharing lessons learned with neighboring communities and islands will have a demonstrable effect on protecting coral reef resources.