

National Fish and Wildlife Foundation

Coral Reef Conservation Fund 2013 - Submit Final Programmatic Report (New Metrics)

Grantee Organization: Ridge To Reefs, Inc.

Project Title: Developing a Watershed Action Plan for Cabo Rojo, Puerto Rico

Project Period	7/01/2013 - 6/15/2015
Project Location	Cabo Rojo is in the SW corner of Puerto Rico. The watershed contains agriculture, urban and forested areas.
Description (from Proposal)	
Project Summary (from Proposal)	Develop a watershed management plan to identify goals for coral reef health in Cabo Rojo and priority projects and actions to meet these goals.
Summary of Accomplishments	<p>Completed a watershed plan for Cabo Rojo watershed in Western Puerto Rico. The plan included identification of source areas of contamination including illicit discharges, identification of restoration opportunities, calculation of restoration benefits and extensive baseline coral reef and water quality work.</p> <p>In addition, a erosion and sediment control training was performed in Cabo Rojo to better inform the community, contractors and municipal staff.</p>
Lessons Learned	<p>Small coastal watersheds within Cabo Rojo particularly those that are developed have a significant impact on water quality.</p> <p>Poorly functioning septic systems and the lack of sewage connections even when the community already has sewer are problematic.</p> <p>Effective engagement of the community in fieldwork and active restoration is a key component of building momentum for restoration and additional actions.</p> <p>Engaging communities individually was an effective strategy – Puerto Real, Corozo, Joyuda and Cabo Rojo given a very large watershed and relatively strong community identity</p> <p>Monitoring reefs, nearshore waters and freshwater source areas of contamination were important aspects to build multiple lines of evidence for contamination and to target restoration sites and opportunities. It also helps to set a baseline from which to measure future improvements.</p>

Activities and Outcomes

Funding Strategy: Capacity, Outreach, Incentives

Activity / Outcome: Coral - Outreach/ Education/ Technical Assistance - # people reached

Description: Enter the number of people reached by outreach, training, or technical assistance activities

Required: Recommended

people reached - Current: 0.00

people reached - Grant Completion: 100.00

Notes: # of people reached through stakeholder outreach and erosion and sediment control training

Funding Strategy: Planning, Research, Monitoring

Activity / Outcome: Coral - Management or Governance Planning - # plans developed

Description: Enter the number of plans developed that had input from multiple stakeholders

Required: Recommended

plans developed - Current: 0.00

plans developed - Grant Completion: 1.00

Notes: 1 A-I watershed plan approved by EPA and developed for a priority watershed of both NOAA and PR DNER.

Funding Strategy: Capacity, Outreach, Incentives

Activity / Outcome: Coral - Building institutional capacity - # FTE with sufficient training

Description: Enter the number of staff or full-time equivalents with sufficient training and skills engaged in conservation activities

Required: Recommended

FTE with sufficient training - Current: 1.50

FTE with sufficient training - Grant Completion: 4.00

Notes: Additional staff with Protectores de Cuencas as well as staff with Surfrider Rincon now have expertise in watershed planning, outreach and tracking sources of pollution.

The following pages contain the uploaded documents, in the order shown below, as provided by the grantee:

Photos - Jpeg
Other Documents
Other Documents
Final Report Narrative - Marine

The following uploads do not have the same headers and footers as the previous sections of this document in order to preserve the integrity of the actual files uploaded.



Final Programmatic Report Narrative

1. Summary of Accomplishments

The project completed a Watershed Action Plan with an extensive public stakeholder input process for the greater Cabo Rojo watershed. Cabo Rojo is a Puerto Rico and NOAA Priority Watershed and Coral Reef Area. The watershed plan, priority restoration projects, pollution tracking and baseline coral reef, habitat and fisheries information were successful outputs and have already led to implementation and further studies. Two implementation projects (summarized below) and one follow up water quality study have been initiated or completed. The Municipality of Cabo Rojo is highly engaged and has supported a recent restoration project with labor, machinery and match to reduce sediment to Boqueron Bay and has pledged support and partnership for future implementation projects. Two additional priority projects are budgeted by the Municipality including connection of the public beach area to sewer and green infrastructure at a park that is slated for redevelopment/improvements. Training for erosion and sediment control resulted in over 30 people being trained in erosion and sediment control practices including contractors, general public and public works staff. Also, there has been significant buy-in from USFWS, Cabo Rojo and Department of Natural and Environmental Resources (DNER).

2. Project Activities & Outcomes

Activities

Table 1. Tasks Schedule and Costs Cabo Rojo Watershed Project		
Task	Rationale	Status
Subwatershed delineation	Map drainage areas and lands contributing to key drainage points in the watershed	Complete
Delineation of exposed soil areas	GIS aerial images will be used with remote sensing techniques to identify exposed soil areas	Complete
Assessment of live coral cover in the Cabo Rojo area	Necessary to have clear metrics	Complete
Tracking of source areas of contaminants via nearshore monitoring and stream monitoring and tracking	Bacteria, ammonia, and detergents used to track sources of contamination	Complete
Stakeholder Meetings	Inform and engage the community in the project.	Four stakeholder meetings were completed with the community for this project Complete
Stream/River assessments	Water contamination and legacy sediment can be identified by field assessments	Over 40 sites were evaluated for water contamination and 10 sites were evaluated for legacy sediment

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Table 1. Tasks Schedule and Costs Cabo Rojo Watershed Project		
Task	Rationale	Status
Erosion Sediment Control (ESC) Training, Education and Enforcement Strategies	Training in watershed jurisdictions with collaboration EPA/EQB	Over 30 members of the community were trained in erosion and sediment control including the Municipality of Cabo Rojo (MCR) Complete
Development of restoration project concepts to address sewage related issues, exposed soil, and streambank stabilization	Actions to systematically address land based sources of pollution common in Cabo Rojo	Complete
Creation of a watershed plan that meets EPA A-I criteria	Methods are summarized in the preceding rows and exceed A-I criteria	Watershed plan was approved by EPA as meeting the A-I Criteria Complete
Review of the Cabo Rojo watershed plan by NFWF, EPA, DNER and NOAA	Buy-in and review from key agencies	All the agencies as well as the Municipality of Cabo Rojo reviewed the document Complete
Publish the final watershed plan	Distribution to stakeholders and agencies	Final Document Distributed to Agencies as well as the clickable map and coral reef report Complete

Outcomes

Describe progress towards achieving the project outcomes as proposed. and briefly explain any discrepancies between your results compared to what was anticipated.

- Overall the watershed plan, restoration projects, pollution tracking and baseline coral reef, habitat and fisheries information were very good products and have already led to some implementation and further studies
- A total of four implementation projects and one follow up water quality study have been funded or completed
- The Municipality of Cabo Rojo is highly engaged and has supported the recent restoration project with labor, machinery and match to reduce sediment to Boquerón Bay and has pledged support and partnership for future implementation – two priority projects are budgeted by the Municipality including connection of the public beach area to sewer and green infrastructure at a park that is slated for redevelopment/improvements
- Training for erosion and sediment control resulted in over 30 people being trained in erosion and sediment control practices measures and implementation including contractors, public and public works staff
- The organizations that participated in the erosion and sediment control training included the Cabo Rojo and Lajas municipal public works departments, the planning department of Cabo Rojo, members of community NGOs as well as several local contractors. EPA and the Puerto Rico Environmental Quality Board were invited but did not attend.
- Lectures on the approach and background information on the important of erosion and sediment control for coral reefs as well as and suite of effective practices were presented. In the field, hands on demonstrations for

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- Due to economic conditions very little active development is occurring in the Cabo Rojo area and some expected sediment load reductions for improved erosion and sediment control enforcement will take longer to achieve than the project duration and original expectations.
- We had less success than anticipated at bringing EPA and EQB to the table to address sewage contamination issues in the Cabo Rojo watershed
- EPA had pledged \$20,000 through a supplemental environmental project for Puerto Real during the course of the project but did not deliver on those funds. RTR/PDC staff were somewhat hesitant to have landowners in Puerto Real sign agreements when EPA funds were not guaranteed and have not been reliable in the past.
- The poor quality of land use data particularly for tree crop agriculture limited our ability to identify acreages for conversion to shade coffee and control of sediment from coffee farm roads

Provide any further information (such as unexpected outcomes) important for understanding project activities and outcome results.

- Approximately 2 acres were hydroseeded and restored in Cabo Rojo near El Faro and Playa Sucia due to a serious fire that occurred in this area. The project was led by Protectores de Cuencas with significant support, labor, watering and other match were provided by DNER, and volunteers.
- DNER funded a high priority restoration project to build sediment traps to protect Boquerón Reserve from sediment impacts caused in part by a large abandoned development site in Cabo Rojo/Boquerón. Protectores de Cuencas was the construction contractor and GME Engineering was the designer and project manager -- the project is anticipated to keep at least 5 tons of sediment per year out of Boquerón Bay. The 5 tons of sediment per year is based on a calculation using the Watershed Treatment Model used in the loading estimates for the Cabo Rojo watershed plan. *It is important to note that the Erosion and Sediment control implementation project was funded by Puerto Rico Department of Natural and Environmental Resources (DNER) and not NFWF as we did not have funds for implementation and we were perhaps overcommitted in those resources attempting to create a water quality and coral reef baseline as well as a comprehensive watershed plan for a large area and the extensive stakeholder development and outreach portion of the project performed by Protectores de Cuencas (PDC). In addition, DNER also provided matching funds that were critical to provide a thorough training course led by our partner PDC as we had limited resources which we used as leverage to attract other funding sources.*

3. Lessons Learned

Describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt similar strategies to build upon some of these key lessons about what worked best and what did not?

- Effective engagement of the community in fieldwork and active restoration is a key component of building momentum for restoration and additional actions
- Engaging communities individually was an effective strategy – Puerto Real, Corozo, Joyuda and Cabo Rojo given a very large watershed and relatively strong community identity
- Monitoring reefs, nearshore waters and freshwater source areas of contamination were important aspects to build multiple lines of evidence for contamination and to target restoration sites and opportunities. It also helps to set a baseline from which to measure future improvements.

4. Dissemination

Briefly identify any dissemination of project results and/or lessons learned to external audiences, such as the public or other conservation organizations. Specifically outline any management uptake and/or actions resulting from the project and describe the direct impacts of any capacity building activities.

The watershed plan has been shared with organizations across Puerto Rico including Puerto Rico Department of Natural and Environmental Resources (DNER), Municipality of Cabo Rojo, National Resources Conservation Service (NRCS), US Fish and Wildlife Service (USFWS), Caribbean Office of the US Environmental Protection Agency, and National Oceanic and Atmospheric Administration (NOAA).

Several projects have been initiated already including:

- 1) a project funded by DNER that has created sediment traps to capture sediment before it enters the Boquerón Reserve
- 2) a NOAA intern is studying bacterial and sewage contamination in Cabo Rojo town based on our findings in this study – hopefully he will be making a definitive link that the contamination is human sourced and helping build the documentation that the contamination must be addressed by local and federal agencies.
- 3) The municipality of Cabo Rojo has been a strong partner in the plan and will be moving forward with several projects including one in Combate and one in Boquerón.

5. Project Documents

Include in your final programmatic report, via the Uploads section of this task, the following:

- 2-10 representative photos from the project. Photos need to have a minimum resolution of 300 dpi. For each uploaded photo, provide a photo credit and brief description below;

EPA Region II has already approved the Watershed Plan document as meeting the EPA A-I Criteria.

Clickable Map -- where layers including NOAA habitat layers, all our data, our restoration concepts that were completed as well as NOAA 3 ft sea level estimates can all be toggled on or off as well as the subwatershed layer.

<http://mgo.ms/s/85uzk>