Coral Reef Conservation Fund 2010 - Submit Final Programmatic Report (Activities and Outcomes)
Grantee Organization: Napili Bay and Beach Foundation, Inc.
Project Title: Storm Runoff Remediation in Napili Bay (HI)

Project Period	01/11/2010 - 10/03/2011
Award Amount	$24,000.00
Matching Contributions	$18,400.00
Project Location Description (from Proposal)	Napili basin 4-5 is located near Lower HonoaPi'ilani Road, Lahaina, Hawaii. It is part of the West Maui watershed system, located between Ka'anapali and Kapalua on the northwest shore of Maui.
Project Summary (from Proposal)	Decrease or eliminate storm runoff events from Napili basin 4-5 in Maui. Project will install a functional outlet drain, rain garden, and educational signage about stream and reef care.
Summary of Accomplishments	We have accomplished all of the project goals/scope of work outlined in our 2010 grant proposal: installation of a functional outlet drain in desilting basin Napili 4-5; implementation of a 'variant' type of rain garden in swale below the desilting basin; installation of educational signage about stream and reef care. To date, we have observed effectiveness of the grassed waterway following a very large storm on January 13, 2011, and have seen visitors and community members reading the Respect Coral Reef sign, and pointing out the lessons to their children. The outlet valve has just been constructed/installed and has not been tested by any heavy rainfall as yet (end of September, 2011). Likewise, the Malama Kahawai sign has just been installed, so we have not observed anyone reading it, as yet. This sign, which we commissioned/ gave input for, has gotten very favorable feedback from those who've seen it online. Details of these accomplishments can be found in the next section.
Lessons Learned	A. The effectiveness of the Grassed Waterway in the outlet swale below our desilting basin, Napili 4-5. Napili Bay cleared much faster than other coastal waters in West and South Maui, and this information was shared through Maui's U.H. Sea Grant administrator. Now many of the West Maui desilting basin outlet swales are adopting the grassed waterways, to slow and filter storm runoff/ protect the nearshore reefs. B. Lack of clear guidelines regarding permitting/regulatory steps required for this project, cost extra time and effort on the part of multiple people/agencies at Foundation, County, State and Federal level. This was, the most frustrating part of the project. Doing this again, I will work hard to determine ALL the regulatory issues required, and set them in motion with long lead times, in parallel with other planning activities. C. "Getting to Team" mentality is key. The private sector and various government agency sectors have to work together to accomplish these kinds of projects. We established, up front, that our Foundation members were trying to be helpful to the island/to the infrastructure and were calling upon the various local agencies to bring their expertise and skills to the table to help us get it done. D. A local core team is essential to accomplishing a project like this: knowledge of local contacts, politics, and culture. E. Its helpful, perhaps essential, to be a 501 (c) 3 non-profit Foundation, to obtain donations and grants.

Conservation Activities	Install "Respecting Coral Reefs" sign; DLNR has approved site

Progress Measures	Other (Sign installed)
Value at Grant Completion	100%
Conservation Activities	Design functional outlet drain system for Napili Basin 4-5
Progress Measures	Other (Design completed and approved by Project Team)
Value at Grant Completion	100%
Conservation Activities	Obtain permit from Maui County for drain installation
Progress Measures	Other (Permit obtained without causing project implementation delays)
Value at Grant Completion	100%
Conservation Activities	Install functional outlet drain in Napili Basin 4-5
Progress Measures	Other (Installation complete prior to 2011/2012 rainy season)
Value at Grant Completion	100%
Conservation Activities	Design GRASSED WATERWAY for 6" rain event for swale area below Napili 4-5
Progress Measures	Other (Design completed)
Value at Grant Completion	100%
Conservation Activities	Install GRASSED WATERWAY designed for 6" rain event, in swale area below Napili 4-5
Progress Measures	Acres of exposed soil revegetated
Value at Grant Completion	>1 acre
Conservation Activities	Design "Respecting Streams" sign with Maui County and contractor
Progress Measures	Other (Design completed and approved by Project Team)
Value at Grant Completion	100%
Conservation Activities	Obtain permit from Maui County for sign installation
Progress Measures	Other (Permit obtained without causing project implementation delays)
Value at Grant Completion	100%
Conservation Activities	Install "Respecting Streams" sign
Progress Measures	Other (Sign installed)
Value at Grant Completion	100%

Conservation Outcome(s)	% Coral coverage in Napili bay
Conservation Indicator Metric(s)	% live coral cover
Baseline Metric Value	5-20%
Metric Value at Grant Completion	5-20%
Long-term Goal Metric Value	>5-20%
Year in which Long Term Metric Value is Anticipated	2015
Conservation Outcome(s)	% Coral coverage in Napili bay
Conservation Indicator Metric(s)	% live coral cover
Baseline Metric Value	5-20%
Metric Value at Grant Completion	5-20%
Long-term Goal Metric Value	10 - 30%
Year in which Long Term Metric Value is Anticipated	2020
Conservation Outcome(s)	Numbers of reef fish
Conservation Indicator Metric(s)	Other (Species protected by Hawaiian State Law)
Baseline Metric Value	Twelve
Metric Value at Grant Completion	Twelve
Long-term Goal Metric Value	> Twelve
Year in which Long Term Metric Value is Anticipated	2013
Conservation Outcome(s)	Green sea turtle population
Conservation Indicator Metric(s)	Other (Evidence of resident foraging)
Baseline Metric Value	Morning and Evening
Metric Value at Grant Completion	Morning and Evening
Long-term Goal Metric Value	Morning and Evening
Year in which Long Term Metric Value is Anticipated	2012
Conservation Outcome(s)	Streambank erosion caused by storm overflow from Napili 4-5
Conservation Indicator Metric(s)	Other (No further erosion damage to streambanks caused by Napili 4-5 storm

overflows)	
Baseline Metric Value	~ every 24 months
Metric Value at Grant Completion	> 5 years
Long-term Goal Metric Value	No storm overflow erosion events
Year in which Long Term Metric Value is Anticipated	2015
Conservation Outcome(s)	Red dirt runoff from Napili 4-5 coloring the bay
Conservation Indicator Metric(s)	Other (Duration)
Baseline Metric Value	Seven days
Metric Value at Grant Completion	Seven days
Long-term Goal Metric Value	<1-2 days
Year in which Long Term Metric Value is Anticipated	2012
Conservation Outcome(s)	Sandy beach erosion events at stream mouth caused by Napili 4-5 storm overflow events
Conservation Indicator Metric(s)	Other (Frequency)
Baseline Metric Value	~ every 24 months
Metric Value at Grant Completion	> 5 years
Long-term Goal Metric Value	No storm overflow erosion events
Year in which Long Term Metric Value is Anticipated	2015

Final Programmatic Report Narrative

Instructions: Save this document on your computer and complete the narrative in the format provided. The final narrative should not exceed ten (10) pages; do not delete the text provided below. Once complete, upload this document into the on-line final programmatic report task as instructed.

1. Summary of Accomplishments

In four to five sentences, provide a brief summary of the project's key accomplishments and outcomes that were observed or measured.

We have accomplished all of the project goals/scope of work outlined in our 2010 grant proposal: installation of a functional outlet drain in desilting basin Napili 4-5; implementation of a 'variant' type of rain garden in swale below the desilting basin; installation of educational signage about stream and reef care. To date, we have observed effectiveness of the grassed waterway following a very large storm on January 13, 2011, and have seen visitors and community members reading the Respect Coral Reef sign, and pointing out the lessons to their children. The outlet valve has just been constructed/installed and has not been tested by any heavy rainfall as yet (end of September, 2011). Likewise, the Malama Kahawai sign has just been installed, so we have not observed anyone reading it, as yet. This sign, which we commissioned/ gave input for, has gotten very favorable feedback from those who've seen it online. Details of these accomplishments can be found in the next section.

2. Project Activities & Outcomes

Activities

- Describe and quantify (using the approved metrics referenced in your grant agreement) the primary activities conducted during this grant.
- Briefly explain discrepancies between the activities conducted during the grant and the activities agreed upon in your grant agreement.
  (Please Note: final report input is shown in blue text, original grant text is black.)

a. Conservation Activities: Install "Respectting Coral Reefs" sign; DLNR has approved site
Progress Measures Other (Sign installed)
Value at Grant Completion 100%
Donations were obtained and sign purchased and installed in Q1, 2010; 100% Complete.

b. Conservation Activities: Design functional outlet drain system for Napili Basin 4-5
Progress Measures Other (Design completed and approved by Project Team)
Value at Grant Completion 100%
Functional outlet valve designed by Natural Resources Conservation Service (NRCS) engineers, approved by Maui County Department of Public Works officials (who are responsible for maintenance of the desilting basins), approved by Project Team; 100% Complete.

c. Conservation Activities: Obtain permit from Maui County for drain installation
Progress Measures Other (Permit obtained without causing project implementation delays)
Value at Grant Completion 100%
The permits were obtained, though the time required to ascertain what permits were needed, then to assemble them and get them submitted for review and approval was much longer than anticipated. In addition, need for a second required permit was not revealed until the first permit was issued. This did not end up being the rate limiting step for project

implementation, however. Need for a third permit from the State DLNR was advised in February, 2011; this process was not completed until mid-August, 2011, and became the 'gate keeper' for outlet valve installation.
This activity is now 100% complete, but the lack of information about which permits were needed and lack of parallel processing of all required permits, definitely delayed start of construction.

d. Conservation Activities: Install functional outlet drain in Napili Basin 4-5
Progress Measures Other (Installation complete prior to 2010/ 2011 rainy season)
Value at Grant Completion 100%
This is now 100% complete, but we requested and were granted a schedule extension when the permitting requirements were revealed to the team in February, 2011. The revised project deadline is October 3, 2011 and project was completed, inspected by Maui County DPW to meet this deadline.

e. Conservation Activities: Design rain garden for 6" rain event for swale area below Napili 4-5
Progress Measures Other (Design completed)
Value at Grant Completion 100%
This is 100% complete. NRCS botanists evaluated the site/our needs and recommended a 'grassed waterway' in which the outlet swale grasses are left long such that runoff is slowed and filtered by them after storm events. Maui County DPW agreed with plan and implemented it.

f. Conservation Activities: Install rain garden designed for 6" rain event, in swale area below Napili 4-5
Progress Measures Acres of exposed soil re-vegetated
Value at Grant Completion 1 acre
The change in plan from a 'rain garden' to 'grassed waterway' changed the amount of exposed soil to be re-vegetated. In the swale below the basin, existing grasses were allowed to grow longer, and reseeded to create thicker grassed area. The second recommendation was to have grasses growing inside the basin, filling in any bare dirt areas. The combined new grassed area is > 1 acre; exact measurements not known. Photos of the grassed waterway in the swale can be found in Project Documents section of this report. This was a great success following a huge storm on January 13, 2011. Although initial runoff was uncontrolled (due to lack of functional outlet valve), once water level dropped to point at which outflow lowered the basin level by 0.5' – 1.0' in a 24 hour period, the grasses worked well enough to cause Napili Bay to clear up several days before other coastal waters on Maui.

g. Conservation Activities: Design "Respecting Streams" sign with Maui County and contractor
Progress Measures Other (Design completed and approved by Project Team)
Value at Grant Completion 100%
This is 100% complete: sign designed and approved by Project Team. A copy of the design has been attached in Project Documents section of this report.

h. Conservation Activities: Obtain permit from Maui County for sign installation
Progress Measures Other (Permit obtained without causing project implementation delays)
Value at Grant Completion 100%
This has been problematic. We were advised, January 2011, that no permit would be needed as we planned to install this sign on private property, with permission of the owner. In late June, a different DPW official advised that we needed to check with Planning Department on necessary permit. We submitted an SMA Assessment for permit at beginning of July, which resulted in decision (early September) that this sign was exempt from need for Permit. However, we were then notified of an additional Permit needed, with an engineering certification that this sign was not going to raise 100 year flood levels in the area. Additional information about how/where we were installing the sign was provided to the relevant county agency, and by September 15th, the permitting process was 100% complete.

i. Conservation Activities: Install "Respecting Streams" sign
Progress Measures Other (Sign installed)
Value at Grant Completion 100%
The sign was installed during week of September 19, 2011 and unveiled and blessed on September 26, 2011; (see photo attached); 100% complete.

Outcomes

- Describe and quantify progress towards achieving the project outcomes described in your grant agreement. (Quantify using the approved metrics referenced in your grant agreement or by using more relevant metrics not included in the application.)
- Briefly explain discrepancies between what actually happened compared to what was anticipated to happen.
- Provide any further information (such as unexpected outcomes) important for understanding project activities and outcome results.

a. Conservation Outcome(s): % Coral coverage in Napili bay
Conservation Indicator Metric(s): % live coral cover
Baseline Metric Value: 5-20 %
Metric Value at Grant Completion: 5-20 %
Long-term Goal Metric Value: >5 -20 %
Year in which Long Term Metric Value is Anticipated: 2015
We will raise funds for these long term studies to be done in 2015. No results are expected at this time as work is just being completed and coral growth is too slow to measure yearly.

b. Conservation Outcome(s): % Coral coverage in Napili bay
Conservation Indicator Metric(s): % live coral cover
Baseline Metric Value: 5-20 %
Metric Value at Grant Completion: 5-20 %
Long-term Goal Metric Value: >10 -30 %
Year in which Long Term Metric Value is Anticipated: 2020
We will raise funds for these long term studies to be done in 2015, and 2020. No results are expected at this time as work is just being completed and coral growth is too slow to measure yearly.

c. Conservation Outcome(s): Numbers of reef fish
Conservation Indicator Metric(s): Other (Species protected by Hawaiian State Law)
Baseline Metric Value: Twelve
Metric Value at Grant Completion: Twelve
Long-term Goal Metric Value: > Twelve
Year in which Long Term Metric Value is Anticipated: 2012
Given our delay to full completion of project by almost a year, 2012 may be too soon to see an increase in number of protected Hawaiian fish species. The marine biology teacher from Maui Preparatory Academy has offered help monitoring this parameter; we are finalizing timing; to begin during this school year. Surfider Foundation and Hawaiian Fish Habitat Partnership help are other resource possibilities we are investigating.

d. Conservation Outcome(s): Green sea turtle population
Conservation Indicator Metric(s): Other (Evidence of resident foraging)
Baseline Metric Value: Morning and Evening
Metric Value at Grant Completion: Morning and Evening
Long-term Goal Metric Value: > Morning and Evening
Year in which Long Term Metric Value is Anticipated: 2012

So far in 2011, the green sea turtles have continued to forage morning and evenings as witnessed by community members and guests at Napili resorts. We will continue to watch for this behavior.

e. Conservation Outcome(s): Streambank erosion caused by storm overflow from Napili 4-5
Conservation Indicator Metric(s): Other (No further erosion damage to streambanks caused by Napili 4-5 storm overflows)
Baseline Metric Value: ~ every 24 months
Metric Value at Grant Completion: > 5 years
Long-term Goal Metric Value: No storm overflow erosion events
Year in which Long Term Metric Value is Anticipated: 2015

We are anxious to test the effectiveness of the combination of our newly installed outlet valve and the grassed waterway at Napili 4-5. We (community members) will report results after heavy Winter storms, starting in 2012.

f. Conservation Outcome(s): Red dirt runoff from Napili 4-5 coloring the bay
Conservation Indicator Metric(s): Other (Duration)
Baseline Metric Value: Seven days
Metric Value at Grant Completion: Seven days
Long-term Goal Metric Value: <1 -2 days
Year in which Long Term Metric Value is Anticipated: 2012

I am thrilled to report that we achieved our long term goal metric value of <1-2 days of red dirty water filling Napili Bay after the one and only heavy storm of Winter, 2011. This was accomplished due to the effectiveness of the grassed waterway in swale below the desilting basin. However, this storm, though quite intense, was short in duration (a few hours). We (community members) will continue to monitor and report results during Winter 2012 , with the outlet valve and grassed waterway in place.

g. Conservation Outcome(s): Sandy beach erosion events at stream mouth caused by Napili 4-5 storm
Conservation Indicator Metric(s): Other (Frequency)
Baseline Metric Value: ~ every 24 months
Metric Value at Grant Completion: > 5 years
Long-term Goal Metric Value: No storm overflow erosion events
Year in which Long Term Metric Value is Anticipated: 2015

We are anxious to test the effectiveness of the combination of our newly installed outlet valve and the grassed waterway at Napili 4-5. We (community members) will report results after heavy Winter storms, starting in 2012.

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 their projects to build upon some of these key lessons about what worked best and what did not?

A. A wonderful Lesson Learned was the effectiveness of the Grassed Waterway in the outlet swale below our desilting basin, Napili 4-5. Previous maintenance practice, based on earlier concerns about woody plants growing in the outlet swale, and possibly causing water to divert/flood the area, was to keep this swale clipped very close or bald. Following the expert advice of NRCS botanists, the Maui County of Public Works Department changed this practice to allow the grass in that area to grow up to a couple of feet tall (a copy of the full report is attached in the Project Documents section). Napili Bay cleared much faster than other coastal waters in West and South Maui, and this information was shared through Maui's U.H. Sea Grant administrator (excerpt from her email reply to my photos: "Got them. I can see these pics being very useful. Thanks for sending."). In June, I learned that many of the West Maui desilting basin outlet swales are adopting the grassed waterways, as a way to slow and filter storm runoff/ protect the nearshore reefs.

B. The major tough Lesson Learned is that the lack of clear guidelines regarding permitting/regulatory steps required for this project, cost extra time and effort on the part of multiple people/agencies at Foundation, County, State and Federal level. This was, by far, the most frustrating part of the project for my colleagues and me. Further, it nearly cost us the whole project, due to lack of up front knowledge so that parallel processing of these regulatory facets could be addressed. I plan to meet (est. January, 2012) with Maui County Public Works officials to share these Lessons Learned and make suggestions for improving information/processes so that other community based groups can more effectively partner with these agencies on projects to improve infrastructure => protect and improve the environment. Doing this again, I will work hard to determine ALL the regulatory issues required, and set them in motion with long lead times, and in parallel with other planning activities.

Inherent in a community/government partnership is that the community has the greatest motivation to accomplish the project while the agencies have multiple projects to juggle. In addition, with a project like ours, the project site property is not owned by the community, thus for the major permit which was required by the County, all the permitting paperwork had to be handled by their personnel as 'requestor'…the community partner can only provide information, ask for updates and hope for forward progress in a timely manner.

C. "Getting to Team" mentality is key. What do I mean? The private sector and various government agency sectors have to work together to accomplish these kinds of projects. I think we've done reasonably well with this project. We established, up front, that our Foundation members were trying to be helpful to the island/to the infrastructure and were calling upon the various local agencies to bring their expertise and skills to the table to help us get it done. Earlier efforts had mostly been based on threats of litigation, etc, .and that had gotten nowhere. Our learning curve as to who needed to be giving us input obviously is still in progress (September, 2011), but numerous key people involved in West Maui watershed projects have pointed us to key resources and information, without which we'd still be going nowhere fast.

With the public agency folks involved in the Core Teams, everyone has been focused on getting the job done. BUT, there are numerous people in Planning Departments, etc. upon whom timely project progress depends and for whom the project task has just become another piece of paperwork on their already stacked desks. I will try to convey the sense of subteams and subteam leadership by Core Team members next time around.

D. The fourth major lesson learned, is that a local core team is essential to accomplishing a project like this. They know local contacts, local politics, local cultures. Many other individuals at Napili have tried to get this work done – one way or another, for nearly 20 years. Our 'combined strengths' as a Foundation and Foundation Board, were absolutely essential to getting this done.

E. Fifth, and not least, I believe its also been very helpful, perhaps essential, to be a 501 (c) 3 non-profit Foundation, in terms of obtaining donations and grants.

4. Dissemination

Briefly identify any dissemination of lessons learned or other project results to external audiences, such as the public or other conservation organizations.

Project Results:

Project Results were published in the monthly newsletter of our neighbors to the north, Kapalua Villa Condominium. The intent was to let them know (many owners there also have property in Napili Bay) what our overall goals and aims are, and update them on the progress made to that point. A copy of this newsletter article can be found in the Project Documents section.

An overall history of the Foundation, as well as information on results to date and our need for donations in order to fund the outlet valve part of this project, was written by local journalist Louise Rockett and published in the Lahaina News. Many of the Board members heard feedback about this article. Based on the email offers of help I received in the weeks following its publication, I believe it raised awareness of our program for other non-profit organizations working on watershed and reef health (e.g. Surfrider Foundation, Hawaiian Fish Habitat Partnership, The Nature Conservancy/Hawaiian Community Foundation). A copy of this article can be found in the Project Documents section.

Overall objectives, current project results, and lessons learned were all presented to the Rotary Club of Lahaina in late September, 2011. All of these have helped 'grow our profile' on the island of Maui. A copy of the PowerPoint presentation is available by email, upon request.

Other forms of dissemination include the updated project information on our website http://www.napilibayfoundation.org , the newly created Facebook page for the foundation, a Construction site banner with our logo and aims for the project (see photo attached in the Project Documents section), and our *Malama Kahawai* sign with our logo and logos of major supporting agencies (see photo attached in the Project Documents section).

Lessons Learned:

As indicated in the Lessons Learned section above, our experience with the grassed waterway after the huge and damaging storm of January 13, 2011, was communicated to the Coastal Processes/Coastal Hazards Specialist University of Hawaii Sea Grant College Program, based here in Maui. She has been and continues to be a member of our team for this project and our projects in the future. Her role is not only as a specialist in Coastal processes, but also as a liaison between community and county for coastal environmental concerns. She communicated our success to others on Maui who are adopting this change to their storm runoff areas.

The Lahaina Rotary Club has a number of members who have struggled with issues of degraded coastlines over the years. Hopefully, they took away some the lessons we've learned, based on the experiences I presented in September, 2011.

Planned – meeting with key Maui County officials in Dept. Public Works (1/12), in which I hope to facilitate future projects like this through Lessons Learned from a Project management perspective.

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;
- report publications, GIS data, brochures, videos, outreach tools, press releases, media coverage;
- any project deliverables per the terms of your grant agreement.

POSTING OF FINAL REPORT: *This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as "PROTECTED" and provide an explanation and complete citation to the statutory or regulatory source for such protection.*