

Table of Contents

COVERSHEET.....	2
SUMMARY TABLE.....	3
PROPOSAL NARRATIVE.....	5
TASK NARRATIVES AND BUDGET TABLES.....	7
Task 1. Comprehensive Long-Term Monitoring at Permanent Sites in Guam.....	7
Task 2. Coral Reef Watershed Coordinator.....	19
Task 3. Coral Reef Fellowship Program.....	23
Task 4. Travel.....	23
Task 5. All-island Committee (AIC) Dues.....	25
Task 6. Coral Reef Initiative Coordinator.....	26
Task 7. Support for Public Outreach and Education.....	29
TABLE OF ANTICIPATED PRODUCTS AND OUTCOMES.....	36
BUDGET NARRATIVE.....	37
SCOPE OF WORK FOR FEDERALLY FUNDED POSITION AND IN-KIND MATCH.....	38
Monitoring Program Coordinator – Coral Reef Biologist.....	39
Coral Reef Biologist - Technical Support.....	41
Monitoring Assistant.....	43
Coral Reef Watershed Coordinator.....	45
Coral Reef Initiative Coordinator.....	48
Planner I - Support for Outreach and Education.....	50
SF424 and SF424 A.....	51
CERTIFICATIONS REGARDING DEBARMENT, SUSPENSION AND OTHER MATTERS: DRUG FREE WORKPLACE ENVIRONMENT.....	52
PERMITS.....	53
MATCH WAIVER REQUEST.....	54
NEGOTIATED INDIRECT COST RATE AGREEMENT.....	55
DATA AND INFORMATION SHARING PLAN.....	56
NEPA QUESTIONS AND RESPONSES.....	57
GUARDIAN OF THE REEF SURVEY INSTRUMENT.....	58
RESUME AND OR CURRICULUM VITAE.....	59

COVERSHEET

1. Guam's Application Coversheet

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e) Guam's Application Project Title:

Guam's FY 2015-2016 Coral Reef Conservation Grant Program

f) Geographic Location: Guam

g) Federal funding requested for each year FY16: \$382,617
FY17: \$371,178

h) Matching funds provided for each year FY16: \$16,793
FY17: \$16793

i) Award start date and award period *October 1, 2015 to September 30, 2017*

SUMMARY TABLE

For FY16 and FY17, Guam is requesting \$382,617 for Year 1 and \$371,178 for Year 2 to include the full amount for dues to the All Islands Committee and the Coral Reef Fellowship Program.

SUMMARY OF GUAM FY 15-16 CRCP PRE APPLICATION FOR YEAR 1					
Title of Project or Position		Brief Description	Federal Request / Budget	Matching funds available	Anticipated Work Products or Outcomes
Task 1.1	Comprehensive Long Term Monitoring at Permanent Sites on Guam	2 Full Time Position, 4 part time students, dive supplies, boat and truck rental	\$199,997	\$0	Coral Reef Monitoring Data; State of the Reef Report
Task 2.1	Coral Reef Watershed Coordinator	Salary and Fringe Benefits, Office Supplies, Computer	\$57,276	\$0	Increase awareness of coral reef threats; enhance community stewardship in Merizo
Task 3.1	Coral Reef Fellows Program ¹	Coral Reef Fellow	\$10,714	\$0	Coral Reef Fellow
Task 4.1	Coral Reef Initiative Coordinator	Salary and Fringe Benefits	\$60,000	\$0	Administer Coral Reef Conservation Grant Program; Submit Semi Annual Progress Report; Update of Guam's 2015-2020 Coral Reef Management Priorities; Update of Guam's Local Action Strategy
Task 5.1	Travel	Travel for Coral Reef Point of Contact and Governor to USCRTF and AIC meeting	\$10,344	\$0	Enable POC and Governor to attend USCRTF and AIC meetings
Task 6.1	AIC Dues ²	AIC Dues	\$24,286	\$0	Support AIC member coordination efforts
Task 7.1	Public Outreach and Education	Promotional Items, outreach PSA, bus transportation for Guardian of Reef, and GNA outreach	\$20,000	\$16,793	Produce PSA, educational materials, increase awareness of Guam's Ecosystem
Total Funding Amount			\$382,617	\$16,793	
^{1,2} Funds are held back from grantor					

SUMMARY OF GUAM FY 15-16 CRCP PRE APPLICATION FOR YEAR 2					
Title of Project or Position		Brief Description	Federal Request / Budget	Matching funds available?	Anticipated Work Products or Outcomes
Task 1.2	Comprehensive Long Term Monitoring at Permanent Sites on Guam	2 Full Time Position, 4 part time students, supplies, boat and truck rental	\$199,997	\$0	Coral Reef Monitoring Data; State of the Reef Report
Task 2.2	Coral Reef Watershed Coordinator	Salary and Fringe Benefits	\$56,976	\$0	Increase awareness of coral reef threats; enhance community stewardship in Merizo
Task 3.2	Coral Reef Fellows Program ¹	Coral Reef Fellow	\$10,714	\$0	Coral Reef Fellow
Task 4.1	Coral Reef Initiative Coordinator	Salary and Fringe Benefits	\$56,976	\$0	Administer Coral Reef Conservation Grant Program; Submit Semi Annual Progress Report; Update of Guam's 2015-2020 Coral Reef Management Priorities; Update of Guam's Local Action Strategy
Task 5.2	Travel	Travel for Coral Reef Point of Contact and Governor to USCRTF and AIC meeting	\$10,000	\$0	Enable POC and Governor to attend USCRTF and AIC meetings
Task 6.2	AIC Dues ²	AIC Dues	\$24,286	\$0	Support AIC member coordination efforts
Task 7.2	Public Outreach and Education	Promotional Items, outreach PSA, bus transportation for Guardian of Reef, and GNA outreach	\$12,229	\$16,793	Produce PSA, educational materials, increase awareness of Guam's Ecosystem
Total Funding Amount			\$371,178	\$16,793	
^{1,2} Funds are held back from grantor					

PROPOSAL NARRATIVE

Introduction

Guam’s coral reef resources are both economically and culturally important to the residents of Guam. They provide numerous goods and services that support Guam’s culture and traditions, tourism and recreation, fisheries, and shoreline and infrastructure protection. Approximately 108 km² of shallow coral reef area is found within 3 miles of Guam, with an additional 110 km² occurring between 3 and 200 miles. As a result of Guam’s local law creating five Marine Preserves to combat fishery declines, the fish stocks in the preserves have increased significantly. Despite the critical importance of Guam’s coral reefs to many aspects of life on Guam, the island’s reefs still remain under assault from sedimentation from upland soil erosion, stormwater runoff and associated pollutants, marine debris, coral bleaching, coral disease, recreational misuse, climate change or severe weather condition, and more¹.

The Bureau of Statistics and Plans, the Governor of Guam’s Point of Contact agency for coral reef conservation activities, continues to take the lead of promoting awareness to the importance of coral reef ecosystem to the island community and to work collaboratively with public and private sectors, non-profit organizations, businesses, and educational institutes to encourage best management practices of coral reef conservation efforts. The project tasks being requested for funding will support the coral reef management and monitoring programs and conservation projects that will improve the condition of the coral reef ecosystem resources in Guam.

Programmatic Activities

With the funding opportunity provided under the FY 2016-FY 2017 agreement, the Bureau of Statistics and Plans can continue to support critical staff (Monitoring Coordinator, Technical Support Specialist, Monitoring Assistants, and Field Personnel), monitoring supplies and contractual services for boat rental, dive equipment and supply rental that are essential to continue Guam's Comprehensive Long Term Monitoring Program that is being implemented by the University of Guam Marine Laboratory; to continue to support critical staff (Watershed Coordinator - Biologist II), and office supplies at BSP to continue to implement watershed efforts and outreach efforts; and to hire critical staff support (Coral Reef Initiative Coordinator - Management Analyst III or Planner III or Program Coordinator II) and supplies to implement, and coordinate the active and new NOAA CRCP grants, to lead the update of Guam's Local Action Strategy and Guam's Coral Reef Management Priorities.

Table 1 illustrates the resources need to continue implementation of the local coral reef management program and support for key programmatic staff.

Project Title		Position Title	Funding Amount Year 1	Funding Amount Year 2
Task 1	Comprehensive Long Term Monitoring at Permanent Sites on Guam	¹ Coral Reef Biologist - Monitoring Team Leader Salary	\$47,026.00	\$47,026.00
		² Coral Reef Biologist - Monitoring Team Leader Fringe Benefits	\$16,929.00	\$16,929.00
		Coral Reef Biologist - Technical Support Salary	\$39,416.00	\$39,416.00

¹ Guam, Bureau of Statistics and Plans. *Status of the Coral Reef Ecosystems of Guam*. No.1, December 2009.

Project Title		Position Title	Funding Amount Year 1	Funding Amount Year 2
		Coral Reef Biologist - Technical Support Fringe Benefits	\$14,190.00	\$14,190.00
Task 2	Coral Reef Watershed Coordinator	³ Coral Reef Watershed Coordinator Salary	\$40,762.00	\$40,762.00
		Coral Reef Coordinator Fringe Benefits	\$16,214.00	\$16,214.00
		Supplies: General office supplies	\$300.00	\$0.00
Task 4	Coral Reef Initiative Coordinator	⁴ Coral Reef Initiative Coordinator Salary	\$40,762.00	\$40,762.00
		Coral Reef Initiative Coordinator Fringe Benefits	\$16,214.00	\$16,214.00
		Equipment: Computer \$2000, Laser Printer \$900	\$2,900.00	\$0.00
		Supplies: General Office Supplies \$124	\$124.00	\$0.00
¹ Mr. David Burdick, Monitoring Lead is holding this position at UOG				
² Ms. Roxanna Miller, Technical Support is being recruited for this position at UOG				
³ Ms. Anna Simeon, Watershed Coordinator (Biologist II) is holding this position at BSP				
⁴ New Position requested to implement and manage CRCP Grant.				

Table 2 illustrates the resources needed for Administrative Support.

Project Title		Funding Amount Year 1	Funding Amount Year 2
Task 3	¹ Coral Reef Fellows	\$10,714.00	\$10,714.00
Task 5	Travel	\$10,344.00	\$10,000.00
Task 6	¹ AIC Dues	\$24,286.00	\$24,286.00
¹ The National Oceanic Atmospheric Administration is authorized to hold \$24,286 of the grant for Guam's All Island Committee dues for Year 1 and Year 2.			

Furthermore, the funding opportunity will ensure BSP has the resources to continue to conduct education and outreach to increase awareness the community knowledge of Guam's Coral Reef Ecosystem.

The majority of the projects proposed have been identified in Guam's Local Action Strategies (LAS), Guam's Conservation Action Plan (CAP), Guam's Coral Reef Management Priorities and the CRCP National Goals and Objectives.

TASK NARRATIVES AND BUDGET TABLES

Task 1. Comprehensive Long-Term Monitoring at Permanent Sites in Guam

Project is supported in jurisdictional and CRCP Priorities

Guam Objective 3.2: Develop and implement comprehensive monitoring of water quality and coral reef ecosystem parameters within watersheds targeted for watershed restoration, with a focus on evaluating the effectiveness of watershed restoration efforts implemented as compensatory mitigation for impacts to coral reef resources.

Project Summary:

This proposal is for the continued funding of Guam's comprehensive long-term coral reef monitoring program. This on-going project involves the long-term monitoring of a suite of coral reef ecosystem health parameters at high priority sites around Guam. Data collection began in 2009 and since then data has been collected at four sites, with the establishment of three additional sites planned for late 2014 and early 2015. The program's comprehensive approach to ecological monitoring, combined with the high density of samples within a given site, provide unique data critical to understanding changes in condition at these high priority sites and for the effective management of these areas. The current proposal also includes continued support for the closely-related reef flat monitoring program carried out by Dr. Laurie Raymundo, an effort which has tracked changes in the health status of Guam's reef flat coral communities since 2005.

Project Description, Background and Justification

Comprehensive Long-term Coral Reef Monitoring Program

While Guam's reefs have been the subject of numerous studies, until the establishment of this program there has not been a continuous coral reef monitoring program that comprehensively addresses benthic habitat, water quality, and associated biological communities at high priority reef areas. This lack of baseline information has limited managers' ability to evaluate natural and anthropogenic impacts to Guam's reefs and to gauge the effectiveness of management activities at the scale of individual sites. In order to address this major gap, the Government of Guam natural resource agencies, with the assistance of the University of Guam Marine Laboratory and the National Oceanic and Atmospheric Administration's Pacific Islands Regional Office (NOAA PIRO), developed a long term monitoring strategy aimed at addressing the management needs of local resource agencies and the objectives set by the National Coral Reef Ecosystem Monitoring Program (NCREMP). A monitoring coordinator was hired in January 2007 to further develop and implement the monitoring strategy. While obstacles have been presented in the procurement of equipment, supplies, and a private boat charter, and despite a period of major transition of the program from the Bureau of Statistics and Plans to the University of Guam Marine Lab, progress continues to be made in addressing these obstacles, and a considerable amount of field work has been conducted since funding first became available. A large amount of baseline data for a number of key ecosystem health parameters is now available for several high priority reef areas that are currently the focus of a number of management actions aimed at improving reef health. Subsequent data collection at these reef areas, including the incorporation of water quality monitoring, will provide critical information to managers about the effectiveness of management efforts, and will alert managers to emerging threats that may not otherwise be detected.

Data collection began in June 2009, with initial surveys targeting the Tumon Bay Marine Preserve. In 2010, a more extensive data collection effort was carried out along a portion of the Tumon Bay outer reef slope and an equivalent area along the outer reef slope in East Agana Bay; benthic cover, coral size/condition, reef fish community, and macroinvertebrate community surveys were conducted at 20

sampling stations within each site. In 2011, benthic cover, coral size/condition, reef fish, and macroinvertebrate surveys were conducted at 23 sampling stations at Western Shoals, Apra Harbor, and in 2012 baseline benthic cover, coral size/condition, fish, and macroinvertebrate surveys were carried out at 20 sampling stations in Piti Bay and benthic cover, coral size/condition, and macroinvertebrate surveys were carried out at 21 sampling stations in Tumon Bay and 10 stations in East Agana Bay. In 2014 benthic cover, coral size/condition, and macroinvertebrate surveys were carried out at all 12 permanent sampling stations in Tumon Bay and at all 10 permanent stations in East Agana Bay. Benthic cover, coral size/condition, fish, and macroinvertebrate surveys have recently been completed at 6 permanent and one non-permanent sampling station in Piti Bay, with data collection at the remaining stations planned before the end of October 2014.

In 2013, the monitoring coordinator contributed a significant amount of time to the organization and implementation of a coral bleaching response effort. Between August and October of 2013 the coral reefs of Guam and other Southern Mariana Islands experienced a significant bleaching event associated with anomalously high sea surface temperatures and an extended period of calm weather. A University of Guam Marine Lab-led effort to document the event's scale and severity generated a significant amount of quantitative coral and benthic substrate composition data, along with semi-quantitative coral community data, for 48 shallow (3-5 m) reef front sites selected randomly from around the island. The majority of sites were coincident with sites at which NOAA CRED carried out reef fish surveys in 2011. The monitoring coordinator presented the results of a preliminary analysis of data collected during this effort at the 2014 Asia-Pacific Coral Reef Symposium (APCRS) in Taiwan. The aim of the study was to describe the benthic communities of Guam's reef front zone for the first time using quantitative benthic cover data, to compare the benthic communities of the reef front and the lower slope, and to better understand the factors that most influence the structure and condition of these systems. A UOG Marine Lab graduate student also presented the preliminary results of his analysis of the data, which focused more on the differential impacts of the bleaching event on reef front communities around the island.

Reef Flat Monitoring Program

As described in previous proposals UOGML's reef flat monitoring program began in part in 2005 as part of coral disease assessment and monitoring work funded through a NOAA Coral Reef Monitoring Grant. Coral health monitoring continued at a subset of the reef sites initially assessed. Two of the sites selected for continued monitoring, Tumon Bay and Luminiao Reef, were included in a reef flat monitoring project funded by a NOAA Global Coral Reef Monitoring Program grant that investigated the impacts of the extension and repair of two sewage outfalls. The Reef Flat Monitoring Program currently involves quarterly data collection at seven reef flat sites that extend along the western coast of Guam from Haputo Bay in the north to Luminiao Reef in central Guam. The program has provided important, detailed information about trends in coral community health, and places particular attention on coral diseases, predators, bleaching and other coral health concerns and the relationship with water temperature and nutrients. The data generated through the reef flat monitoring program provides a strong complement to the data collected at the outer reef slope sites targeted with the long-term monitoring program, particularly at locations, such as Tumon Bay and Piti Bay, where the need for regular monitoring data for both the reef flat and outer reef slope communities is concurrently addressed through these two monitoring programs. The reef flat monitoring program provides information to managers for a critical, dynamic, yet vulnerable reef zone, and is an essential component of a comprehensive coral reef monitoring strategy.

Project Description

The updated long-term coral reef monitoring plan for Guam is currently being implemented, with limited data collection occurring in 2009 and more extensive data collection carried out in 2010, 2011, 2012, and 2014. The fundamental sampling design and survey protocols have been adopted and implemented, but they remain subject to change as better methods and equipment become available.

The primary goals of the updated Guam Coral Reef Monitoring Plan are the following:

- To determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers’ decision making process and increase the effectiveness of natural resource management on Guam.
- To provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management.
- To provide data to better understand the dynamic nature and condition of the island’s coastal ecosystems.
- To allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- To measure progress towards performance goals.

A list of specific questions raised by managers that are being addressed by the long-term monitoring program to the fullest extent possible can be viewed in previous proposals.

Primary Objectives

The monitoring program collects data about a number of important parameters related to ecosystem health. These parameters are grouped into three categories: water quality, benthic habitat, and associated biological communities. The parameters identified for Guam are provided below, with parameters currently being monitored in bold:

<p><u>Water Quality:</u></p> <ul style="list-style-type: none"> • Temperature • Turbidity • Dissolved Oxygen • pH • Conductivity • Chlorophyll • Nutrients (P, N) • Bacteria 	<p><u>Benthic Habitat</u></p> <ul style="list-style-type: none"> • Benthic % Cover • Coral Colony Size • Coral Colony Density • Coral Condition • Rugosity • Macroalgae diversity • Coral Colony Growth Rates • Macroalgae biomass 	<p><u>Assoc. Biological Communities</u></p> <ul style="list-style-type: none"> • Reef Fish Abundance and Biomass • Reef Fish Diversity • Protected Species • Abundance of Ecologically and Commercially Important Macroinvertebrates • Macroinvertebrate diversity
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Water quality parameters and a few biological parameters have not yet been incorporated into field surveys. Water quality parameters are especially important to the program and will commence upon the deployment of multi-parameter datasondes, which will occur once the full-time technical support position is filled (early 2015). While temperature loggers were installed in the Tumon, East Agana, and Piti sites in 2014, the multiparameter datasondes have not yet been used due to the expiration of several calibration solutions. These solutions have recently been procured using re-programmed CRCP funds.

Benefits and Feasibility of the Proposed Project

The data collected from coordinated monitoring activities provide a baseline of coral reef condition at several high priority reef areas around the island, and subsequent monitoring informs managers of trends in various ecosystem health parameters. This data is critical in informing management decisions and in assessing the effectiveness of management actions.

The development and implementation of the comprehensive monitoring strategy has strengthened partnerships between participating agencies and has resulted in a more coordinated, efficient approach to monitoring the health of Guam's coral reef resources. The core monitoring team consists of personnel from the UOGML and NOAA PIRO, with occasional participation by biologists with the Dept. of Agriculture's Division of Aquatic and Wildlife Resources (DAWR) and the Guam Environmental Protection Agency (GEPA).

Several data sets generated through the long-term monitoring program currently reside in a relational database accessible through a web-based data entry portal, a system developed by the NOAA Coral Reef Ecosystem Division (CRED) and BSP. The monitoring data management system has significantly improved the management of the large amount of coral reef monitoring data generated by the long-term monitoring program. Development of the data management system will continue through 2015 and 2016, with the inclusion of additional data sets generated by the long-term monitoring program, as well as data generated by the NOAA PIRO-supported Guam Community Coral Reef Monitoring Program and the UOGML Reef Flat Monitoring Program. An online data distribution application will also be developed, significantly improving access of the data by end users. To facilitate broader awareness of the available data sets, metadata have been developed for the coral quadrat, fish, and macroinvertebrate datasets by NOAA CRED and the monitoring coordinator and will be posted to CoRIS by November 2014. Metadata for additional datasets will be developed in 2015.

The results of data analyses are summarized in periodic reports made available to the public, such as the report released in December 2011 entitled "Comprehensive long-term monitoring at permanent sites on Guam: A report of program status and presentation of preliminary baseline data and power analyses results for the Tumon Bay, East Agana Bay, and Western Shoals sites" and the report released in December 2012 entitled "Comprehensive long-term monitoring at permanent sites on Guam: 2012 status report." General information about the program is currently provided with newsletter articles, online videos, and blog posts; a portion of the Guam Coral Reef Initiative website (<http://guamcoralreef.com>) or a stand-alone website will be dedicated to the monitoring program, and will provide a clearinghouse of reports, articles, videos, and other content related to the monitoring program. Web links to a few examples of outreach materials generated by monitoring team members and by others who wished to highlight the work of the monitoring team can be found in the previous grant proposal. Once hired, the full-time technical support staff will be able to significantly enhance the program's outreach capacity.

With the availability of data from three site visits for the Tumon Bay and East Agana Bay sites and baseline data for several other sites, a major report is planned for release towards the end of 2015. This report will include a detailed description of the baseline condition of the newly-established sites, a description of changes in key ecosystem condition parameters for the Tumon Bay and East Agana sites between 2010 and 2014, a description of potential causes of any changes observed in these parameters and relevance to coral reef management, and suggestions for management activities that could address issues identified through monitoring program efforts.

Raw data collected through the monitoring program are provided upon request to resource agencies, research teams, and others. For example, all coral quadrat observational data was provided to a NOAA PIRO contractor who was tasked with developing a database of the known locations of the ESA-listed coral species and other species of interest. Several data sets generated by the long-term monitoring program as well as by a major coral bleaching response effort to which monitoring team staff were major contributors will be utilized in an important study led by Jeffrey Maynard (and for which the monitoring coordinator will be a Co-PI) aimed at assessing the resiliency of Guam's reefs and communicating the results to fishers and other stakeholders, should that study receive funding. Anecdotal reports and the results of preliminary analyses of data obtained through monitoring program activities are also presented to resource agency staff at relevant multi-partner meetings and communicated via email, telephone

conversations, and in-person in an effort to provide up-to-date information on the status of Guam's reef resources.

The long-term monitoring program continues to contribute to local monitoring capacity through the continued employment of a monitoring coordinator and the rotating employment of three part-time monitoring assistants. Thus far, the program has provided part-time employment for a total of nine graduate students from the University of Guam Marine Laboratory. Participation in the long-term monitoring program has provided these individuals with a wide range of experiences, and a level and quality of participation in sampling design, protocol development, procurement, data collection, and data analysis that most have not previously experienced.

The UOGML reef flat monitoring program will continue to provide detailed information about the condition of coral communities on key reef flat sites along the western coast of Guam, focusing primarily on the effect of temperature and nutrients on coral disease, bleaching, and other coral health concerns. The focus on reef flat sites, the detailed coral condition data, and the greater temporal resolution make this program a strong supplement to the long-term monitoring program. The multiple years of data collected through the reef flat monitoring program are currently being organized in an Access database, and will soon be migrated to the Guam Monitoring Data Management System. Some preliminary results will be presented in an end-of-the-grant report in December 2014, but a more comprehensive analysis of the copious data will take place in 2015, the results of which are planned for presentation in a peer-reviewed publication.

Methods

The strategy for the comprehensive long-term monitoring of priority reef areas has six main components: Coordination, Training, Site Establishment, Site Monitoring, Data Analysis, and Reporting.

Coordination

A Monitoring Coordinator was hired in 2007 to coordinate monitoring efforts carried out by local and federal agencies/institutions as well as to supervise and participate in the design, data collection, data analysis, and reporting efforts associated with the long monitoring of several permanent sites around the island. This individual facilitates communication between monitoring entities, supervises three monitoring assistants, coordinates training and calibration sessions prior to each field season, schedules and participates in core monitoring activities, coordinates and carries out data management activities, conducts data analyses, compiles reports, and produces outreach materials. The coordinator also assists local resource agencies with resource assessments through assistance with planning and participation in field surveys.

Training

Capacity building continues to be a top priority for the GCRMG. In order to collect quality data, all monitoring personnel are trained in the appropriate survey methods and calibrated in order to minimize observer bias. Standard Operating Procedures (SOPs) have been developed for each of the survey techniques and are updated as necessary. These SOPs are provided to all of the personnel working on the monitoring program or using the data, and serve to improve continuity and consistency between current and future observers.

Site Selection

The high priority reef areas currently targeted for long-term monitoring include Tumon Bay, East Agana Bay, Western Shoals (Apra Harbor), and Piti Bay. Sites planned for establishment in late 2014 or early 2015 include Achang, Cocos-East, and Fouha Bay. Each site was selected by the GCRMG after consideration of each site's cultural and economic importance, the number of other management activities in the watershed, the amount and quality of available data collected by other efforts at the site, MPA status, accessibility, and other factors. In order to achieve a relatively high level of detection and

significant power with a reasonable number of samples, sampling at most sites (with the exception of Western Shoals and Fouha Bay) is restricted to the submarine terrace, which is an area of relatively gentle slope that is found between the base of the high wave energy reef front and the steeper lower reef slope. A detailed account of the reasoning behind the selection of each site and the targeting of the submarine terrace zone can be found previous grant proposals.

Sampling design

The updated monitoring strategy calls for a stratified random sampling design and the combined use of both fixed and non-fixed sampling stations. This general approach is used for most sites (with the exception of Fouha Bay, which has relatively little reef area), but the details of the sampling design may differ between sites. However, sampling strategies and survey methods are made consistent across sites to the fullest extent possible in order to maximize the ability to make between-site comparisons. The locations of sampling stations are generated randomly using Geographic Information System (GIS) software. Even-numbered stations are fixed, while odd-numbered stations are unfixed; a new set of re-randomized, unfixed stations are generated for subsequent visits. Data collection for most sites is currently focused on hardbottom habitat of the outer reef slope terrace, between the depths of 7 and 15 m. Monitoring at the Western Shoals site is currently focused within three strata, including the reef slope on the western half of the shoals, the reef flat margin on the western half of the shoals, and the reef flat margin on the eastern half of the shoals.

Site Monitoring

Site monitoring currently involves the collection of data for benthic habitat and associated biological communities parameters listed above. Water quality monitoring will begin with the 2015 field season. The original intent was to visit all sites annually, but it has become clear that the large number of sampling stations required to attain a reasonably high level of detection and high level of power with relatively limited resources make this target unrealistic. A new sampling plan has been developed that involves the alternation between surveying all sampling stations (permanent and non-permanent) stations and surveying only permanent stations. It may also be necessary to limit data collection for less accessible sites, such as Achang and Cocos-East, to biennial visits.

Survey logistics/permanent site establishment

Each sampling station is located using a GPS receiver. Upon reaching a station's location, a small lead fishing weight and line tied to a buoy is dropped. In optimal situations where at least four divers are available, two divers enter the water first to carry out the reef fish surveys. Starting at the weight tied to the buoy, a 30-meter transect is laid out. The transect is laid out in a clockwise direction (clockwise from a planar view of Guam, following the depth contour if it is readily determined, or at a previously-determined heading perpendicular to the reef margin if the area is relatively flat and a depth contour is not readily discernable. For previously established stations, divers locate the rebar marking the beginning of the transect and lay out the tape in line with the existing rebar. The two or more divers conducting the benthic surveys enter the water after the fish surveys are completed. For fixed sampling stations, 24" rebar is installed at the beginning of the transect and 12" rebar is installed at the center and end of the transect; four-inch concrete nails are installed at two or more of the corners of each quadrat. For stations where high cover prevents the installation of rebar, a small PVC float is tied to dead coral at the beginning of the transect and large zip ties are placed at the beginning, middle, and end of the transect. Small zip ties are used to mark two or more corners of each permanent quadrat location in high coral cover areas.

Qualitative surveys

Short qualitative surveys are conducted at each station when possible to establish species lists for key taxa and to characterize the site. These surveys are usually conducted immediately before or after the quantitative surveys, when time is available. In combination with the quantitative data, the qualitative data will contribute to a master species list and general site description for each site that can be referenced

by monitoring personnel and local agencies. More comprehensive biodiversity surveys, including genetic sampling, may be carried out in the future.

Water Quality

After significant delays, water quality sampling will be carried out during the 2015 field season, with sampling at each station following Guam EPA's EMAP QAPP2003² procedures. Water column profiles will be performed at each sampling station using an electronic multiparameter water quality monitoring system/datasonde equipped for conductivity/salinity, depth, dissolved oxygen, pH, temperature and turbidity. Temperature loggers have been deployed at the Tumon, East Agana, and Piti sites in 2014 and will be deployed at the remaining sites in late 2014 and 2015. At least one, possibly two datasondes equipped for conductivity/salinity, depth, dissolved oxygen, pH, temperature and turbidity will be deployed at select sites for long term in situ monitoring. Additionally, an array of conductivity/temperature loggers will be deployed along the Tumon Bay and East Agana Bay monitoring sites in order to improve our understanding of the impacts of submarine freshwater discharge on reef communities at those sites.

Benthic Habitat

Benthic Cover

Benthic cover and coral and algal generic diversity are currently being assessed using digital photo transects. Non-overlapping digital photos along each transect with a digital point and shoot camera mounted on a PVC frame. Initially, photos were taken every 0.5 meters along the transect tape, but in order to minimize overlap (especially at high rugosity reef areas) photos are now taken every 1 m. The percent cover for various benthic cover types is estimated from the images using Coral Point Count (CPCe). The CPCe analysis was initially carried out using 25 points per frame, stratified using a five by five grid, and now is carried out using 16 points per frame, stratified using a four by four grid.

Coral Community

Shortly after the first diver begins the photo transect, another diver then identifies and measures all coral colonies within 0.5 x 0.5 m quadrats placed at 0 m, 5 m, 10 m, 15 m, and 20 m along the right side of the transect. Percent old dead, percent recent dead, and disease type and severity observations are recorded for each colony. The cause of tissue mortality is noted if it can be determined with a reasonable degree of confidence. Measurements of the longest dimension and the width of the colony perpendicular to the longest dimension are made. An effort is made to carefully count all coral recruits/juvenile corals in order to assess the rates of coral recruitment to natural substrate. Care is taken to prevent the count of remnants of larger colonies as coral recruits/juvenile corals. Any tissue isolate suspected of being a remnant of a larger colony will be noted as such and taken into account during analysis, in order to prevent the calculation of erroneous coral recruitment rates. At least two photos are taken of each quadrat in order to maintain a photographic record of all quadrants. These photos may allow for the determination of planar growth rates for various coral species and for investigating benthic organism dynamics that can be appropriately observed at an inter-annual time scale.

Rugosity

Beginning with the 2012 field season, rugosity is measured at each sampling station using the standard chain-and-tape method at one 10 m section along the 25 m transects at each sampling station. A diver carefully drapes a light chain over the substrate along a taut transect tape, paying out as much chain as is necessary to conform to the substrate profile along the length of the tape. The diver measures and records the length of chain needed to cover a 10 m distance.

Associated Biological Communities

² Guam Environmental Protection Agency. 2003. Environmental Monitoring and Assessment Program (EMAP) Coastal Sampling for Guam and Micronesia Region: Quality Assurance Project Plan (QAPP). Guam EPA, Tiyan Guam. 82pp.

Reef Fish

The fish team currently uses a Stationary Point Count Method (SPC) adapted from Ault et al. (2006) and NOAA Fisheries Coral Reef Ecosystem Division (Williams et al., 2011) at all sites. To conduct the surveys a pair of fish divers descend and deploy a 30 m transect across the substratum. Divers are positioned at 7.5 m and 22.5 m and count fish within a 7.5 m radius cylinder extending from the substrate to the limits of vertical visibility. The simultaneous surveys will begin once the divers deploy the transects and both divers are ready to proceed. The SPC surveys are conducted in two parts. During the first five minutes, divers record all species observed within the cylinder, but do not count or size fish. All fish are identified to species level or the next lowest taxonomic level possible (genus or family). If a rare fish (shark, species of concern, large mobile predators, etc.) is observed during the first 5 minutes, it is counted and sized, but the diver notes that it was not an instantaneous count. After the first five minutes divers enumerate fish, one species grouping at a time, using rapid visual sweeps of the plot. All fish of the target species within the SPC boundaries are counted and sized to the nearest centimeter; however, divers use size classes for large schools or high densities. This process is continued until all of the listed species are counted. At the end of the survey, divers swim throughout the 7.5m radius plot to enumerate small and cryptic species that were not captured from the stationary central position. Surveys are not completed if the visibility is less than 7.5 m.

Macroinvertebrates

Counts of commercially and ecologically important macroinvertebrate species (*Acanthaster*, echinoids, holothurians, *Tridacna*, etc.) are made within a 4 m belt (2 meters on either side of the transect). The size of *Tridacna* are measured to the nearest cm.

Rare Species

Protected or rare species utilizing the general area around the site are recorded and photographed. These species include marine mammals, sea turtles, *Bolbometopon muricatum*, and *Cheilinus undulatus*. Data will include species, number, activity, and size when possible.

Data Analysis

Data collected from each of the monitoring sites is first explored in multivariate space using PRIMER and the PERMANOVA add-on, is examined using several types of power analyses in order to determine optimum sample sizes, and the generation of descriptive statistics for multiple coral reef health parameters. The exploration of datasets within multivariate space using tools such as Principle Component Analysis (PCO), Multidimensional Scaling (MDS), Distance-based Linear Models, SIMPER analysis, and 2D Bubble Plots, allows for the visualization of the spatial structure of the data and the exploration of the possible influence of environmental factors on this spatial structure. Univariate power analyses are carried out separately on various parameters for sampling stations from different strata or other sampling station groupings; multivariate power analyses are also carried out when appropriate. Dominance plots and PCOs of cumulative means are also generated within PRIMER/PERMANOVA to examine the shape of the cumulative dominance curve.

Coral community parameters examined within and potentially between sites include the diversity of coral taxa (species level when possible), relative abundance, and evenness. Coral community size structure is also examined across strata and across entire monitoring sites. Aspects of coral condition, such as partial mortality (old and recent), sources of mortality, and coral disease prevalence are calculated for each sampling station and for each monitoring site/strata. Reef fish density and biomass are calculated, aggregated by species and by family. Total species richness is calculated for each site, as is the percentage of occurrence of each species across sampling stations. Macroinvertebrate diversity, density, and relative abundance are generated for species and species groups.

Comparisons of data between monitoring sites have not yet been conducted, but such comparisons may be made at a later date once an adequate understanding of factors influencing the biological communities at each site is achieved and comparisons of one or more datasets is determined to be appropriate. When appropriate, comparisons of various parameters between reefs and between sampling periods will make use of a One-Way Analysis of Variance (ANOVA) or Repeated Measures ANOVA, or other appropriate statistical tests, to determine if any differences are statistically significant. Regression analyses will be used to examine relationships between biological parameters and environmental variables. Multidimensional scaling and other multidimensional statistical tools will be used to visualize similarities and dissimilarities between reef communities. Modifications to statistical analyses carried out on data between sampling periods will have to be made to account for the combined use of fixed and non-fixed transects and quadrants. Support will be sought by the National Park Service and others utilizing this sampling approach. Assistance by Dr. Houk, now with the UOG Marine Lab, will also be sought in the further analysis of the baseline data and data collected at subsequent sampling periods.

Data Management and Reporting

A relational database and associated data entry application, which were developed through collaboration between NOAA CRED Information Services staff, BSP, and now UOGML, are currently in use by monitoring program staff. The database currently houses the coral quadrat, reef fish, and macroinvertebrate datasets. Most of the 2010-2012 observations for each dataset have been added to the database, with observations from the 2014 field season currently being entered. A thorough quality control process involving a final check of database observations against raw data sheets has yet to be conducted, but is scheduled to take place in late 2014/early 2015. The monitoring data management system is currently being expanded to include the benthic cover and water quality monitoring data collected through the Long-term Monitoring Program, as well as data collected by the Reef Flat Monitoring Program and the Guam Community Coral Reef Monitoring Program. A proposal for internal funding has also been submitted by NOAA CRED to further expand the data management system to include an application for data distribution, which will significantly improve end-user access to data generated by these monitoring programs.

The monitoring coordinator will coordinate and compile annual reports summarizing the data for resource managers. This information will be included in Guam's chapter of future NOAA *Status of the Coral Reef Ecosystems of the U.S. and Freely Associated States* reports and will be submitted to CoRIS. Information obtained through the monitoring program will be incorporated into a variety of outreach and education activities carried out by various local and federal agencies in an effort to raise awareness of the status of Guam's coral reef resources among Guam's community. A top priority for 2015 is the creation of a website for the monitoring program.

The program will be reviewed each year to determine its effectiveness and to decide if any modifications need to be made to the monitoring strategy. Any updates or changes will be incorporated into the following year's training and will be documented for future reference.

Project Timeline and Milestones

Activity	CY2016				CY2017			
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
MOU Process and Establish Account with UOG	Yellow							
Hire New Field Personnel		Yellow			Yellow			
Purchase Equipment & Supplies		Yellow	Yellow		Yellow	Yellow		
Training		Red				Red		
Scheduling		Red				Red		
Monitor existing sites		Green	Green			Green	Green	
Data Entry / QC		Green	Green	Green		Green	Green	Green
Data Analysis				Blue				Blue
Report				Blue				Blue

UOGML Reef Flat Monitoring Program

At present, seven reef flats along Guam's western coast are being monitored for coral health impacts and nutrient levels. Sites were chosen to represent a gradient of water quality impacts, starting with the relatively pristine reference point to the north, Haputo, and ending with Luminao reef flat, seaward of Apra Harbor. Sites in between these end points are as follows: Tanguisson, nearshore to the sewage outfall pipe; Tumon Bay; West Agaña, nearshore of the sewage outfall pipe; Adelup; and Piti Bomb Holes Marine Reserve. Each of these sites is currently monitored quarterly, along three 20 m x 2 m belt transects established on the reef flat at 1-2 m depth. Temperature loggers have been placed at three of these sites and multiple coral colonies have been tagged for individual monitoring. In addition, two genera of macroalgae and a single soft coral are sampled during monitoring for isotope analyses.

The monitoring of these valuable, but highly vulnerable reef sites provides a unique opportunity to have a program in place that has established a baseline or reference point against which to measure predicted improvements in response to management actions or impacts in response to increased stress from climate change and the planned military build-up. The data generated through the reef flat monitoring program provides a strong complement to the data collected at the outer reef slope sites targeted with the long-term monitoring program, particularly at locations, such as Tumon Bay and Piti Bay, where both the reef flat and outer reef slope communities with these bays are concurrently addressed through these two monitoring programs. The reef flat monitoring program provides information to managers for a critical, dynamic, yet vulnerable reef zone, and is an essential component of a comprehensive coral reef monitoring strategy.

Budget and Justification

111	Monitoring Coordinator	\$47,026.00	\$47,026.00
111	Technical support specialist	\$39,416.00	\$39,416.00
111	Monitoring assistants	\$28,000.00	\$28,000.00
111	Administrative support	\$18,060.00	\$18,060.00
111	Reef flat program filed personnel	\$4,000.00	\$4,000.00

Fringe Benefits			
113	Monitoring Coordinator	\$16,929.00	\$16,929.00
113	Technical support specialist	\$14,190.00	\$14,190.00
113	Monitoring assistants	\$10,080.00	\$10,080.00
113	Administrative support	\$6,501.00	\$6,501.00
113	Reef flat program filed personnel	\$1,440.00	\$1,440.00
Supplies			
240	Field and office supplies	\$855.00	\$855.00
Contractual			
230	Scuba equipment maintenance	\$900.00	\$900.00
230	Scuba tank rental/emergency oxygen tank refills	\$1,400.00	\$1,400.00
230	Boat (Long Term Monitoring Program)	\$9,420.00	\$9,420.00
230	Boat/truck (Reef Flat Program)	\$1,780.00	\$1,780.00
Total Federal Share		\$199,997.00	\$199,997.00

An increase in the monitoring budget is requested in order to accommodate the costs of operating at the UOG Marine Lab. These costs include a portion of the salary and benefits for administrative staff who handle tasks associated with the monitoring program (at a rate 14% of the total budget, for a total of \$24,561/yr), as well as the higher fringe benefit rate at the University of Guam (36%, compared to the 28% rate used by the Bureau of Statistics and Plan, an increase of approximately \$6900/yr). In order to remain below the maximum amount allowed by CRCP for state and territorial monitoring programs, the number of monitoring assistants is being reduced from three to two, and the amount requested for operational costs (e.g., boat use and supplies) is being reduced significantly. The reduction in requested funds for operations will be partially compensated for by the reduced costs for boat use (due to the significantly lower rate to use UOGML boats and the in-kind contribution of the NOAA PIRO inflatable), but achieving the stated goals will still be challenging. One potential solution aimed at easing budget constraints on operational costs, is to reduce the amount of time the person currently serving as the monitoring coordinator dedicates to the long-term monitoring project. As an example, if this person pursued other sources of funding for 20% of the year, it would free up approximately \$9,000.00 each year to utilize for operational or other costs. However, such an action would only be feasible if the full-time technical support position was filled and if UOGML, BSP, and NOAA were confident that that individual could continue with some of the monitoring coordinator's duties when he is involved in other projects.

Personnel

The coordinator position is a full time position with an expected salary of \$47,025.68 for FY2015 and FY2016. This salary was determined by adding a 3% increment to the monitoring coordinator's current salary as a Research Associate III step 15. Funding is also being sought to cover the continued salary of a full-time technical support specialist at the Research Associate II level, step 11. In FY2012, a NOAA-contracted technical support specialist was hired to assist with various aspects of the long-term coral reef monitoring program and related monitoring and assessment activities, such as carrying out different types of field surveys, assisting with the development of the program's water quality monitoring component, helping to coordinate the activities of the monitoring assistants, assisting with data management, and developing outreach materials and participating in outreach events. The position has proved critical in the continued development of the long-term monitoring program, significantly improving the capacity of the program, which had previously been dependent on a single full-time staff (the coordinator) and several

part-time monitoring assistants who sometimes required a considerable amount of training and whose course schedules sometimes presented challenges to completing the required field work in a timely manner. The success of the one-year position led to consensus that the position should be continued, and for FY2013 the responsibilities currently carried out by the technical support specialist were funded through the NOAA Coral Reef Fellowship Program. CRCP funding was awarded to Guam to fund the position through FY13-14, although a significant delay in the release of CRCP funds to Guam prevented the filling of the position in FY13. A qualified individual will be hired in early 2015 using recently released funds. The requested funding will support the continuance of the technical support position through FY2016 and FY2017.

In order to accommodate the additional costs associated with operating the monitoring program at the UOG Marine Lab, the number of part-time (20 hrs/wk) monitoring assistants will be reduced from three to two. The hiring of a full-time technical support position will alleviate some of the challenges associated with field personnel availability, so the reduction in the number of monitoring assistants should not compromise the monitoring team's ability to carry out the required field work. However, if for some reason funding for the full-time technical support position is not approved, the program's basic functions cannot be carried out effectively without three monitoring assistants. The monitoring assistant positions are currently filled by UOGML graduate students, but may also be filled by other qualified persons in the event that qualified graduate students are not available. The salary for field personnel was calculated using a \$14.91/hr rate for UOGML graduate students. While a full year's work by the monitoring assistants would amount to an annual salary of \$15,506.40 per monitoring assistant for a total of \$31,012.80/yr, an amount of \$28,000 was requested to account for short periods during which fewer than two monitoring assistants are employed and periods when the assistants are not able to work the full 20 hours per week. An additional \$4,000/year is requested to fund the part-time employment of one graduate student to work with Dr. Raymundo on the reef flat monitoring program.

An administrative fee of 14% of the total budget is broken down into salary and fringe benefits for administrative staff that will carry out tasks associated with the long-term monitoring program and reef flat monitoring program. The amount requested for administrative staff salary is \$18,059.56.

Fringe Benefits

Fringe benefits for all position are 36% of the base salary, an increase from the 28% rate previously used for the monitoring coordinator position when the program was coordinated out of the Bureau of Statistics and Plans.

Supplies

An estimated \$555.00/yr is required to procure consumable field and office supplies for the long-term monitoring program and \$300.00/yr is required for the reef flat monitoring program.

Consumable field and office supplies for which funding is requested include transect tapes, slates, underwater paper, pencils, rebar and nails to mark the permanent sites, batteries, battery chargers, line, buoys, PVC and miscellaneous office supplies.

Contractual

An estimated \$1,400.00/yr is required for the rental of scuba tanks for the long-term monitoring program, including compressed air and enriched air nitrox, as well as for the refill of emergency oxygen cylinders. No funding for scuba tank rental is being requested for use in the reef flat monitoring program. An estimated \$900/yr is required to cover the costs of the annual maintenance of all scuba equipment. These items fall under contractual as the items are contracted.

\$9,420.00/yr is requested to cover the costs associated with utilizing the University of Guam Marine Lab's boats. The UOGML charge a rate of \$260/day. An estimated \$2400/yr of the total \$9420/yr may be used to hire a private boat charter in order to provide flexibility during periods when the UOGML boats and staff are unavailable. The cost to charter a private boat in previous years was at \$800 per 8-hour day, but new services have recently become available that may be able to offer rates of approximately \$600/day. The 19' inflatable boat acquired by NOAA PIRO from the War in the Pacific National Historic Park will allow a small team to access relatively sheltered sites (e.g., Apra Harbor and sites along the southwest coast) located at close distances to a boat ramp, both for regular site monitoring as well as for maintenance of water quality monitoring instrumentation.

An additional \$1,780.00/yr is requested for the rental of a UOGML boat and truck for the reef flat monitoring program. The reef flat program will require the rental of a UOGML truck to access most of the monitoring sites, but will require a boat to access the Haputo Bay reef flat site. The UOGML truck rental rate is \$50/day and will be used for 20 days, while the boat/truck rate is \$260/day and will be used for three days of monitoring (to access the Haputo Bay site, which cannot be accessed by shore).

Project Management and Personnel

The principal investigator for the project is Dr. Terry J. Donaldson, Associate Professor of Ichthyology and Director of the University of Guam Marine Laboratory and David Burdick, Research Associate with the University of Guam Marine Laboratory. David Burdick is the lead on the project and will coordinate all aspects of the project "Comprehensive Long-term Monitoring at Permanent Sites on Guam," including project administration; coral reef data collection, management, and analysis; management of project database and associated web applications; report development; and outreach. This position also involves coordinating the development of jurisdictional coral reef status reports, providing technical assistance to Government of Guam natural resources agencies, and providing support for regional initiatives.

The University of Guam Marine Laboratory (UOG Marine Lab) is a member of the American Association of Underwater Scientists (AAUS) and has a Diving Control Board (DCB) in place at the UOG Marine Lab to ensure that all scientific diving is conducted in a manner that will foster safe, effective diving and minimize accidental injuries and/or illnesses. UOG Marine Lab diving manual entitled, "Standards for Scientific Diving Certification and Operation of Scientific Diving Program," was prepared to conform with the safety standards of the American Academy of Underwater Sciences (AAUS), and it is based upon the AAUS Standards for Scientific Diving (available at www.aaus.org).

Project Manager or Principal Investigator (PI)

Co-Principle Investigators: Terry Donaldson, Director, UOG Marine Lab and
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Task 2. Coral Reef Watershed Coordinator

This project is not listed in current LAS but is required to assist with capacity to address LAS efforts and update LAS.

Guam Objective 1.3: Educate target stakeholder groups about the sedimentation issues associated with specific watershed uses and activities.

Guam Objective 2.2: Create community management programs that increase public knowledge of, support for, and participation in marine preserves and science-based management.

National LBSP Impacts Objective 1.3: Implement watershed management plans and relevant LAS within priority coral reef ecosystems and associated watersheds to improve water quality and enhance coral reef ecosystem resilience. Where needed, develop (or update) watershed management plans that incorporate coral reef protection measures.

National LBSP Impacts Objective 3.5: Increase public and political awareness and understanding of the ecological and socioeconomic impacts of land-based sources of pollution on coral reef resources to promote better stewardship and informed decisions regarding activities in watershed that may adversely impact coral reef ecosystems.

National Fishing Impacts Objective 2.4: Work with relevant agencies, offices and communities to create, implement and improve the management of MPAs that protect key coral reef ecosystem components and functions.

National Fishing Impacts Objective 3.1: Increase participation of stakeholder or citizen groups in fisheries management planning, decision-making and monitoring activities that improve conservation of coral reef ecosystems.

National Fishing Impact Objective 4.3: Develop targeted, locally relevant outreach and communication strategies to increase community understanding and support for regulations to protect key coral reef ecosystem species/functional groups and expanded use of marine protected areas.

Introduction

A need exists in the Bureau of Statistics and Plans to maintain the full time position to lead the planning and implementation of a programmatic community outreach component to support the CRCP in the implementation of the Community Action Plan for the Manell Geus Watershed; lead the development, presentation, and distribution of outreach products and messages about the threats to coral reef resources in partnership with the Guam Nature Alliance and partner agencies; and to assist Guam's Coral Reef Point of Contact in coordinating the Government of Guam's efforts to protect coral reefs through watershed conservation efforts. This position will be housed at the Bureau of Statistics and Plans. The funding identified is for salary, fringe benefits, and supplies for the FY 16 and FY 17.

Ms. Anna Simeon currently fills the position. Ms. Anna Simeon was hired on February 2, 2015, as a Biologist II and will continue to fill this position through September 30, 2017.

Task Description and Methodology

The position will be hired through the normal Government of Guam hiring practices through a limited term appointment under the Government of Guam job classification as a Biologist as BSP is unable to hire this position as a permanent classified employee due to the funding source.

Task Outcomes or Products

The Watershed Coordinator will be responsible for coordinating the following outcomes: the implementation of components of the Conservation Action Plan in the Manell/Geus watershed and Asan/Piti watershed, to partner with other agencies and organizations such as the Humatak Community Foundation (HCF), Island Girl Power, Coral Reef Ambassador Program, Department of Agriculture, Guam Environmental Protection Agency and the Guam Nature Alliance to conduct outreach and education to engage the community to become stewards of our island resources and to increase the community awareness of the importance of the Asan/Piti and Manell/Geus Watershed, to coordinate the

Guardian of the Reef Training held in January, the Pig Derby and Pork in the Park Cookoff held in December. The outcome of this task is to increase capacity to manage coral reef ecosystems through targeted, effective watershed management actions.

Project Schedule

Year 1 Projects/Tasks	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
BSP Establish Award												
BSP transition FY13-14 CRCP Watershed Coordinator to FY 15-16 CRCP												
Implement Watershed and Outreach Services and Support												

Year 2 Projects/Tasks	Oct-16	Nov-16	Dec-16	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
Implement Watershed and Outreach Services and Support												

Project Management and Personnel

The project manager for this project is Ms. Lola E. Leon Guerrero. Ms. Leon Guerrero is a Planner IV (Planning Supervisor) with the Bureau of Statistics and Plans Socio Economic Planning Program and is currently administering the CRCP grant. Ms. Leon Guerrero will supervisor the Coral Reef Watershed Coordinator as directed by the Bureau of Statistics and Plans Director who also serves as the Governors Coral Reef Point of Contact in collaboration with Guam's NOAA liaisons. Guam's NOAA liaisons will monitor and guide the work of the Watershed Coordinator and will provide technical assistance.

The Coral Reef Watershed Coordinator is funded under the NA13NOS4820012 grant as a Limited Term Appointment Biologist II through the government of Guam recruitment process. The position is filled by Ms. Anna Simeon. Ms. Anna Simeon Limited Term Appointment will expire on September 30, 2015 as this is the NA13NOS4820012 expiration date. Ms Anna Simeon will continue as the Watershed Coordinator in the FY15-16 CRCP proposal.

Project Manager or Principal Investigator (PI)

Lola E. Leon Guerrero, Planner IV PI
 Bureau of Statistics and Plans, Socio Economic Planning Program
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Budget and Justification

Coral Reef Watershed Coordinator Budget Summary-Year 1			
Category	Federal funds	Matching Funds	Total
Personnel	\$40,762.00	\$0.00	\$40,762.00
(111) Coral Reef Watershed Coordinator (Biologist) @ \$19.59712 x 2080 hours x 100%			
Fringe	\$16,214.00	\$0.00	\$16,214.00
(113) Retirement @ 29.85% (\$12167), DDI (\$495), Medical (\$2583), Dental (\$225), Life (\$153), (Medicare @ 1.45% (\$591) Fringe Benefits x 100% = \$16,214			
Supplies	\$300.00	\$0.00	\$300.00
(240) Miscellaneous administrative office supplies to include copier paper, file folders, staple, paper clips, removable flash drive, post it notes \$300 necessary for the task.			
TOTALS	\$57,276.00	\$0.00	\$57,276.00

Coral Reef Watershed Coordinator Budget Summary-Year 2			
Category	Federal funds	Matching Funds	Total
Personnel	\$40,762.00	\$0.00	\$40,762.00
(111) Coral Reef Watershed Coordinator (Biologist) @ \$19.59712 x 2080 hours x 100%			
Fringe	\$16,214.00	\$0.00	\$16,214.00
(113) Coral Reef Watershed Coordinator (Biologist) Retirement @ 29.85% (\$12167), DDI (\$495), Medical (\$2583), Dental (\$225), Life (\$153), (Medicare @ 1.45% (\$591) Fringe Benefits x 100% = \$16,214			
Supplies	\$0.00	\$0.00	\$0.00
Contractual	\$0.00	\$0.00	\$0.00
TOTALS	\$56,976.00	\$0.00	\$56,976.00

Personnel

Anna Simeon, Biologist II, is the grant funded full time watershed coordinator hired on February 2, 2015. Her salary is \$40,762 for FY2015 and FY2016. This salary was determined by the Government of Guam Competitive Wage Act for a Biologist II position. Her salary is \$19.59712 x 2080 hours x 100%. She will continue collaborate with Department of Agriculture, the University of Guam and other natural resource agencies to address watershed restoration needs. The watershed coordinator will work with business partners, village communities, etc. to relay information, provide technical assistance and facilitate training sessions for Best Management Practices (BMPs) and watershed management tools as well as to work with specific community projects from the Conservation Action Plan for watersheds, such as reforestation plans, removal of invasive species, and creation of rain gardens

Fringe Benefits

The difference in the Coral Reef Watershed Coordinator from \$11,360 to \$16,214 is due to the increase in fringe benefits when the grant was budgeted in FY 2012 and the increase in the salary as a result of the implementation of the Government of Guam Competitive Wage Act in 2014. The current grant funded watershed coordinator, Ms. Anna Simeon, detail fringe benefit cost for a single employee under

classification 1 is as follow: Retirement @ 29.85% (\$12167), DDI (\$495), Medical (\$2583), Dental (\$225), Life (\$153), (Medicare @ 1.45% (\$591) Fringe Benefits x 100% = \$16,214.

Supplies

General administrative office supplies to include copier paper, file folders, staple, paper clips, removable flash drive, post it notes \$300 necessary for the task in Year 1 and Year 2.

Task 3. Coral Reef Assistant Program

The NOAA Coral Reef Management Assistant Program provides the state and territorial coral reef management agencies with highly qualified candidates whose education and work experience meet each island's specific needs, while providing the individual fellows with professional experience in coastal and coral reef resources management.

Each jurisdiction develops a separate Statement of Work which contains project descriptions, goals and objectives, minimum and desired qualifications, and salary, among other information. The Statements of Work uniquely reflect each jurisdiction's particular needs, complementing other ongoing local projects and management activities. Successful candidates will meet these needs.

Budget and Justification

Coral Reef Fellows Budget Summary-Year 1			
Category	Federal funds	Matching Funds	Total
Contractual	\$10,714.00	\$0.00	\$10,714.00
TOTALS	\$10,714.00	\$0.00	\$10,714.00
Coral Reef Fellows Budget Summary-Year 2			
Category	Federal funds	Matching Funds	Total
Contractual	\$10,714.00	\$0.00	\$10,714.00
TOTALS	\$10,714.00	\$0.00	\$10,714.00
<i>The National Oceanic Atmospheric Administration is authorized to hold \$10,714 of the grant for the Coral Reef Fellows for Year 1 and Year 2.</i>			

Task 4. Travel

Introduction

Travel funds are needed for Guam participation in the U.S. Coral Reef Task Force meeting. Members of the AIC meet in-person twice a year, coinciding with U.S. Coral Reef Task Force (USCRTF) meetings. Each AIC Meeting typically has two sessions; an Executive Session (for AIC members only) and an Open Session (open to invited guests). The AIC typically uses the time to discuss internal issues, introduce new members, discuss priority issue areas, and come to consensus on any outstanding AIC decisions. Time is also taken during the meeting for POCs to share information and talk about any concerns or issues amongst themselves (without Advisors or Secretariat director).

Each of the AIC’s member jurisdictions are a member of the U.S. Coral Reef Task Force (USCRTF). The AIC Affiliate members are non-voting members of the USCRTF.

AIC members attend the biannual meetings of the USCRTF each year, typically with their principals or Task Force member (i.e., Governor or member representative). At these meetings, the AIC Chair presents an update report and presentation to Task Force members of priorities and accomplishments since the previous Task Force meeting.

Task Outcomes or Products

Funding will be used to enable the Governor, the designated Coral Reef Point of Contact, and or the Governor designee (should the governor not be able to attend) to attend the U.S. Coral Reef Task Force meetings. Their attendance at these meetings will ensure Guam continues to address the need for continued resources for the health and protection of Guam’s coral reefs. By addressing these resources, it will help sustain Guam’s tourism industry and balance responsible development along Guam’s shorelines.

Project Schedule

Year 1 Projects/Tasks	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
US Coral Reef Task Force Meeting in Washington D.C.												
US Coral Reef Task Force Meeting in Jurisdiction												
Year 2 Projects/Tasks	Oct-16	Nov-16	Dec-16	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
US Coral Reef Task Force Meeting in Washington D.C.												
US Coral Reef Task Force Meeting in Jurisdiction												

Project Manager or Principal Investigator (PI)

Lola E. Leon Guerrero, Planner IV PI
 Bureau of Statistics and Plans, Socio Economic Planning Program
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Budget and Justification

Travel Budget Summary-Year 1			
Category	Federal funds	Matching Funds	Total
Travel	\$10,344.00	\$0.00	\$10,344.00
TOTALS	\$10,344.00	\$0.00	\$10,344.00
Travel Budget Summary-Year 2			
Category	Federal funds	Matching Funds	Total

Travel	\$10,000.00	\$0.00	\$10,000.00
TOTALS	\$10,000.00	\$0.00	\$10,000.00

<p>USCRTF Meeting in Year 1 Travel funds for the Coral Reef Point of Contact and the Governor to attend the Coral Reef Meetings in Washington DC and the local jurisdiction.</p> <p>Airfare \$2717 x 1 = \$2717 to Washington, D.C. Per Diem \$222 x 130% (\$288.60) = \$510 x 2 days x 1 travel day = \$1531 for Governor Per Diem \$222 x 125% (\$277.50) = \$499.50 x 3 days x 1 travel day = \$1998.00 for POC</p> <p>Airfare \$2100 x 1 = \$2100 to USCRTF meeting in Jurisdiction Per Diem \$222 x 125% (\$277.50) = \$499.50 x 3 days x 1 travel day = \$1998.00 for POC</p> <p>USCRTF Meeting in Year 2 Travel funds for the Coral Reef Point of Contact and the Governor to attend the Coral Reef Meetings in Washington DC and the local jurisdiction.</p> <p>Airfare \$2373 x 1 = \$2373 to Washington, D.C. Per Diem \$222 x 130% (\$288.60) = \$510 x 2 days x 1 travel day = \$1531 for Governor Per Diem \$222 x 125% (\$277.50) = \$499.50 x 3 days x 1 travel day = \$1998.00 for POC</p> <p>Airfare \$2100 x 1 = \$2100 to USCRTF meeting in Jurisdiction Per Diem \$222 x 125% (\$277.50) = \$499.50 x 3 days x 1 travel day = \$1998.00 for POC</p>			
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Task 5. All-island Committee (AIC) Dues

The AIC Secretariat is an office which serves to lead the coordination, development, communication and implementation of priorities established by the AIC. It was established in 2002 to provide policy support and coordination for the Committee’s participation in the USCRTF. The AIC Secretariat is made up of a full-time Executive director and three Advisors (voluntary). The Secretariat helps the AIC coordinate coral reef conservation initiatives with federal agencies, between jurisdictions, and with other non-federal partners. The AIC Secretariat is based in Honolulu, HI and funded by the AIC jurisdictions and the National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program.

The Executive director of the Secretariat provides administrative, logistical, and policy support for the AIC. Three AIC Advisors provide guidance and expertise, in coral reef science, resource management, and policy, to the AIC members, affiliates, and Secretariat executive director. All three Advisors are located in Honolulu, HI.

Budget and Justification

AIC Dues Budget Summary-Year 1			
Category	Federal funds	Matching Funds	Total
Contractual	\$24,286.00	\$0.00	\$24,286.00
TOTALS	\$24,286.00	\$0.00	\$24,286.00

Travel Budget Summary-Year 2			
Category	Federal funds	Matching Funds	Total

Contractual	\$24,286.00	\$0.00	\$24,286.00
TOTALS	\$24,286.00	\$0.00	\$24,286.00
<i>The National Oceanic Atmospheric Administration is authorized to hold \$24,286 of the grant for Guam's All Island Committee dues for Year 1 and Year 2.</i>			

Task 6. Coral Reef Initiative Coordinator

Project not identified in Guam's Coral Reef Management Priorities

The management of Guam's Coral Reef Conservation Grant Projects requires a staff to ensure that proper project reporting and implementation, information requests, and document productions are completed in a timely manner. It will ensure Guam's coral reef management priorities and local action strategy are updated. The CRI Coordinator position manages the grants funded by CRCP through the Bureau of Statistics and Plans (BSP), and oversees a wide range of projects and activities. The position will result in better management of CRCP projects as well as improved coordination of multi-agency responses to requests for assistance and review from off-island organizations and research institutions. The CRI Coordinator will ensure timely and professional project implementation and reporting; coordinate the development and refinement of Guam's local action strategies and Guam coral reef management priorities; and to provide direct support to Guam's Coral Reef Point of Contact and Guam's CRICC and CRIPAC.

This position is currently not filled. The Bureau of Statistics and Plans will recruit the position through the Government of Guam recruitment limited term appointment as a Management Analyst III, Planner III and or Program Coordinator II.

Task Description and Methodology

The position will be hired through the normal Government of Guam hiring practices through a limited term appointment under the Government of Guam job classification as Management Analyst III, Planner III and or Program Coordinator II. To ensure there is no delay in the hiring of the position, the Bureau of Statistics and Plans will prepare and submit the job announcement for the position to NOAA in July 2015 to place on the coral list serve. The job announcement will open August 3, 2015 and close August 21, 2015. Compile and submit the resumes to the grantor for pre approval by October 1, 2015. Submit potential pre approved applicant resume to DOA HR for prescreen for qualification. Conduct interviews upon submission of pre approval list from grantor. Submit selection to grantor by October 19, 2015. Inform application of selection by October 23, 2015. October 26, 2015 submit GG1 for hiring of applicant.

Task Outcomes or Products

The CRI Coordinator will be responsible for coordinating the development of the following products: Quarterly and semi-annual progress reports, CRCP FY17-18 grant, lead the update of LAS documents, review and update Guam's Coral Management Priorities, and other progress reports and informational requests as needed.

Project Schedule

Year 1 Projects/Tasks	Oct- 15	Nov- 15	Dec- 15	Jan- 16	Feb- 16	Mar- 16	Apr- 16	May- 16	Jun- 16	Jul- 16	Aug- 16	Sep- 16
BSP Establish Award												
BSP submit GG1 recruitment												
BSP receives potential applicants resume and submits resume to grantor for pre approval												
BSP conducts interview, inform grantor of selection, inform applicants												
CRI Coordinator hired and implements task defined in Scope of Work												
Year 2 Projects/Tasks	Oct- 16	Nov- 16	Dec- 16	Jan- 16	Feb- 16	Mar- 16	Apr- 16	May- 16	Jun- 16	Jul- 16	Aug- 16	Sep- 16
CRI Coordinator continues to implement task defined in Scope of Work												

Project Management and Personnel

The project manager for this project is Ms. Lola E. Leon Guerrero. Ms. Leon Guerrero is a Planner IV (Planning Supervisor) with the Bureau of Statistics and Plans Socio Economic Planning Program and is currently administering the CRCP grant. Ms. Leon Guerrero will supervisor the Coral Reef Initiative Coordinator as directed by the Bureau of Statistics and Plans Director who also serves as the Governors Coral Reef Point of Contact in collaboration with Guam's NOAA liaisons. Guam's NOAA liaisons will monitor and guide the work of the CRI Coordinator and will provide technical assistance.

Project Manager or Principal Investigator (PI)

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Budget and Justification

Coral Reef Initiative Coordinator Budget Summary-Year 1			
Category	Federal funds	Matching Funds	Total
Personnel	\$40,762.00	\$0.00	\$40,762.00
(111) Coral Reef Initiative Coordinator (Grade M, Step 1) @ \$19.59712 x 2080 hours x 100%			
Fringe	\$16,214.00	\$0.00	\$16,214.00
(113) Coral Reef Initiative Coordinator (Grade M, Step 1) Retirement @ 29.85% (\$12167), DDI (\$495), Medical (\$2583), Dental (\$225), Life (\$153), (Medicare @ 1.45% (\$591) Fringe Benefits x 100% = \$16,214			
Supplies	\$3,024.00	\$0.00	\$3,024.00

The supplies include: (250) a computer workstation with application (\$2000) and a laser jet printer (\$900) for use by CRI Coordinator to be used for grant administration; and general officer supplies (\$124) to be used for grant administration such as flash drive, paper, file folder, highlighters.			
TOTALS	\$60,000.00	\$0.00	\$60,000.00

Coral Reef Initiative Coordinator Budget Summary-Year 2			
Category	Federal funds	Matching Funds	Total
Personnel	\$40,762.00	\$0.00	\$40,762.00
(111) Coral Reef Initiative Coordinator (Grade M, Step 1) @ \$19.59712 x 2080 hours x 100%			
Fringe	\$16,214.00	\$0.00	\$16,214.00
(113) Coral Reef Initiative Coordinator (Grade M, Step 1) Retirement @ 29.85% (\$12167), DDI (\$495), Medical (\$2583), Dental (\$225), Life (\$153), (Medicare @ 1.45% (\$591) Fringe Benefits x 100% = \$16,214			
Supplies	\$0.00	\$0.00	\$0.00
Contractual	\$0.00	\$0.00	\$0.00
TOTALS	\$56,976.00	\$0.00	\$56,976.00

Personnel

This is a new position that will be responsible to focus on coral reef coordination, implementation of funded projects, and award administration. BSP will hire the Coral Reef Initiative Coordinator as a Management Analyst, Program Coordinator or Planner under Grade M, Step 1 at annual salary of \$40,762 (\$19.59712 x 2080 hours x 100%) for FY2015 and FY2016. The CRI Coordinator will be responsible for project management of CRCP projects, coordinate reporting on projects and grants, plan and implement training programs and workshops, secure and manage grant funding, assist and oversee the education and outreach programs for CRCP, coordinate and facilitate CRICC and CRIPAC meetings. The CRI Coordinator will ensure projects are properly implemented, reports are completed, information requests are responded to, and high quality document production is completed.

Fringe Benefits

BSP will hire the Coral Reef Initiative Coordinator as a Management Analyst, Program Coordinator or Planner under Grade M, Step 1. The anticipated fringe benefit cost is for a single employee under classification 1: Retirement @ 29.85% (\$12167), DDI (\$495), Medical (\$2583), Dental (\$225), Life (\$153), (Medicare @ 1.45% (\$591) Fringe Benefits x 100% = \$16,214.

Supplies

General administrative office supplies to include: (250) a computer workstation with application (\$2000) and a laser jet printer (\$900) for use by CRI Coordinator for grant administration duties and responsibilities such as prepare progress reports, prepare CRCP grants, and other programmatic responsibilities; and general office supplies (\$124) to be used for grant administration such as flash drive, paper, file folder, highlighters, stapler, etc.

Task 7. Support for Public Outreach and Education

The goals of the public outreach and education Local Action Strategies (LAS) are to increase environmental education about the value of coral reefs from an ecosystem based approach through coordinated public awareness and outreach plans.

Guam Goal 1.3: *Educate target stakeholder groups about the sedimentation issues associated with specific watershed uses and activities.*

Guam Goal 1.4: *Increase public awareness of how changes in household and commercial land use activities can contribute to improved reef condition.*

Guam Objective 2.2: *Create community management programs that increase public knowledge of, support for, and participation in marine preserves and science-based management.*

Summary

Effective and measured public outreach and education is a critical need for many natural resources agencies dealing with threats to coral reefs on Guam. Various partners in the Guam Coral Reef Initiatives Coordinating Committee, Government of Guam Agencies of the Guam First Advisory Council and Commission, Guam Nature Alliance (former Environmental Education Committee), the Environmental Education outreach professionals and various Local Action Strategy groups agree that public education and outreach is essential. In addition to that stated need, many government agencies such as the Department of Agriculture, Guam Environmental Protection Agency (EPA), University of Guam (UOG) Marine Lab, and Department of Parks and Recreation lack the trained staff and time to complete the amount of effective outreach and education.

This project will provide funding for continued outreach and education activities and items to support the “Guardians of the Reef Program”, Pig Hunting Derby, Pork in the Park Cookoff, watershed tours and hikes, beach cleanup, Earth Month and community educational training, clinics, and workshops in collaboration with local and federal government natural resource agencies and nongovernmental organizational. Funds will also support efforts and activities of the Guam Nature Alliance (GNA) events and its subcommittees (hanom/freshwater, tano/land and tasi/sea), and media campaigns to educate the community “to connect or learn about Guam’s environment”, “about how resources are culturally significant and should be respected”, and “calls to action to protect resources”.

Task Description and Methodology

This project is focused on providing effective messaging for education and outreach about threats to coral reefs. The activities to achieve this goal will include the following:

- Create and implement effective streamlined public service announcement in collaboration with Guam's NOAA Liaison, and Guam's Natural Resource Agencies.
- Assist in the coordination of the Guardians of the Reef Program which aims at educating third and fifth grade students on topics related to Guam's coral reef ecosystems. In addition to coordinating the program which involves the scheduling of fieldtrips, training of the guardians (11th and 12th graders in high school) and transportation will also be provided.

Guam's Guardians of the Reef is an ongoing environmental education program that educates 3rd grade elementary students about the importance of Guam's coral reefs, and it engages the "Guardians" as active stewards of Guam's coral reef ecosystem. This program has been around for nine years and has had positive responses from the education community and has impacted former Guardians. In the recent Guardian of the Reef training held January 24, 2015, three former Guardians whom presented at the training are in college. One once to be a science teacher and the other two are biology major. To quantify the success of the programs, the following quantitative data information will be collected and reported in the final report:

1. Number of high school students who become Guardians. (This data will be captured during the training held in January. Sign in sheet.)
2. Number of high schools that participate in the Guardians of the Reef. (This data will be captured during the training held in January. Sign in sheet.)
3. Number of new Guardians that were introduced to the Guardians outreach presentation when they were 3rd grader. (This data will be captured during the training held in January. The questions will be posed at the beginning of the training.)
4. Number of outreach presentations conducted at the elementary school broken down by number of students and name of school. (This data will be captured through the elementary teachers.)

Furthermore, BSP will utilize the survey developed by the former Watershed Coordinator, Ms. Christine Camacho to obtain feedback from the 3rd grade teachers on the outcome of the Guardian of the Reef presentation at their school. The results will be reported in the final progress report.

- Support the Guam Nature Alliance (GNA) environmental awareness activities.
- Support the Humatak Foundation outreach events.
- Support increase environmental education outreach opportunities to include but not be limited to displays at public outreach venues; watershed hikes; clean ups; Service Learning Expo; Earth Month Activities; Local Action Strategies (LAS); Guam's Pig Hunting Derby and Pork in the Park Cook-Off; and Guam's wildland fire campaign
- Support efforts to develop a community monitoring/stewardship program proposed for the Manell-Geus Watershed and/or other watersheds of concern.

The outreach and education efforts will be lead by the Watershed Coordinator and assisted by the locally funded Planner I.

Outcome and Products

These efforts will increase the public's understanding and support for marine preserves, watershed management, appropriate recreational uses and communicating science-based management with the general community. Efforts will be supported by print, television, radio, online and other materials and supplies to support outreach and educational efforts. Quantitative data will be provided based on the list of outreach events conducted, the number of outreach participants and or community involvement, organization partnered, and feedback from the Guardian of the Reef teachers on the outcome.

Project Schedule

Year 1 Projects/Tasks	Oct - 15	Nov - 15	Dec - 15	Jan - 16	Feb - 16	Mar - 16	Apr - 16	May - 16	Jun - 16	Jul - 16	Aug - 16	Sep - 16
Guam Nature Alliance (GNA) and other NGO outreach activities												
Guardians of the Reef Program												
Guam Pig Hunting Derby & Pork in the Park Cook-Off												
Service Learning Expo												
<i>Munga masongge Guahan, Don't burn Guam!</i>												

Year 2 Projects/Tasks	Oct - 16	Nov - 16	Dec - 16	Jan - 17	Feb - 17	Mar - 17	Apr - 17	May - 17	Jun - 17	Jul - 17	Aug - 17	Sep - 17
Guam Nature Alliance (GNA) and other NGO outreach activities												
Guardians of the Reef Program												
Guam Pig Hunting Derby & Pork in the Park Cook-Off												
Service Learning												

Expo												
<i>Munga masongge Guahan, Don't burn Guam!</i>												

Project Manager or Principal Investigator (PI)

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Task Budget and Justification

Task Budget Summary-Year 1			
Category	Federal funds	Matching funds	Total
Personnel and Fringe (In-kind)		\$16,793.00	\$16,793.00
<i>35% of the Planner I (Christian Benitez) will be directly involved in the coordination and implementation of the outreach and education task \$33911 salary + \$14069 fringe = \$47,980 x .35 = \$16793</i>			
Supplies	\$1,000.00		\$1,000.00
<i>Miscellaneous outreach supplies to include 200 pcs x \$1.50 = \$300 color butcher paper, 1 dozen x 20 pkg x \$5 = \$100 colored pipe cleaners pkg, 1 dozen x 10 x \$15 = \$150 color pencils, 1 dozen x 10 x \$15 = \$150 color markers, 25 pcs x \$2.00 = \$50 elementary scissors, 20 pcs x \$3 = \$60 scotch tape, clear plastic storage bins to store supply 5 x \$25 = \$125 for Guardian of the Reef Training</i>			
Contractual	\$19,000		\$19,000
<i>Transportation (\$9,360) for the Guardians of the Reef Program to provide roundtrip transportation for the high school Guardians to the elementary schools \$90 per hour x 3 hours x 18 trips = \$4860 and Guam Nature Alliance fieldtrips \$90 per hour x 5 hours x 10 trips = \$4500; Outreach and Education Items and Contractual Printing (\$9031) such as Guardians of the Reef t-shirts (\$1003), Guardian of the Reef Coloring Book printing (black and white pages, collated, folded, artwork ready (2000 x .15 = \$300), Pledge Cards (\$.09 x \$3000 = \$270) Guardian of the Reef Training \$2750 x 1 = \$2750, Pig Hunting Derby and Pork in the Park t-shirts (\$3708), Banners (\$250 x 4 = \$1000) and other printed materials to support outreach; and Media (\$609) such as radio, newspaper, commercials/PSAs.</i>			
TOTALS	\$20,000.00	\$16,793.00	\$36,793.00
Task Budget Summary-Year 2			
Category	Federal funds	Matching funds	Total
Personnel and Fringe (In-kind)		\$16,793.00	\$16,793.00
<i>35% of the Planner I (Christian Benitez) will be directly involved in the coordination and implementation of the outreach and education task \$33911 salary + \$14069 fringe = \$47,980 x .35 = \$16793</i>			
Contractual	\$12,229.00		\$12,229.00
<i>Transportation (\$9,360) for the Guardians of the Reef Program to provide roundtrip transportation for the high school Guardians to the elementary schools \$90 per hour x 3 hours x 18 trips = \$4860 and Guam Nature Alliance fieldtrips \$90 per hour x 5 hours x 10 trips = \$4500; Outreach and Educational Items(\$2,869) such as Guardians of the Reef t-shirts (\$1003) and other printed materials (\$1866) to support outreach activities and messaging for Guardians</i>			
TOTALS	\$12,229.00	\$16,793.00	\$29,022

Budget Narrative and Justification

PERSONNEL AND FRINGE BENEFITS

The locally funded Planner I will be directly involved in the coordination and implementation of the outreach and education task in collaboration with the Watershed Coordinator. Thirty five percent of the Planner I time will be involved in the outreach and education task (In-kind match).

SUPPLIES

Supply costs (\$1,000) include items to support public outreach events and community training opportunities. The itemized items are as follows: Miscellaneous outreach supplies to include 200 pcs x \$1.50 = \$300 color butcher paper, 1 dozen x 20 pkg x \$5 = \$100 colored pipe cleaners pkg, 1 dozen x 10 x \$15 = \$150 color pencils, 1 dozen x 10 x \$15 = \$150 color markers, 25 pcs x \$2.00 = \$50 elementary

scissors, 20 pcs x \$3 = \$60 scotch tape, clear plastic storage bins to store supply 5 x \$25 = \$125 for Guardian of the Reef Training for Year 1.

CONTRACTUAL

Contract costs include printing for materials for public outreach events, costs for logistics and facilitation for outreach training, media costs including advertisement and airing of public service announcements (PSAs). **It is important to note that outreach items (t-shirts, stickers, bags, pens, etc) that has messages or logos printed falls under contractual.**

Transportation

Transportation has been a major limiting factor regarding participant numbers at outreach events. Educators are excited by programs that include transportation along with service learning opportunities. Providing transportation maximizes exposure of the program throughout the Guam Department of Education (GDOE).

The budget needs for the Guardians of the Reef Program (\$4,860): The Guardians of the Reef Program is one of Guam's most successful service learning programs available on island reaching out to over 2,400 third grade elementary school students each year for over 10 years, not including the number of high school students trained in the program and fifth graders who experience the Guardians of the Reef Program puppet show. Transportation provided by this grant ensures student participation and success. The funds from this project will provide transportation to training opportunities for students and transportation to schools for presentations. The itemized cost to provide roundtrip transportation for the high school Guardians to the elementary schools is \$90 per hour x 3 hours x 18 trips = \$4860 for Year 1 and Year 2.

The budget needs for the Guam Nature Alliance (\$4,500): The funds will provide transportation for Guam Nature Alliance fieldtrips which promote environmental education and service learning opportunities for students who potentially do not participate in the Guardians of the Reef Program, maximizing opportunities for Guam's youth to become more engaged through their service learning options. The itemized cost to provide roundtrip transportation Guam Nature Alliance fieldtrips is \$90 per hour x 5 hours x 10 trips = \$4500.

Outreach and Education Items and Contractual Printing (\$9,640) such as Guardians of the Reef t-shirts (\$1003), Guardian of the Reef Coloring Book printing (black and white pages, collated, folded, artwork ready 2000 x .15 = \$300, Pledge Cards (\$.09 x 3000 = \$270) Guardian of the Reef Training \$2750 x 1 = \$2750, Pig Hunting Derby and Pork in the Park t-shirts (\$3708), Banners (\$250 x 4 = \$1000) and other printed materials; and Media (\$609) such as radio, newspaper, commercials/PSAs for Year 1; and (\$2869) such as Guardians of the Reef t-shirts (\$1003) and other printed materials (\$1866) to support outreach activities and messaging for Guardians, Pig Hunting Derby and Pork in the Park for Year 2. These items are necessary to support these educational outreach events.

The media expenditures will include production costs and air time for both radio and televised commercials/PSAs (\$609) for Year 1. Messaging will support the above mentioned campaigns and ongoing efforts by diversifying the range and methodologies taken to engage community members.

Funding will ensure the Guardians have t-shirts to distinguish and identify them as Guardians of the Reef when they go out to the elementary school to present the Guardian of the Reef presentation. This outreach item is essential for the program as the Guardians are educating the 3rd grade students about the importance of Guam's reefs as stewards of Guam's coral ecosystem.

Guardian of the Reef T-shirts			
S	32	\$9.00	\$288.00
M	25	\$9.00	\$225.00
L	13	\$9.00	\$117.00
XL	5	\$9.00	\$45.00
2XL	2	\$11.00	\$22.00
YS	13	\$9.00	\$117.00
YM	<u>21</u>	\$9.00	<u>\$189.00</u>
	111		\$1,003.00

The funding will ensure participants of the annual derby will be provided with their first piece of safety preparedness, their hunter safety orange t-shirts. The t-shirts play multiple roles as such promotional items have proven in the past, safety, recognition for the event and cause that surpasses the timeframe of the event itself, and a desire for nonparticipants to become engaged during the next event. The derby aside from a getting a bright t-shirt, is the approach Guam has taken to raise awareness regarding feral ungulates/invasive species, and impacts incurred by them on our natural resources, watershed and coral resources. The derby and cook-off enabled and continues to encourage conversations to take place between community members (business owners, land owners, hunters, natural resource recreational users, local and federal government, students and educators) and resource managers. These conversations have led to support and a raised awareness regarding feral ungulates, wild land arson, erosion, sedimentation, and coral resources.

Pig Hunting Derby Long Sleeve and Short Sleeve T-shirts							
S - LS	20	\$7.25	\$145.00	S	25	\$4.50	\$112.50
M - LS	75	\$7.25	\$543.75	M	100	\$4.50	\$450.00
L - LS	75	\$7.25	\$543.75	LG	100	\$4.50	\$450.00
XL -				XL	150	\$4.50	\$675.00
LS	30	\$7.25	\$217.50	2XL	35	\$6.00	\$210.00
2XL -				3XL	10	\$6.00	\$60.00
LS	25	\$9.00	\$225.00	5XL	<u>2</u>	\$6.00	<u>\$12.00</u>
3XL -							
LS	5	\$9.00	\$45.00				
5XL -							
LS	<u>2</u>	\$9.00	<u>\$18.00</u>				
	232		\$1,738.00		422		\$1,969.50

Banners			
Pig Derby	2	\$250.00	\$500.00
Pork in the Park	<u>2</u>	\$250.00	<u>\$500.00</u>
	4		\$1,000.00

TABLE OF ANTICIPATED PRODUCTS AND OUTCOMES

Task and Project Title		Anticipated Work Products or Outcomes	Expected Date of Deliverables
Task 1	Comprehensive Long Term Monitoring at Permanent Sites on Guam	Annual Coral Reef Monitoring Data; State of the Reef Report	12/30/17
Task 2	Coral Reef Watershed Coordinator	Partnership with Organization, Increase outreach and education on Guam's Watershed, and promote community-based environmental stewardship	12/30/17
Task 3	Coral Reef Fellows Program ¹	Coral Reef Fellow	10/1/2015 Year 1 and 10/1/2016 Year 2
Task 4	Coral Reef Initiative Coordinator	Submission of Progress Reports; Draft Guam's 2015-2020 Coral Reef Management Priorities; Updated Local Action Strategy	12/30/17
Task 5	Travel	Coral Reef POC and Governor attendance at meetings	12/30/17
Task 6	AIC Dues ²	AIC Dues Paid	10/1/2015 Year 1 and 10/1/2016 Year 2
Task 7	Public Outreach and Education	Increase outreach, education, and awareness	12/30/17

BUDGET NARRATIVE

SCOPE OF WORK FOR FEDERALLY FUNDED POSITION AND IN-KIND MATCH

Monitoring Program Coordinator – Coral Reef Biologist Comprehensive Long-term Coral Reef Monitoring Program

Task Summary:

The Monitoring Program Coordinator's primary role is to coordinate all aspects of the project "Comprehensive Long-term Monitoring at Permanent Sites on Guam," including project administration; coral reef data collection, management, and analysis; management of project database and associated web applications; report development; and outreach. This position also involves coordinating the development of jurisdictional coral reef status reports, providing technical assistance to Government of Guam natural resources agencies, and providing support for regional initiatives.

Goals and Objectives:

The primary goals of the updated Guam Coral Reef Monitoring Plan, according to which the project "Comprehensive Long-term Monitoring of Permanent Sites on Guam" is carried out, are to:

- Determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers' decision making process and increase the effectiveness of natural resource management on Guam.
- Provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management.
- Provide data to better understand the dynamic nature and condition of the island's coastal ecosystems.
- Allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- Measure progress towards performance goals.

Project Description

Guam's comprehensive long-term coral reef monitoring program involves the regular monitoring of a suite of coral reef ecosystem health parameters at high priority sites around Guam. The program continues to be implemented according to an update to the coral reef monitoring strategy originally developed in 2006 by the Guam Coral Reef Monitoring Group (GCRMG). Data collection began in 2009 and since then data has been collected at four sites, with the establishment of three additional sites planned for late 2014/early 2015. The program's comprehensive approach to ecological monitoring, combined with the high density of samples within a given site, provide unique data critical to understanding changes in condition at these high priority sites and for the effective management of these areas. In addition to the primary set of tasks related directly to the long-term monitoring of coral reefs at high priority permanent sites, the Monitoring Program Coordinator also coordinates the development of jurisdictional coral reef status reports, provides technical assistance to Government of Guam natural resources agencies, and provides support for regional initiatives.

Task Descriptions:

Task 1: Administration and implementation of the "Comprehensive Long-term Coral Reef Monitoring at Permanent Sites on Guam" project (75%)

- Coordinate the administration and implementation of the "Long-term Coral Reef Monitoring at Permanent Sites on Guam" project (also known as the Guam Long-term Coral Reef Monitoring Program), including grant proposal development; procurement; the collection, management, analysis, and presentation of coral reef monitoring data; and directly related activities.
- Participate in the development of grant proposals, including the formulation, monitoring, and control of budget for the Guam Long-term Coral Reef Monitoring Program and related activities.

- Plan, coordinate, and direct the activities of subordinate biologists and auxiliary personnel hired to support the Guam Long-term Coral Reef Monitoring Program; these personnel may include the Monitoring Technical Support Specialist and the UOGML Monitoring Assistants.
- Coordinate the activities of personnel from other agencies/organizations participating in the Guam Long-term Coral Reef Monitoring Program and related monitoring activities carried out as part of as part of the U.S. Coral Reef State and Territory Monitoring Program.

Task 2: Manage Guam’s coral reef monitoring database and associated applications (10%)

- Coordinate the development and maintenance of a relational database and associated applications for the management and distribution of coral reef monitoring data.

Task 3: Coordinate the development of jurisdictional coral reef status reports and prepare technical papers (5%)

- Coordinate development of the Status of the Coral Reef Ecosystems of Guam Report.
- Prepare technical papers for publication.
- Provide data to managers to improve understanding of the dynamic nature and condition of the island’s coral ecosystems and to contribute to effective coral reef management.

Task 4: Provide technical support and assistance for Government of Guam agencies and partners (5%)

- Provide technical advice to the natural resource agency personnel involved in reviewing permit applications for projects with potential impacts to Guam’s coral reef resources.
- Direct the conduct of, and participates in field surveys, including those that may require the use of scuba equipment, for the collection of biological and environmental data.
- Analyze and evaluate environmental impact statements, assessments, mitigation and development plans related to impacts to Guam’s natural resources.

Task 5: Support Regional Initiatives (5%)

- Lead or participate in marine resource measures and related groups for regional environmental initiatives.

Locations of Positions and Supervision:

The Monitoring Program Coordinator will be housed at the University of Guam Marine Lab and will be under the direct supervision of the Director of the Marine Lab.

Coral Reef Biologist - Technical Support Comprehensive Long-term Coral Reef Monitoring Program

Task Summary:

The primary role of the Coral Reef Biologist – Technical Support staff is to assist the Monitoring Program Coordinator in the implementation of the project “Comprehensive Long-term Monitoring at Permanent Sites on Guam.” Tasks include assisting with project administration; coral reef data collection, management, and analysis; management of project database and associated web applications; report development; and outreach. This position also involves coordinating the development of jurisdictional coral reef status reports, providing technical assistance to Government of Guam natural resources agencies, and providing support for regional initiatives.

Goals and Objectives:

The primary goals of the updated Guam Coral Reef Monitoring Plan, according to which the project “Comprehensive Long-term Monitoring of Permanent Sites on Guam” is carried out, are to:

- Determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers’ decision making process and increase the effectiveness of natural resource management on Guam.
- Provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management.
- Provide data to better understand the dynamic nature and condition of the island’s coastal ecosystems.
- Allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- Measure progress towards performance goals.

Project Description

Guam’s comprehensive long-term coral reef monitoring program involves the regular monitoring of a suite of coral reef ecosystem health parameters at high priority sites around Guam. The program continues to be implemented according to an update to the coral reef monitoring strategy originally developed in 2006 by the Guam Coral Reef Monitoring Group (GCRMG). Data collection began in 2009 and since then data has been collected at four sites, with the establishment of three additional sites planned for late 2014/early 2015. The program’s comprehensive approach to ecological monitoring, combined with the high density of samples within a given site, provide unique data critical to understanding changes in condition at these high priority sites and for the effective management of these areas. In addition to the primary set of tasks related directly to the long-term monitoring of coral reefs at high priority permanent sites, the Coral Reef Biologist – Technical Support staff will also contribute to the development of jurisdictional coral reef status reports and will provide technical assistance to Government of Guam natural resources agencies.

Task 1: Assist with implementation of the project “Comprehensive Long-term Coral Reef Monitoring of Permanent Sites on Guam” (80 %)

- Assist the Monitoring Program Coordinator with project administration, including procurement, grant development, and related activities.
- Conduct coral reef data collection, management, and analysis.
- Develop website and outreach materials, including, but not limited to, newsletter articles, brochures, and posters.
- Conduct outreach activities, such as representing monitoring program at Earth Day and other events and providing presentations to students and other interested groups.

Task 2: Assist with management of Guam's coral reef monitoring database and associated applications (10 %)

- Assist with development and maintenance of database and associated applications for the management and distribution of coral reef monitoring data.

Task 3: Technical Support (10 %)

- Provide technical support to the Guam Coral Reef Initiative Coordinating Committee, Guam Coral Reef Initiative Policy Advisory Committee, and the Guam Governor's Point of Contact to coral reef, fisheries, and ocean matters.
- Participate in the development of the Status of the Coral Reef Ecosystems of Guam Report and related reports.
- Assist Monitoring Program Coordinator with preparation of technical papers for publication.
- Assist the Monitoring Program Coordinator in providing technical advice to the natural resource agency personnel involved in reviewing permit applications for projects with potential impacts to Guam's coral reef resources.
- Assist the Monitoring Coordinator with the field surveys, including those that may require the use of scuba equipment, for the collection of biological and environmental data.
- Assist the Monitoring Coordinator with the review of environmental impact statements, assessments, mitigation and development plans.

Locations of Positions and Supervision:

The Coral Reef Biologist - Technical Support position will be housed at the University of Guam Marine Laboratory and will be under the direct supervision of the Monitoring Program Coordinator.

Monitoring Assistant
Comprehensive Long-term Coral Reef Monitoring Program
Part Time

Task Summary:

These three part-time positions, which are intended for University of Guam Marine Lab graduate students, involve carrying out tasks under the supervision of the Monitoring Program Coordinator in support of Guam's Long-term Coral Reef Monitoring Program. These tasks primarily include coral reef ecosystem data collection, management, and analysis, but also include a limited amount of work assisting the Coordinator with program administration and logistics. These positions will be located at the University of Guam Marine Lab and will require 20 hrs of work per week.

Goals and Objectives:

The primary goals of the updated Guam Coral Reef Monitoring Plan are to:

- Determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers' decision making process and increase the effectiveness of natural resource management on Guam.
- Provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management.
- Provide data to better understand the dynamic nature and condition of the island's coastal ecosystems.
- Allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- Measure progress towards performance goals.

Project Description

Guam's comprehensive long-term coral reef monitoring program continues to be implemented according to an update to the coral reef monitoring strategy originally developed in 2006 by the Guam Coral Reef Monitoring Group (GCRMG). The strategy provides a framework for the regular collection of high quality, statistically-robust data for a number of coral reef ecosystem health parameters, including water quality, benthic habitat, and associated biological community parameters, at several priority reef areas around the island. The updated long-term coral reef monitoring plan for Guam is currently being implemented, with limited data collection occurring in 2009 and more extensive data collection carried out in 2010, 2011, 2012, and 2013. In addition to the primary set of tasks related directly to the long-term monitoring of coral reefs at high priority permanent sites, monitoring program staff also contribute to a limited number of other assessment and monitoring efforts that yield data that can aid in the monitoring and management of coral reef ecosystems within the priority permanent sites.

Task 1: Coral Reef Monitoring Data Collection, Management, and Analysis (70 %)

- Assist with the collection, management, analysis, and presentation of coral reef monitoring data from permanent sites established under the Long-term Coral Reef Monitoring at Permanent Sites on Guam" project (also known as the Guam Long-term Coral Reef Monitoring Program). Data collection involves carrying out underwater surveys using scuba diving equipment. Each monitoring assistant is responsible for at least one type of coral reef survey, but occasionally two or more survey types may be carried out by the same monitoring assistant. Surveys carried out by

monitoring assistants may include benthic photo transects, macroinvertebrate belt transects, the chain-length method for rugosity, quadrat surveys for coral size/health, quadrat surveys for macroalgae diversity and abundance, and stationary point count surveys for reef fish communities. One or more monitoring assistants may also participate in the collection, management and analysis of water quality data.

Task 2: Administrative and logistical support (25 %)

- Assist with the collection, management, analysis and presentation of coral reef ecological data required for assessment and monitoring programs/projects that have goals and objectives closely aligned with those of the Long-term Coral Reef Monitoring Program. Examples of appropriate programs/projects include the University of Guam Marine Lab Reef Flat Monitoring Program, the Guam Community-based Coral Reef Monitoring Program, Rapid Response Team efforts, staghorn mapping and monitoring, and other programs/projects deemed appropriate by the Monitoring Program Coordinator. Participation in these programs/projects provides an opportunity for continued development of skills required for Long-term Coral Reef Monitoring Program tasks and provides capacity to programs/projects that contribute directly or indirectly to our knowledge of reef ecosystems at permanent sites established as part of the Long-term Coral Reef Monitoring Program. Monitoring assistant participation in these programs/projects is secondary to activities required under Task 1.

Task 3: Administrative and logistical support (5 %)

- Provide support to the Monitoring Program Coordinator for administrative and logistical tasks required for the implementation of the Monitoring Program. These tasks may include assistance in obtaining price quotes for needed items and services, picking up and dropping of scuba tanks, driving official vehicles, and related administrative and logistical tasks.

Locations of Positions and Supervision:

The Monitoring Assistants will be housed at the University of Guam Marine Laboratory and will be under the direct supervision of the Monitoring Program Coordinator.

Coral Reef Watershed Coordinator

Task Summary:

To assist with the watershed and Conservation Action Plan (CAP) projects and projects identified in the watershed management plans. The watershed coordinator will support coral reef resilience and other ocean matters impacted by watershed activities and work in collaboration with the Guam Coastal Management Program (GCMP), Department of Agriculture (DoAG), Guam Environmental Protection Agency (GEPA), University of Guam (UOG) Water and Environmental Research Institute (WERI) and U.S. Department of Agriculture (USDA) in coordinating projects in various Guam watersheds. The watershed coordinator will provide assistance improving forest habitat and support for terrestrial activities identified in the Guam Land Based Source of Pollution/Local Action Strategy. The watershed coordinator will also work with the community to involve them in the process of prioritizing and implementing projects as identified in the CAP.

Task Description and Methodology:

The watershed coordinator will be responsible for the coordination and leadership of addressing restoration efforts and implementation of restoration projects in Guam watersheds. The watershed coordinator will also work with business partners, village communities, etc. to relay information, provide technical assistance and facilitate training sessions for Best Management Practices (BMPs) and watershed management tools. The watershed coordinator will work with specific community projects from the Conservation Action Plan for watersheds, such as reforestation, removal of invasive species, and creation of rain gardens, among others in collaboration with Guam's State Historic Preservation Officer. The watershed coordinator will collaborate with WERI on the recommendations for watershed management priorities in Geus to help address issues with sedimentation on land and in near-shore communities.

Task 1: Implementation of watershed activities (80%)

- Coordinate with various stakeholder groups to implement watershed activities listed in Conservation Action and Watershed Management Plans. The coordinator will focus on the two previously-designated coral priority sites, Piti-Asan and Manell-Geus. Current goals listed under the action plans include:
 - Organizing the DAWR Annual Pig Derby which works to reduce the population of invasive pigs while encouraging responsible hunting practices.
 - Organize the Pork in the Park event, which takes meat harvested from the pig derby and uses it in a community-wide cooking contest while allowing an opportunity for public outreach and education.
 - Assist the National Marine Fisheries Service in their Coral Reef Conservation Program, which includes assessing stream water quality and determine sites for pilot conservation projects such as reforestation, soil stabilization, clearing debris from streams, etc.
 - Develop outreach materials designed to teach local communities about best hunting practices that do not use burning vegetation as a way to attract game.

Future projects planned for the Piti-Asan and Manell-Geus watersheds include:

- Working with the Center for Island Sustainability (University of Guam) to create community gardens and encourage sustainable food growing practices.
- Develop a volunteer-run Forest Stewardship Program with Department of Agriculture Forestry and Soil Resources Division.
- In conjunction with USDA Natural Resources Conservation Service, develop targeted outreach materials and strategies for landowners with property in critical watershed areas

to help them make land use decisions that positively impact runoff and sedimentation issues.

- Lead efforts in developing public outreach and education projects as described in the Conservation Action Plan as mentioned above.
- In association with the Guam Nature Alliance (GNA), lead efforts in developing public outreach and education projects listed in the CAP and GNA action strategies:
 - Coordinate and lead trainings for the Guardians of the Reef program, which teaches high school students to give presentations to elementary school students about the important of coral reef and watershed conservation.
 - Develop environmental tours for the community to promote respect for Guam's ecosystems and a desire to protect them.
- Along with the GCMP, help implement and promote the International Coastal Cleanup.
- Work with scientists from WERI to keep abreast of new research and knowledge relating to Guam's watersheds and use it to update Guam LAS, and watershed CAP.
- Coordinate and conduct meetings with village members of Merizo, Piti, and Asan to educate them about current conservation efforts in the watersheds in which they live, and to garner support and volunteer help for those projects.
- Provide outreach materials to local villages by holding meetings and participating in events such as the Merizo Water Festival and Crab Festival.

Task 2: Support coral reef and ocean initiatives (5%)

- Provide coordinating support to the Guam Coral Reef Initiative Coordinating Committee, Guam Coral Reef Initiative Policy Advisory Committee, and the Guam Governor's Point of Contact to coral reef, fisheries, and ocean matters.

Task 3: Support the Grant Administration of the Coral Reef Conservation Grant Program (15%)

- Assist the CRI Coordinator in the programmatic requirements under the FY 2015-2016 CRCP.
- Implement the Public Outreach and Education component under the FY 2015-2016 CRCP.

Task Outcomes and Products:

- Reducing the number of invasive pigs and the prevalence of hunting-induced wildfires will decrease soil erosion and, subsequently, the amount of sediment transported and deposited to Guam's reefs. This in turn will help maintain Guam's reefs as a source of food, tourism, and recreation.
- With increased local awareness, support, and participation in the watershed conservation activities listed above, this assistance will result in a reduction of trash and hazardous material dumping in streams and rivers within the watershed and improved water quality in coastal waters.
- Community-run initiatives such as RARE and Guardians of the Reef will promote a sense of ownership among Guam's youth and educate them about the importance of coral reefs to Guam's economy and culture.
- Developing public outreach and education materials related to terrestrial issues such as native forest, invasive species, and reduction of poor land use practices will allow conservation information to be shared with the general public. This will be accomplished by creating posters, pamphlets and other similar media to be distributed about Guam's watersheds at numerous community activities such as village fiestas, Earth Day events, school presentations, etc.
- Coordinate and lead quarterly meetings for the community and stakeholders to discuss watershed plans.

- Develop of a watershed stewardship group in Merizo.
- Update the CAP and Local Action Strategy in collaboration with GCMP staff and WERI scientists.
- Draft of Guam's Coral Reef Management Priorities for 2015-2020.

Locations of Position and Supervision:

The watershed coordinator position will be housed at the Bureau of Statistics and Plans and will be under the direct supervision of the Senior Planner in the Socio Economic Planning Program as directed by the Director of the Bureau of Statistics and Plans who serves as Guam's Coral Reef Point of Contact.

Coral Reef Initiative Coordinator

Task Summary

The management of Guam's Coral Reef Conservation Grant Projects requires a staff to ensure that proper project reporting and implementation, information requests, and document productions are completed in a timely manner. It will ensure Guam's coral reef management priorities and local action strategy are updated. The Coral Reef Initiative Coordinator position will manage the grants funded by CRCP through the Bureau of Statistics and Plans (BSP), and will oversee a wide range of projects and activities specific to the CRCP and coral reef initiatives. This position will result in better management of CRCP projects as well as improved coordination of multi-agency responses to requests for assistance and review from off-island organizations and research institutions. The CRI Coordinator will ensure timely and professional project implementation and reporting; to collaborate with Guam's Natural Resource Agencies and Guam's NOAA Liaisons; to coordinate the development and update of Guam's local action strategies and Guam coral reef management priorities; and to provide direct support to Guam's Coral Reef Point of Contact that chairs Guam's Coral Reef Initiative Coordinating Committee (CRICC) and Coral Reef Initiative Policy Advisory Council (CRIPAC).

Task Description and Methodology

The Coral Reef Initiative Coordinator's will assist in the implementation and administration of CRCP; coordinate implementation of local action strategies relative to land-based sources of pollution, fisheries and impacts of fishing, impacts of military buildup, impacts of recreational use, and impacts of climate change; assist Guam's Coral Reef Point of Contract at the CRICC meetings; assist Guam's Coral Reef Point of Contract in responding to requests for information on/from Guam, and assist in the coordinate of the activities of the CRCP grant funded staff; prepare quarterly and semi-annual progress reports for the CRCP; and seek project proposals from CRICC agencies and other natural resource agencies for funding based on Guam's Coral Reef Management Priorities and Guam's local action strategies. The proposals will be critically reviewed and funding will be sought for those accepted projects via the NOAA Coral Reef Conservation Grant Program.

The duties and responsibilities of this position include the following:

- Oversee the implementation and administration of Coral Reef Initiatives projects, including advising project managers on grant management, providing support and assistance to researchers, coordinating workshops and training sessions, and managing projects.
- Coordinate implementation of Guam's local action strategies (LAS).
- Organize and facilitate CRICC meetings and presentations.
- Guide and facilitate the assessment and update of Guam's LAS.
- Work closely with LAS Working Group leaders to assist with LAS development and planning.
- Review and provide comments on management plans, and obtain consensus on recommendations from CRICC agencies.
- Assist Guam's Coral Reef Point of Contact response to requests for Guam from the All Islands Committee Secretariat.
- Assist in the supervision of the NOAA CRCP funded positions and the Coral Reef Fellow at BSP.
- Seek project proposals and produce the annual grant applications.

Task Outcomes and Products:

- Update of Guam's Local Action Strategies.
- Draft of Guam's Coral Reef Management Priorities for 2015-2020.

- Compliance with grant requirements.
- Submission of the CRCP annual grant application by due date.

Locations of Position and Supervision:

The coral reef initiative coordinator position will be housed at the Bureau of Statistics and Plans and will be under the direct supervision of the Senior Planner in the Socio Economic Planning Program as directed by the Director of the Bureau of Statistics and Plans who serves as Guam's Coral Reef Point of Contact.

Planner I - Support for Outreach and Education In-kind Match

Task Summary

The Planner I will provide support to the Watershed Coordinator in the implementation of the outreach and education activities defined in this grant, more specifically, the coordination of the logistics for the Guardian of the Reef presentation to the Elementary Schools, the coordination of the bus schedule for the Guam Nature Alliance watershed tours and hikes, assist in setting up outreach and education display at events, take photos of the CRCP and GNA outreach and education events, and assist with creating coral reef education message for outreach materials.

Task Description and Methodology:

The Planner I is a locally funded position. Thirty five percent of the Planner I time will be spent assisting the Watershed Coordinator and the Bureau's staff in the implementation of the Outreach and Education component of the FY 15-16 Coral Reef Conservation Grant Program to include the following:

- Obtain three price quotations at the end of September for the Guardian of the Reef bus transportation that will be used to transport the Guardians to the Elementary School to ensure a purchase order is issued before the Guardian of the Reef training.
- Schedule the Guardian of the Reef presentation at the Elementary School from February to April.
- Obtain three price quotations in mid September for the Guardian of the Reef t-shirt to ensure a purchase order is issued by mid October and the t-shirt are delivered before the Guardian of the Reef training and or before the Guardians go out to the school.
- Obtain three price quotations for the Guam Nature Alliance bus transportation to ensure a purchase order is issued by the end of January and beginning of February.
- Assist in the design of education message for the outreach items, educational pamphlets, and outreach displays.

Task Outcomes and Products:

- Guardians of the Reef t-shirts are order and delivered before the training date.
- Implementation of the Guardians of the Reef training.
- Bus transportation secured for the Guardian of the Reef presentation.
- Guardian of the Reef presentation scheduled with the Elementary School.
- Capture photo of the outreach and education.
- Educational pamphlets disseminated.

Locations of Position and Supervision:

The Planner I is a locally funded position housed at the Bureau of Statistics and Plans and is under the direct supervision of the Planner IV within the Bureau of Statistics Socio Economic Planning Program.

SF424 and SF424 A

**CERTIFICATIONS REGARDING DEBARMENT, SUSPENSION AND OTHER
MATTERS: DRUG FREE WORKPLACE ENVIRONMENT**

PERMITS

MATCH WAIVER REQUEST

NEGOTIATED INDIRECT COST RATE AGREEMENT

DATA AND INFORMATION SHARING PLAN

NEPA QUESTIONS AND RESPONSES

GUARDIAN OF THE REEF SURVEY INSTRUMENT

RESUME AND OR CURRICULUM VITAE