



## **Guam Coral Reef Management Fellowship 2013-2014 Position Description**

### **Project Location**

The host agency for the 2013-2014 Coral Management Fellowship in Guam is with the Guam Coastal Management Program (GCMP). GCMP, located in the GCIC building, is a half mile from its parent agency, the Bureau of Statistics and Plans (BSP), which is within the Governor Ricardo J. Bordallo Governor's Complex in the capital city of Hagatna.

Guam is the southernmost island of the Marianas chain. With a land mass of about 212 square miles and a population estimated to be about 160,000, Guam is the largest island in Micronesia and has a rich cultural legacy and wide range of unique flora and fauna. Fringing coral reefs, mangroves and sea grass beds surround Guam, which relies on clean ocean waters and spectacular beauty to support the tourism industry that is its economic backbone. In coming years, the island will see a rapid population surge as the Department of Defense undergoes a major buildup project to relocate Marines from Okinawa to Guam. This military buildup is the single biggest challenge to effective management of the island's natural resources, as well as a potential economic opportunity for the community.

### **Program/Agency Background**

The mission of GCMP is to manage Guam's coastal resources. Through extensive partnerships with local and federal agencies, nonprofit groups and the community, GCMP strives to protect, conserve and enhance the environment by balancing economic development and sustainable use of coastal and coral reef resources. All of Guam's land mass is within its coastal zone, and activities on land have major impacts on the surrounding coral reef system that is home to more than 400 species of coral, nearly 1,000 fish species, and a vast array of other organisms. The coral management fellow will be an integral part of the dedicated team that works on coral management within the guidelines specified by GCMP.

The people of Guam depend on the island's surrounding coral reefs and marine waters for food, recreation, income and protection from storms. In addition, the community has significant cultural and traditional ties to the marine ecosystem. Yet these vital resources are highly vulnerable to natural and anthropogenic threats. Guam's local, federal and community partners seek to address these threats through Local Action Strategies and a series of priorities, including six focus areas: land-based sources of pollution, fisheries management, public outreach and education, recreational misuse and overuse, climate change and coral bleaching, and increasing development. These priorities also reflect the strategy of Guam's participation in the Micronesia Challenge (MC), a regional commitment of island states to effectively conserve 20 percent of terrestrial and 30 percent of nearshore resources by 2020.

### **Project Goals and Objectives**

The goals of this fellowship project are the following:

1. To assist in the implementation of Guam's long-term coral reef monitoring plan, which seeks to inform coral reef management by providing high quality, statistically robust data to show trends in coral community health and to discern possible causes of these trends.

2. To assist in the development of management actions to reduce impacts of development, heavy extraction pressure, and other threats to Guam's coral reef resources.
3. To assist in the development of public outreach material, including "translation" of scientific information into layman's terms. Products may be used in outreach programs, for community presentations, and other purposes.
4. To provide management assistance to Guam's coral reef management program, including coordination with local and federal partners, support for local action strategies, and support for projects.

## **Project Description**

As a participating member of the GCMP staff, the fellow will network with partner organizations and agencies to complete this multifaceted project. Some of these tasks will be accomplished concurrently. The fellowship starts January 2013 and will end January 2014.

### **Task 1: Orientation (2 months)**

The fellow will be introduced to staff and management of GCMP and partner agencies, and will review background information regarding Guam's coral reef initiative and other coastal management issues. The fellow will also participate with program staff members in field visits, interagency meetings and outreach activities. After participating in these activities, the fellow, with input from the mentor, will write a project work plan that will be reviewed and revised after the first year of the fellowship.

#### **Outcomes/Deliverables:**

- Familiarity with staff, operations and resources of island coastal and aquatic resource management programs
- Integration into GCMP and clarification of role in monitoring program and other projects
- Development of a project work plan for the fellowship cycle
- Familiarity of Guam Comprehensive Coral Reef Monitoring Strategy
- Familiarity with Guam Local Action Strategy and Priorities
- Familiarity with Guam's Micronesia Challenge Strategy

### **Task 2: Coral Reef Monitoring Data Collection (50 percent)**

Guam is undergoing rapid changes and a major population increase within a short time span. While monitoring the health of the island's reef system has always been important, the changes associated with major military projects and accompanying civilian development are driving the need for additional monitoring and a clearer understanding of the trends in natural resource conditions on and around the island. The fellow will work closely with the monitoring team to collect and analyze data from reef systems around the island, and to use this information to suggest possible management actions, policies or draft regulations to reduce impacts on coral reef resources. With the limited staff, the fellow will also be required to assist with administrative task such as procurement of necessary equipment, supplies, and services prior to beginning of monitoring field season.

#### **Outcomes/Deliverables**

- Successful collection of high quality data using one or more underwater survey techniques
- Regular maintenance of multiparameter datasonde installed at high priority monitoring sites
- Assist with data entry and data quality analysis/quality control procedure

- Successful completion of data entry and quality analysis/quality control
- Assist with database used to store monitoring datasets, including data migration, data entry, quality control, and data query
- Assist with the analysis of multiple datasets
- Assist in updating existing monitoring protocols and in the development of new protocols when necessary

**Task 3: Coral Reef management implications, recommendations and regulation (20 percent)**

The fellow will assist with review of draft legislation and development of rules and regulations associated with natural resource protection. In addition to providing data to support potential legislation or regulation, the fellow may assist in drafting appropriate policy or regulation for coral reef and marine resource conservation. The fellow will also assist in the review of NEPA documents, federal consistency determinations, and other environmental documents pertaining to Guam's coral reef resources.

The fellow will assist the monitoring coordinator in the coordination and work of the marine resources subcommittee. This subcommittee reviews impacts from increased development on marine resources related to the military buildup. Close monitoring of impacts to the island's natural resources are critical to minimizing damages to natural resources, and to work with federal partners in the Adaptive Program Management framework proposed by the Department of Defense during the buildup process.

**Outcomes/Deliverables**

- Assistance in developing reports required by grantor
- Assistance with review of draft legislation, development of policy, rules and regulations related to coral reef protection
- Assist with the review of NEPA documents (e.g., EISs, EAs, FONSIIs), federal consistency determinations, and associated reports
- Assist in providing data requested by management and policy makers in support of existing or proposed laws and policies that support coral reef protection.
- Assist in providing data related to the Adaptive Program Management, and proposed policy related to the Guam military build up

**Task 4: Public Outreach Support (20 percent)**

GCMP has a number of existing outreach mechanisms including publications, public events and a successful program for high school students to conduct reef presentations in public elementary schools. The office staff regularly participates in these activities and the fellow will assist with the outreach programs as appropriate. In particular, the fellow will use data from the monitoring program to provide information and support for outreach materials, with a focus on making this information accessible and meaningful to general audiences.

The fellow will assist the NOAA community monitoring coordinator, the NOAA Pacific Islands Regional Office coral reef ecologist for Guam, and the monitoring coordinator in working with community members to develop and maintain an active community-based coral reef monitoring program. The fellow will assist in providing training on appropriate coral reef survey methods to

the community monitoring coordinator as well as to community members participating in the program, and will assist in data collection and analysis efforts when needed. The fellow will also assist in the development and maintenance of a monitoring program website, which will serve as a portal for managers, researchers, teachers, students, and others interested in learning about the program's goals and methods as well as for the distribution of raw datasets and derived products, reports, and other information.

**Outcomes/Deliverables**

- Development of multiple articles for the Man, Land, and Sea newsletter and other appropriate print and online publications
- Development and maintenance of monitoring program section of BSP website or the development of a separate website
- Development of outreach materials, including posters, brochures, and other materials
- Participation in public events attended by GCMP
- Presentations to students from various age groups
- Assistance with community-based monitoring activities

**Task 5: Management Assistance and Support (10 percent)**

Guam's natural resource agencies work closely with each other and a range of federal partners to address threats to coral reefs. This network undertakes a variety of projects, ranging from outreach programs and policy development to on-the-ground projects to reduce sedimentation in priority areas. The fellow will work with the partners to provide technical assistance, implementation support, and coordination for these efforts as required.

**Outcomes/ Deliverables**

- Participation in network groups such as the Natural Resource Subcommittee and Guam Environmental Education Committee
- Coordination of meetings or events as required by partners
- Coordination with resource partners on NOAA CRCP activities in the region
- Support for Local Action Strategy projects and initiatives