

A. Grant Number: NA09NOS4260097

B. Amount of Grant: \$100,872.00

C. Project Title: FY09 Coral Reef Ecosystem Monitoring in the Federated States of Micronesia

D. Grantee: Micronesia Conservation Trust

E. Award Period: 10/01/2009 - 09/30/2010

F. Period Covered by this Report: 10/01/2009 - 09/30/2010

G. Summary of Progress and Expenditures to Date:

1. Work Accomplishments:

All four grantee projects funded under this grant have completed all the objectives as stated in the contracts. All four projects have ordered and purchased their equipment needs and all activities were carried out successfully. The grantees all have submitted reimbursement requests and showed justification of all expenses during the project period. MCT was only able to obtain analyzed data from Kosrae and Pohnpei. Chuuk and Yap only have raw data available which remains to be inputted into their databases due to limited number of staff. While this is the case, overall, with advice from Dr. Peter Houk of the Pacific Marine Research Institute, all four monitoring teams are now collecting more relevant data that will answer important management questions and have all begun to enter it into their programs' databases. Dr. Houk's previous assessment of the monitoring and data management capacity of the FSM coral reef monitoring teams revealed that data was haphazardly stored and poorly organized. In response to this, he conducted a week-long session for the FSM monitoring teams on data analysis in Saipan in September to improve data entry and data management capacity. In addition to the other improvements made during this session, project implementers agreed on a single database format to be used by each of the FSM state programs. While collection and analysis capacity have increased, these are new skills on which the monitoring teams continue to build.

Project: *Coral and Fish Monitoring in the State of Kosrae, FSM*

PI: Andy George

Organization: Kosrae Conservation and Safety Organization (KCSO)

Project Objectives: The proposed project will consolidate efforts of the Marine Resource Division of the State Government and KCSO to monitor and assess changes in coral covers over time as well as health and population of corals and fish in 9 permanent monitoring sites in Kosrae.

Objectives

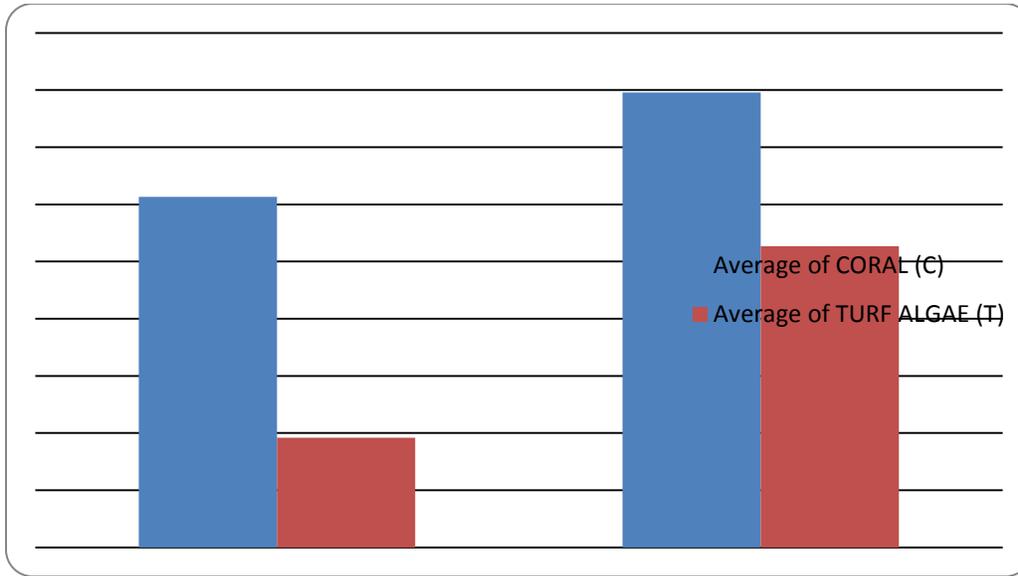
- 2.1 Assess and monitor marine biodiversity (corals, fish: food fish and aquarium fish, coral recruits, and inverts) at the 9 sites in Kosrae annually.
- 2.2 Use results of assessment to identify the stresses and the threats that are, or may in the future adversely affect marine resources.
- 2.3 Provide advice to policy makers and regulatory agencies of the government for implementation of appropriate policies and regulations to address stresses and threats on marine resources.

Project Summary from 10/01/2009 to 09/30/2010:

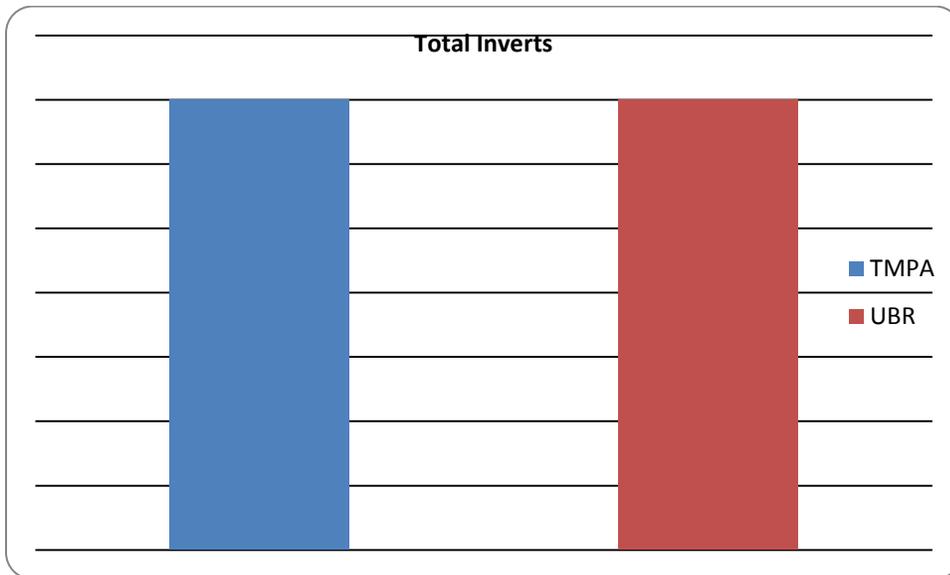
The 2009 coral and fish monitoring project in the state of Kosrae was an ongoing collaborative effort among the Kosrae Island Resource Management Authority (KIRMA), Fisheries Resources Division of the State Government, and the Kosrae Conservation and Safety Organization (KCSO). During this grant period, the Kosrae Village Resort (KVR) also remained actively involved in planning and implementing the project activities as well. Community leaders and local volunteers were also active in participating during data collection. In addition, KCSO also received technical assistance abroad from Conservation Society of Pohnpei and Pacific Marine Resource Institute (PMRI).

The monitoring team conducted the fish monitoring using the Belt Transect Method and benthic monitoring was conducted using the Photo Quadrant Method. The Photo Quadrant Method is the new tool modified by Dr. Peter Houk, PMRI and provides data on species per unit area, benthic ratios and coral cover. Genus level is usually recorded, however species level is recorded for dominant benthic abundances. For fish and inverts they used the Belt Transect Method consisting of 5 transects 5m wide x 5m tall by 5m long. The divers record all the species found between two lines and how far they are for a certain place or area and how many of them there are. This method produces the following indicators, density, species, size and biomass, which will be used to compare effectiveness of MPAs. This newly tested protocol has been selected as the standard coral reef monitoring protocol to test the effectiveness of the Micronesia Challenge.

Site Name	Coordinates		Number of Visits	Visit Dates
	X	y		
Tafunsak Marine Protected Area (TMPA)			6	10/13/2009 1/19/2010 4/16/2010 6/10/2010 7/27/2010 9/24/2010
Utwe Biosphere Reserve (UBR)			6	10/15/2010 1/13/2010 4/15/2010 6/11/2010 7/28/2010 9/23/2010



This graph shows the amount of coral cover and Turf Algae found at the two monitoring sites in Kosrae.



This graph shows the number total number of Invertebrates found in the Tafunsak Marine Protected Area and the Utwe Biosphere Reserve.

Project: Coral and Fish Monitoring in the State of Pohnpei, FSM

PI: Eugene Joseph

Organization: Conservation Society of Pohnpei (CSP)

Project Objective: The proposed project will consolidate efforts of the Marine Resource Division of the State Government and CSP to monitor and assess changes in coral covers over time as well as health and population of corals and fish in all five established monitoring sites in Pohnpei.

Objectives

- 1.1 Purchase materials
- 1.2 Carry out monitoring activities
- 1.3 Analyze and present data to stakeholders
- 1.4 Prepare mid-term performance report

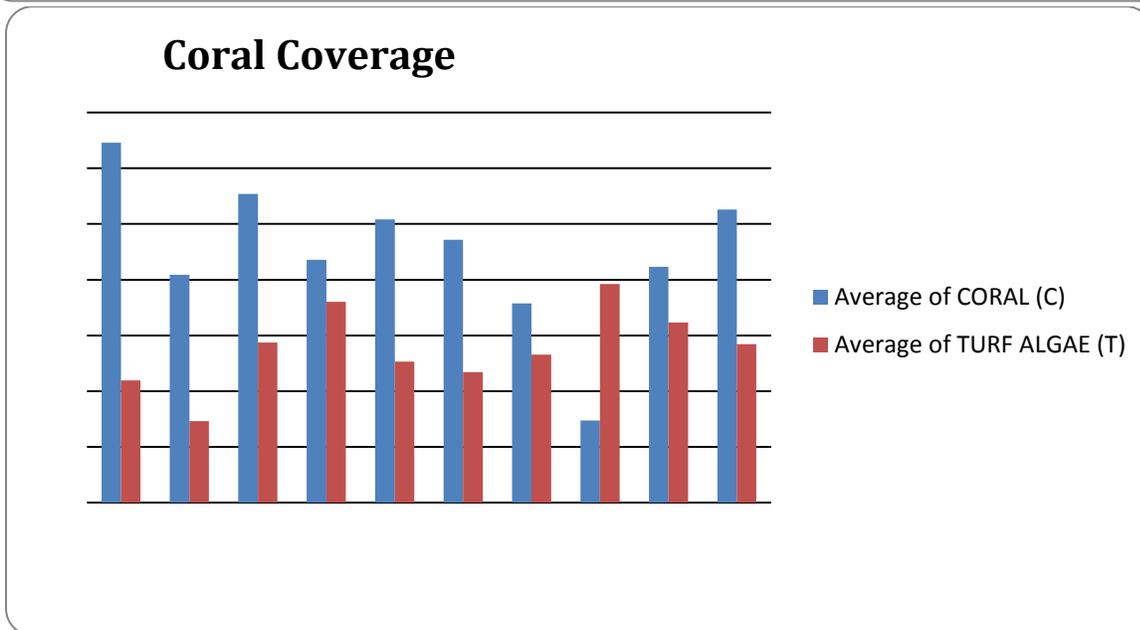
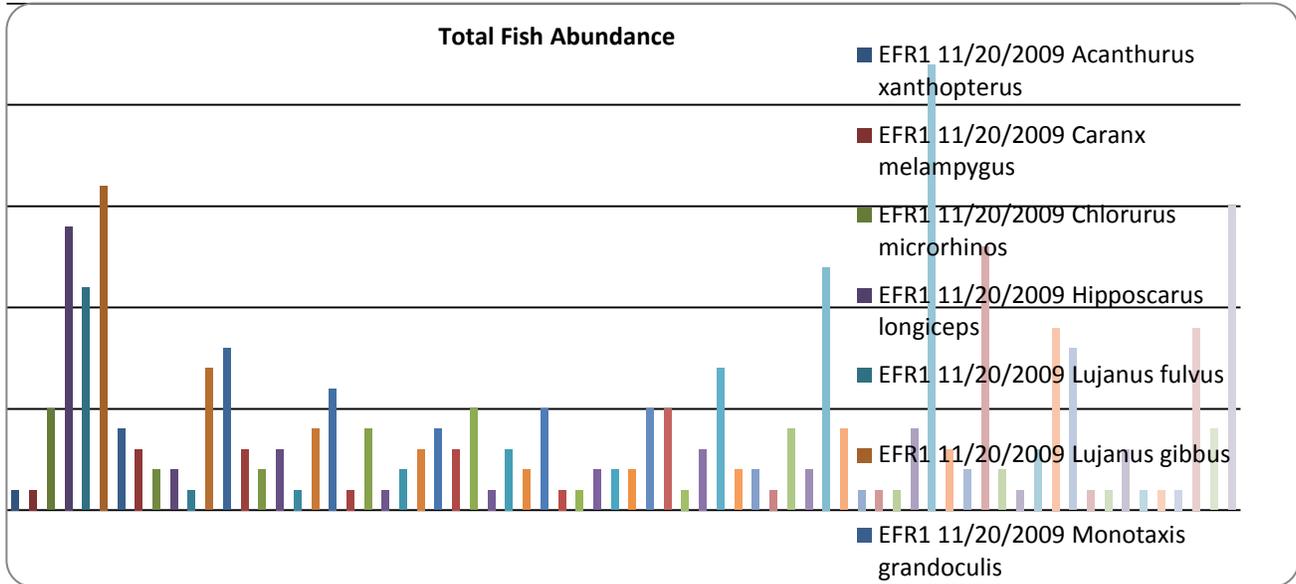
Project Summary from 10/01/2009 to 09/30/2010:

The monitoring team has successfully completed the 2009-2010 coral reef monitoring program using a modified protocol. This method provides data on species per unit area, benthic ratios and coral cover. Genus level is usually recorded, however species level is recorded for dominant benthic abundances. For fish and inverts they used the Belt Transect Method consisting of 5 transects 5m wide x 5m tall by 5m long. The divers record all the species found between two lines and how far they are for a certain place or area and how many of them there are. This method produces the following indicators, density, species, size and biomass, which will be used to compare effectiveness of MPAs. This newly tested protocol has been selected as the standard coral reef monitoring protocol to test the effectiveness of the Micronesia Challenge. The Pohnpei monitoring team is, by far, the leading team in Micronesia in testing this protocol. Data has been collected and the team is conducting data analysis. The team will be working with the experts on the particular protocol to draft a technical report for Pohnpei that will also contribute to the Status of the Reef for 2011. Data was entered and is undergoing analysis with technical assistance from PMRI, PICRC and UOG.

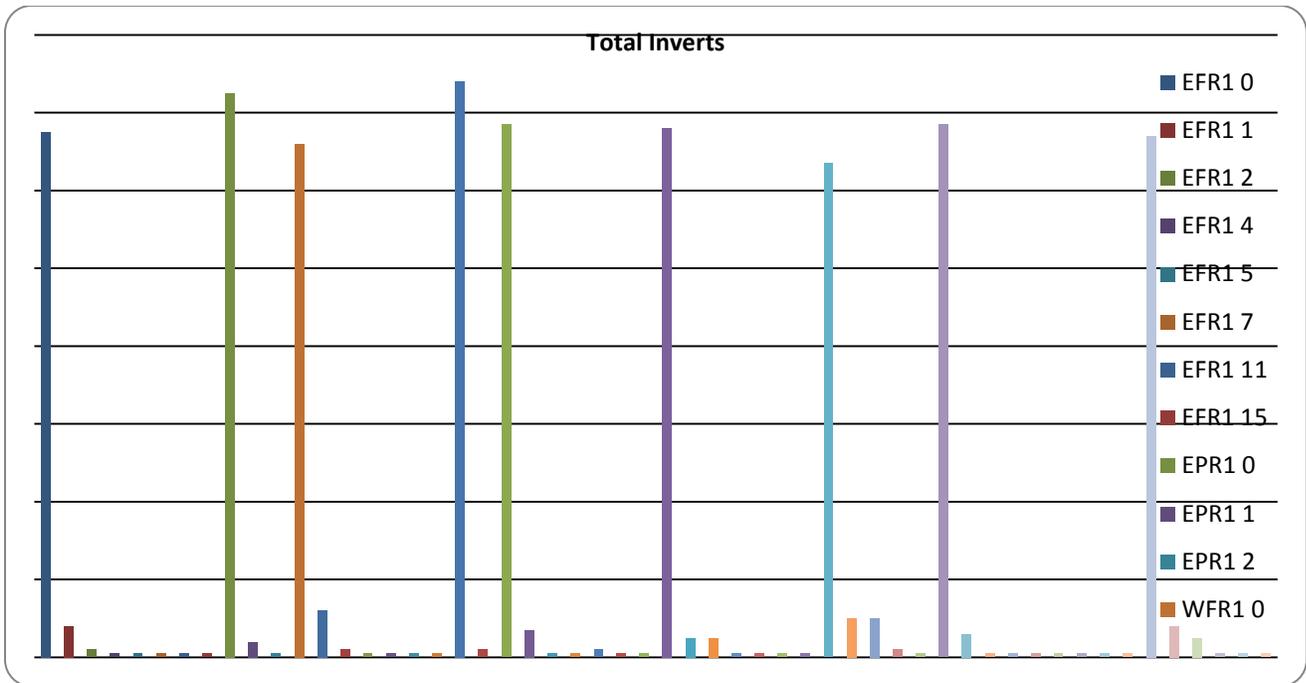
Another component of this project was sedimentation collection. Sediment traps were deployed at the Dausokole Estuary and the team collects them every quarter. The Dausokole Estuary is located at the mouth of the Nanipil River, one of the major rivers in Pohnpei.

Site Name	Coordinates		Number of Visits	Visit Dates
	X	y		
Eastern Fringing Reef 1 (EFR1)			1	11/20/2009
Eastern Pqtch Reef 1 (EPR1)			1	10/21/2009
Western Fringing Reef 1 (WFR1)			1	1/21/2010
Western Fringing Reef 2 (WFR2)			1	2/02/2010
Western Inner Barrier 1 (WIB1)			1	1/22/2010
Western Inner Barrier 2 (WIB2)			1	3/09/2010
Western Outer Barrier 1 (WOB1)			1	3/09/2010
Western Patch Reef 1 (WPR1)			1	1/21/2010
Western Patch Reef 2 (WPR2)			1	2/02/2010

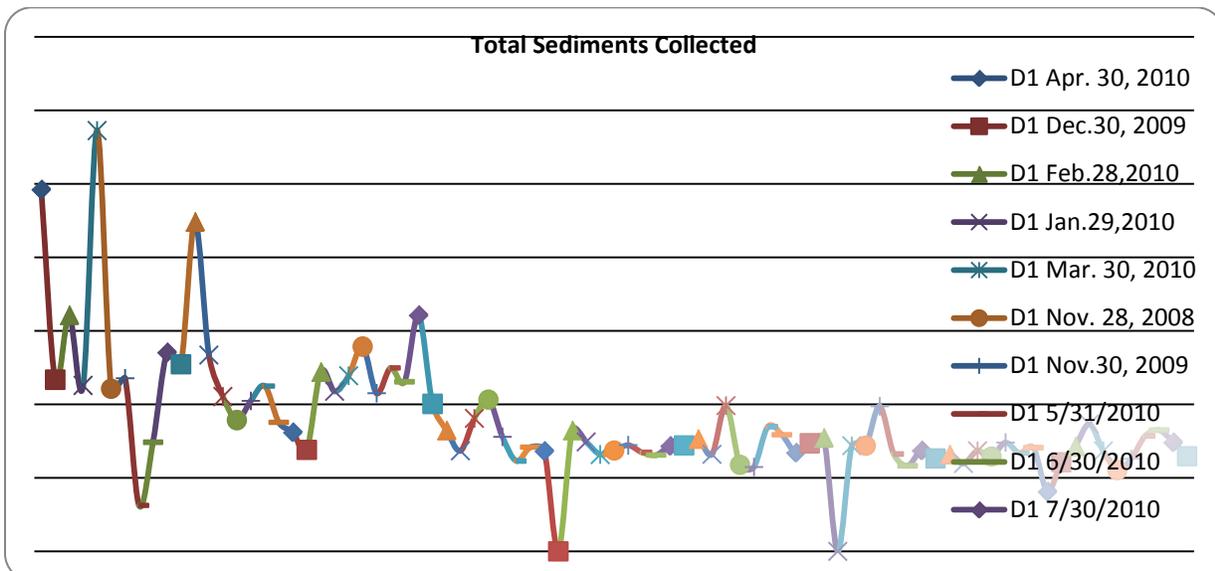
This graph shows the total fish abundance in the monitoring site in Pohnpei.



This graph shows the average of coral cover and turf algae



This graph shows the number of inverts collected in 2010.



This graph shows the amount of sediments collected at the mouth of the Dausokelel Estuary.

Project: *Coral and fish monitoring in the State of Chuuk, FSM*

PI: Curtis Graham

Organization: Chuuk Conservation Society (CCS)

Project Objective: The proposed project will consolidate efforts of the Marine Resource Division of the State Government and CCS to monitor and assess changes in coral covers over time as well as health and population of corals and fish in all established monitoring sites in Chuuk.

Objectives

1.5 Purchase materials and supplies

1.6 Hold trainings

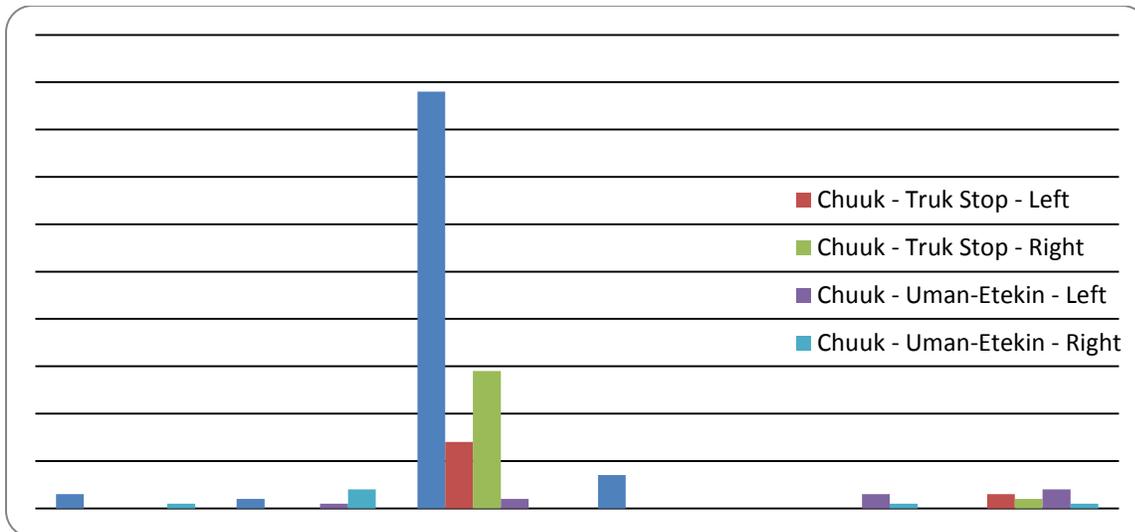
1.7 Set up monitoring sites

Project Summary from 10/01/2009 to 09/30/2010:

In 2009, the Chuuk Conservation Society (CCS) was awarded the amount of \$17,589.00 in support of Chuuk's Coral Reef Monitoring Program. The Chuuk Coral Reef Monitoring Program is a collaborative program between the Chuuk Conservation Society and the Chuuk Department of Marine Resources dedicated to understanding general health, diversity and size class distributions of fish, invertebrates and corals within the Chuuk Lagoon. Monitoring protocols developed with the help of Dr. Peter Houk from the Pacific Marine Resources Institute (PMRI) have been incorporated to collect data on 15 key sites throughout the Chuuk Lagoon. Following subsequent discussions between the Department of Marine Resources, PMRI, CCS and input from key community members, a list of monitoring sites was compiled that could as closely as possible, provide an adequate picture of what is happening on specific reefs throughout the Chuuk Lagoon. From these surveys, the monitoring program can have a better idea of what is happening throughout the entire lagoon and can thus make informed decisions based on this information.

As of the reporting date, CCS was only able to provide their invertebrates data as they are still in the process of inputting data into database and this was due to the limited number of staffing under CCS's environmental program. Benthic and fish data are still being inputted into their database. All raw data are now in place waiting for data entry and will proceed to analysis once data entry is complete.

Site Name	Coordinates		Number of Visits	Visit Dates
	X	y		
Truk Stop			1	5/13/2010
Uman Etekin			1	6/10/2010



This graph shows the total number of invertebrates surveyed during a monitoring at two sites in Chuuk.

Project: Coral and fish monitoring in the State of Yap, FSM

PI: Charles Chieng

Organization: Yap Community Action Program (YapCAP)

Project Objective: The proposed project will consolidate efforts of the Marine Resource Division of the State Government and CCS to monitor and assess changes in coral covers over time as well as health and population of corals and fish in all established monitoring sites in Yap based on the results of the Rapid Ecological Assessment (REA).

Objectives

1.8 Ecosystem Monitoring

1.8.1 Site Selection

- 1.8.1.1 Meet with relevant communities
- 1.8.1.2 Meet with Yap ESC
- 1.8.1.3 PICRIC Staff visit Yap
- 1.8.1.4 Identify 4 additional monitoring sites

1.8.2 Ecosystem monitoring

- 1.8.2.1 Purchase materials and supplies
- 1.8.2.2 Workshops with monitoring team to go over methods and data
- 1.8.2.3 Ecosystem monitoring fieldwork (Coral Reef Survey)

1.9 Data Analysis and Sharing of Information

1.9.1 Interagency and Stakeholder Collaboration

- 1.9.1.1 Meetings with local communities
- 1.9.1.2 Meetings with ESC and other government agencies/bodies
- 1.9.1.3 Meetings of coral reef task force

Project Summary from 10/01/2009 to 09/30/2010:

The Yap Coral Reef Monitoring Team now consists of 14 members, which is a combination of Yap CAP and Community Representatives. All existing sites (8) (Nimpal Channel, Gachuug Channel, Reey Marine Conservation Area, Gael Outer Reef, Peelaek Channel, Gabach, Channel, Goofnuw Channel, and Miil Channel) including 2 new sites (Atliw Channel and Fanif (Gilfith) Outer Reef) have had surveys completed. The parameters collected included fish counts, macro-invertebrates, quadrat photos (for benthic composition), and coral population data. Data is currently being inputted into YapCAP's database. Analyses and composition of a report will be produced with the assistance of Dr. Peter Houk.

Although the Yap monitoring team surveyed all of the monitoring sites and has a large volume of data in place waiting to be entered into their database, as of the reporting date, data entry is still not complete due to the limited number of personnel in the environment program. YapCAP's Executive Director and the driving force of its Environment Program, Charles Chieng, passed away in July, causing interruption in the work and severe delays in reporting. In addition, Vanessa Fread, YapCAP's Environmental Program Manager was out of the office tending to her mother before and after her passing, which coincided with the time set aside to input data and compile YapCAP's report to MCT. If necessary we can forward these results once she returns to her office.