

January – June 2004 Progress Report:
NOAA International Coral Reef Conservation, Fiscal Year (FY) 2003
Promote the Use of Socio-Economic Assessments in Marine Protected Areas

“Urban” Marine Protected Areas of Mactan and Olango Islands, Cebu, Philippines
NOAA Award No. NAO3NOS4630024 to
Coastal Dynamics Foundation, Inc., Cebu, Philippines
(Funded Project Period: January 1, 2003 – June 30, 2004)

1. PROJECT SUMMARY: The project will serve to expand the experience gained to date in designing, establishing and effectively co-managing “urban” marine protected areas (MPAs) in the Philippines. The project will focus on the coastal communities and reef areas within the City of Lapu Lapu (Cebu, Philippines) where MPAs are established or proposed.

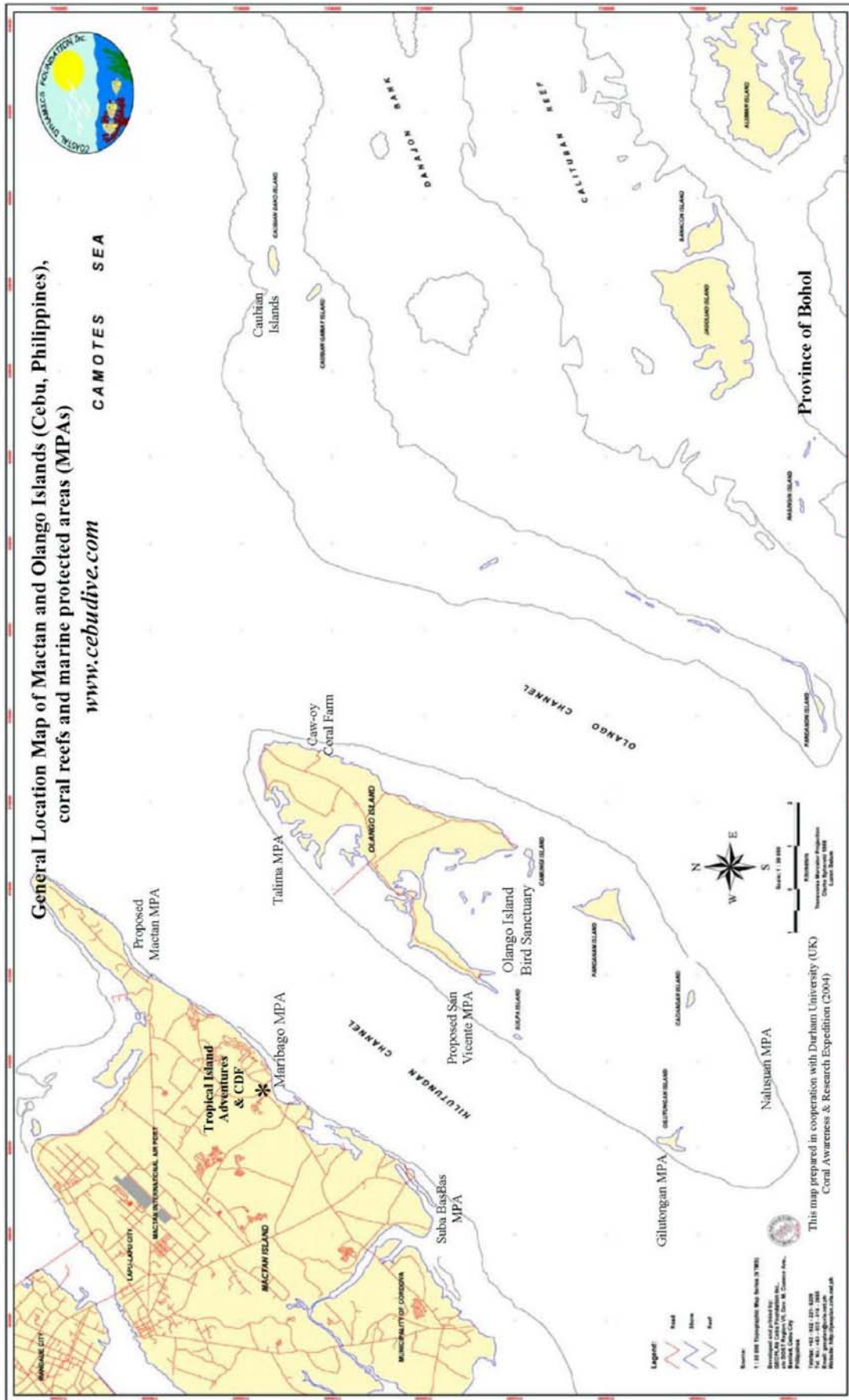
These areas will involve the first MPAs within the project area of Mactan and Olango Islands, located within the City of Lapu Lapu, one of the country’s premiere coastal tourism and diving destinations. This project area may include some of the most accessible, high diversity coral reefs in the world. Due to their accessibility and tourism values, these threatened reef areas offer significant potential for concurrent environmental and socio-economic benefits with improved management.

Complimenting participatory Reef Check surveys of bio-physical conditions, socio-economic assessments will play a key role in the success of this pilot project and planned replication. The project will further test and apply appropriate reef survey, socio-economic assessment and MPA planning approaches to strengthen local reef management and monitoring capabilities and benefits.

The City of Lapu Lapu includes within its’ jurisdiction an estimated 500 hectares (ha) of prime reef habitat, which are characterized by sheer drop-off walls and reef flats. In addition, it includes more extensive areas of reef slopes, seagrass beds and mangroves as well as the 920 ha Olango Island Wildlife Sanctuary (the first and one of the country’s only four RAMSAR sites, which recognizes it as a wetland area of global significance) and key portions of the Danajon Reef, which is described as one of the few “double barrier reef” formations in the world.

2. SUMMARY OF EXPECTED OUTPUTS: The project will serve to support Reef Check and socio-economic assessment and monitoring (SocMon) surveys and trainings for integration of socio-economic assessments (SocMon) into Reef Check methods. An estimated 5,000 local community residents, fisherfolk, coastal tourism and dive industry staff as well as some 50,000 visiting divers and snorkelers per year are expected to benefit from this highly visible project.

The bio-physical quality of the established and enforced MPAs are expected to improve, as measured by increases in live coral cover and abundance and size of “target” fish species. Concurrently, the economic benefits of the established MPAs are expected to be realized by the local communities and key stakeholders following the establishment of MPA user fees.





3. SUMMARY OF PROGRESS DURING REPORTING PERIOD: Based on the original project proposal and actual awarded budget, the following sections summarize progress of the NOAA-funded project during the third and final 6-month reporting period (January – June 2004). In addition to the current NOAA grant, funding support for project-related activities during this reporting period was con-currently provided to the Coastal Dynamics Foundation (CDF) by the following external agencies and organizations:

- International Coral Reef Initiative (ICRI) / U.K. Department of Environment, Food and Rural Affairs (DEFRA) for a small grant funded project entitled: “Demonstrating Effective Monitoring and Management of “Urban” Marine Protected Areas (MPAs) within Lapu Lapu City, (Cebu, Philippines)”
- Durham University (U.K.) Coral Awareness and Research Expedition 2004 (DU-CARE 2004) with supporting funding from the Durham University Sub Committee for Expeditions, Royal Geographical Society in association with Rio Tinto Plc, Albert Reckitts Trust, Chester Zoo and PADI Project Aware
- Local private sector partners, particularly the Shangri-La Mactan Island Resort which hosted a two-day workshop and field training program in cooperation with local dive operators, the City of Lapu Lapu and national government agencies.

3.1 Survey and Assessment of Proposed MPAs: The primary focus of the project-assisted Reef Check surveys and socio-economic assessments are the proposed and/or established MPA areas within the City of Lapu Lapu, which has formally adopted the project approach as reflected in the following standardized process for establishing MPAs in the City supported by significant increases in approved City government budget allocations for directly related activities for 2004. A current summary status of these surveys and directly related MPA establishment activities is provided on the following page.

Republic of the Philippines
City of Lapu-Lapu
OFFICE OF THE CITY AGRICULTURIST

**MARINE PROTECTED AREA (MPA) ESTABLISHMENT:
STANDARDIZED PROCEDURES ADOPTED FOR LAPU-LAPU CITY**

Steps:

1. Join with barangay officials during their regular/special session and conduct initial briefing about benefits of establishing a marine protected area in their barangay;
2. Conduct socio-economic monitoring survey (SocMon) among the constituents;
3. Conduct underwater resource assessment (Reef Check) of the reef areas fronting the barangay which may be simultaneous with SocMon;
4. Delineation of MPA boundaries / mapping preferably with the use of GPS;
5. Presentation of results of Nos. 2, 3, and 4 above, to the Barangay Council;
6. Conduct public consultation on the proposed establishment of marine protected area (MPA) in the waters fronting the barangay;
 - Presentation of results of Nos. 2, 3, and 4 above to the public;
 - Testimonies of old fisher folks on past conditions of their coastal area;
 - Questions and answers;
 - Show of hands (in favor / not in favor of establishing an MPA);
7. If the public is in favor of establishing an MPA, the barangay has to adopt a resolution requesting the City to promulgate an ordinance establishing an MPA in their area;
8. Promulgation of City Ordinance establishing a marine protected area in the barangay;
9. Implementation and creation of MPA Management Board;
10. Regular MPA monitoring and evaluation (Reef Check, SocMon & other activities)

**Summary Status of Establishing Marine Protected Areas (MPAs)
in Lapu Lapu City, Cebu, Philippines
(as of June 2004)**

	Barangays with Significant Coral Reefs	Formally Requests City to Establish an MPA	Reef Check Surveys	SocMon Surveys	MPA Public Hearings	MPA Established by City Ordinance	MPA Buoys Established	MPA Enforced / Managed
1	Agus		√					
2	Baring	√	√	√	√	√ (2004)	√	√
3	Caubian	√	√					
4	Caw-oy	√		√				
5	Kawhagan	√						
6	Mactan	√	√ (4 sites)	√	√	√ (2004)	√	
7	Maribago	√	√ (6 sites)	√	√	√ (2001)	√	
8	Marigondon		√ (4 sites)	√			√	
9	Pangang-an	√						
10	Punta Engano							
11	Sabang	√		√				
12	Santa Rosa			√				
13	San Vicente	√	√ (2 sites)	√	√			
14	Suba Bas-Bas	√	√	√	√	√ (2003)	√	√
15	Talima	√	√ (3 sites)	√	√	√ (2003)	√	√
16	Tungasan			√				
17	Tingo	√	√	√				

Reef Check Surveys: Reef Check trainings and participatory surveys were organized and completed for 42 sites to date in 2004, with all data results submitted to the global Reef Check database (www.reefcheck.org) and shared with local partners and universities.

In addition to all targeted MPA areas within the City of Lapu-Lapu, comparative Reef Check surveys were conducted in the following areas:

- Nearby Gilutongan Marine Sanctuary, in the adjacent Municipality of Cordova
- Bantayaan, Capitancello and Malapascua Islands of Northern Cebu province
- Kalanggaman Island of Leyte province

These surveys were conducted by volunteer teams of trained community members, local divers and volunteers, supported by qualified marine scientists from CDF, participating Philippine government agencies, Durham University (U.K.) and local universities.

The average Reef Check survey team consisted of 4 volunteer divers, a team leader and a lead marine scientist. A key source of funding and volunteer support for these Reef Check surveys was provided by the DU-CARE 2004 Expedition.

Socio-Economic Assessment and Monitoring (SocMon) Surveys: SocMon activities summarized in the proceeding Table were conducted in the local dialect through and in close coordination with staff members of the City of Lapu Lapu's Department of Agriculture / City Agriculturalist Office (DA / CAO; the City agency responsible for fisheries and coastal management) and local community members (particularly local school teachers).

Through the full support of the City, local communities and schools, SocMon MPA perception surveys were conducted or in progress for all 17 coastal barangays (communities), with a target of 100 % participation of all residences. These extensive SocMon survey results are currently being compiled and summarized. This project experience was summarized in a NOAA-supported survey conducted by Leah Bunce, a completed copy of which is attached. Based on this survey, the project area of Lapu Lapu City is being proposed by NOAA and its partners as one of the four global SocMon demonstration sites

Concurrently, daily "reef watch" monitoring was maintained by the project-supported community members watching and helping to enforce the 15 hectare Talima MPA on Olango Island. Information recorded on a 24 hours a day, 7 days a week basis include the number and origin of users and type of use within the established MPA.

3.2 Training: The project will support several types of related MPA training, including:

- Reef Check surveys and data analysis – completed baseline surveys and trained teams for all currently targeted MPA sites within the City;
- Socio-economic assessment and resource valuation – completed development and testing with adoption by the City's DA / CAO;
- Snorkeling and scuba diving training – conducted as needed to support participation of community members and project volunteers;
- MPA planning and management – supported planning, public hearings and GPS delineation and mapping of proposed MPAs in the communities (barangays) of Talima, Suba Basbas, Mactan, Agus and Sabang, with requested support to the previously established Maribago MPA.

Key training activities during the reporting period involved the organization and conduct of a two-day workshop and field training program for a total of 27 participants, a summary of which is provided on the following page. During the training workshops, orientations on SocMon were provided as well as copies of all methods, related documents, studies, and ordinances to participants to support their overall understanding and involvement in reef conservation and management approaches.

Key sources of funding support for this 2-day training were the Shangri-La Mactan Island Resort, DU-CARE 2004 Expedition, local dive operators, the City of Lapu Lapu, national government agencies and CDF's on-going ICRI small grant program. In addition to training, CDF provided requested resources (Reef Check / SocMon surveys, GPS mapping, public hearings and mooring / MPA boundary buoy placement, small patrol boats) to support the initiation and enforcement of MPAs in Lapu Lapu City.

Unique “Partnership” Approach to Reef Check Training in Cebu, Philippines

By Mike & Nora Ross, Coastal Dynamics Foundation (CDF; www.cebudive.com) and Andrew Lawton, Durham University (UK) Coral Awareness & Research Expedition 2004 (DU-CARE 2004).

As a “kick-off” event of the two-month long Durham University (U.K.) Coral Awareness and Research Expedition (DU-CARE), a two-day reef assessment training course focusing on Reef Check and SocMon was held from July 9 – 10, 2004 on Mactan Island, Cebu, Philippines.



In addition to the eight DU-CARE volunteers, this innovative, partnership training involved the nine “Green Team” divers of the Shangri-La Mactan Island Resort, which graciously hosted the event and is also the site of the next proposed marine protected area (MPA) on Mactan Island, which has been monitored for the last 3 years through the Reef Check program coordinated by Nora & Mike Ross and CDF.

A total of 27 participants and training staff, all volunteers, joined in this training event, which was partly supported by small grant funding to CDF provided by the U.K. Government (DFID) through the International Coral Reef Initiative (ICRI) and the U.S. National Oceanic and Atmospheric Administration (NOAA), as well as supporting funding provided to DU-CARE by the volunteer participants, the Durham University Expedition Society, the Royal Geographic Society and PADI Project Aware.

In addition to CDF, key speakers and staff included representatives’ form the City of Lapu Lapu, the Cebu Jaycees, the Philippines’ Bureau of Fisheries and Aquatic Resources and Geoplan Foundation of the Philippine’s Department of Science and Technology. A special thanks is extended to Tropical Island Adventures and Scotty’s Dive Center for their full support.

Following their training, the DU-CARE expedition lead by CDF scientists and staff, headed offshore to complete the first Reef Check and SocMon surveys of the remote Caubian Islands and adjacent areas of the unique Danajon Double Barrier Reef, followed by a busy schedule of surveys of even more remote island in the northern part of Cebu province and western parts of Leyte province..

Sources: Reef Check’s “The Transect Line” Newsletter and www.cebudive.com

3.3 Capacity Building: The project is designed to help build the local capacity to better assess, manage and monitor their coral reefs and related community socio-economic aspects. Key areas of capacity building that will be supported through the project include participatory MPA planning and design; mapping, boundary delineation and mooring buoy installation; Reef Check and SocMon assessment and monitoring surveys; survey data analysis and application; enhanced participation of the private sector and other key community sectors.

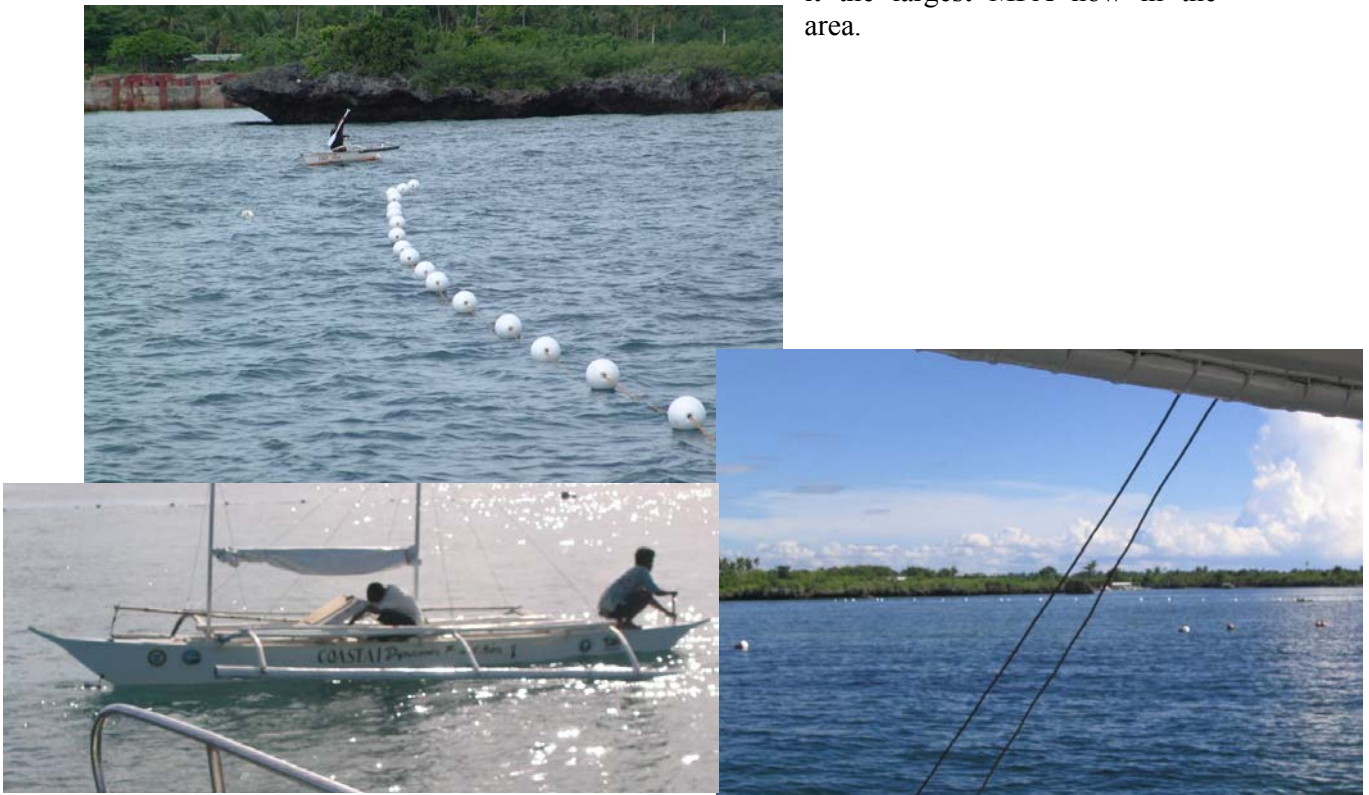
Key areas and activities for capability building during the reporting period included:

- **City of Lapu Lapu** – Responsible city-level local government unit, supported by a Fisheries and Aquatic Resources Management Council (FARMC) and their DA / CAO. As part of the project, full attendance was maintained by CDF staff in weekly City FARMC meetings as well as several organized field trips and surveys to evaluate proposed livelihood activities and alternatives for targeted coastal communities. In general, all community activities were lead or participated in by DA / CAO staff to build their capabilities and recognize their roles and responsibilities.
- **Barangay Councils of Targeted MPA Areas** – Responsible community-level local government unit. As part of the project, CDF staff provided technical assistance and support for planning and delineating proposed MPA areas and drafting appropriate ordinances. This included CDF assistance and consultations to help establish a Barangay-level FARMC to guide planning and management of the proposed Talima MPA;
- **Local Dive Operators and Resorts** – Significant private sector resources that could be organized and mobilized under the project. As part of the project, CDF staff provided needed support and active involvement to the “Ocean Care Advocates, Inc.” – which was formed with CDF support in late 2002 and is the first legally registered, non-government organization (NGO) comprised of concerned resorts and dive operators based on Mactan Island, with a goal to support establishment of MPAs and improve reef conservation.
- **Bureau of Fisheries and Aquatic Resources** – A key source of technical and legal MPA assistance. As part of the project, they were directly involved in all trainings, Reef Check surveys and MPA establishment activities, and include a number of CDF volunteers;
- **University of San Carlos (USC) and University of the Philippines (UP), Cebu** – Marine sciences, education and community extension. The USC operates a marine station within the project area. As part of the project, they were directly involved in all trainings, Reef Check surveys and MPA establishment activities as the CDF primarily consists of graduates and volunteers from these local universities;
- **The Cebu Jaycees** – One of the oldest, civic-oriented business groups in Cebu and the Philippines. As part of the project, CDF supported design and development of their REEF Program and MPA and coastal livelihood support activities in the Barangay Talima area, for which they were honored with national and international awards.
- **Philippine Coast Guard** – Increasingly active in coastal law enforcement. As part of the project, CDF staff provided continued liaison and updates, including their active role in the March 2003 “launching” of the Talima MPA;

- **Philippine Coast Guard Auxiliary** – Members include most local dive / boat operators. As part of the project, CDF staff continued to support their active involvement and participation in key activities;
- **International interns and graduate students** – Supported SocMon thesis research design and preparation for a Dutch M.Sc. intern (Utrecht University) who will conduct his 4-month field studies with CDF starting in Oct. 2004. This intern (Rogier Boks) also completed his Bachelor research with CDF in this same field of study in 2003 and has now established “Reef Check Netherlands” as a formal organization (www.reefcheck.nl).

Assist Planning, Establishment and Management of MPAs: The project’s anticipated output and results of supported training and capability building is a measure-able increase in the local reef areas that legally designated and protected as MPAs, and the concurrent environmental and economic benefits that improved reef management can provide.

Following assisted establishment of the Maribago MPA (Mactan Island) in 2002 and Talima and Suba Basbas MPAs in 2003, project attention was focused on Barangay Baring (Olango Island) during the reporting period due to the observed political will and public support to establish an MPA in their reef area, which is adjacent to Talima MPA. The combined Talima – Baring reef area that is now recognized as an MPA, marked by buoys and enforced by patrols is in excess of 25 hectares and includes nearly two (2) kilometers of coastline, making it the largest MPA now in the area.



Proposed Integration of Socio-Economic Parameters into Reef Check Methods: Over the course of this project, a discrete set of socio-economic parameters and approaches will be identified and recommended to Reef Check as potential additions to their current core and optional data collection protocols.

These activities were fully integrated into conducted training program which was held by CDF in June 2004 on Mactan Island, Cebu for selected participants from local partners and Durham University (U.K.) volunteers involved in a two-month “coral awareness and research expedition” (DU-CARE 2004). Primary funding support for this training program was provided by the DU-CARE 2004, the Shangri-La Mactan Resort and local dive operators.

Concurrently in June / July 2004, the collective results and experiences gained to date were presented at the 10th International Coral Reef Symposium held in Okinawa, Japan. The presentation of this paper entitled “*Putting Reef Check and SocMon to the Test: Cost-Effective Approaches and Results to Improve Reef Monitoring and MPA Management in a Complex “Urban” Environment*” was made by Dr. Perry Alino, one of the Philippines’ and South East Asia’s leading coral reef scientists.

Project-Related Publications during Reporting Period:

MICHAEL and NORA ROSS, M. AMORES, A. AMORES, and D. MONSANTO, 2004. “*Putting Reef Check and SocMon to the Test: Cost-Effective Approaches and Results to Improve Reef Monitoring and MPA Management in a Complex “Urban” Environment*” Presented at the 10th International Coral Reef Symposium, Okinawa, Japan, June / July 2004.

JOHN DAVIS, editor, 2004. “*Urban MPAs: Protecting Marine Habitats in the Midst of Human Populations – Establishing Community-Based MPAs in a Large Community: Lapu Lapu City (Philippines)*”. MPA News, School of Marine Affairs, University of Washington, Vol. 6, No. 3, September 2004

JOS HILL and CLIVE WILKINSON, 2004. *Methods for Ecological Monitoring of Coral Reefs, Version 1 – A Resource for Managers* Australian Institute of Marine Sciences and Reef Check.

PATRICK GARRETT, 2004. “*Diving with a Difference in Cebu*”, Cathay Pacific Airlines magazine, Spring Quarter, 2004.