

MAR FUND PROPOSAL FOR SOUTH WATER CAYE MARINE PROTECTED AREA

PART I: PROJECT SUMMARY

1. Project name: Tobacco Caye Marine Station; a facility established for regional training and education, and the foundation for a sustainable model of community co-management of the South Water Caye Marine Reserve (SWCMR) through community outreach and education programs.

2. Summary of project: This project will allow for the dissemination of conservation protocol and information among coastal residents, resource users, visiting tourists, and our primary target audience, students. The education and training facility will serve to inspire local participation in conservation activities to sustain livelihoods through restoration, protection, policy recommendations and co-management of SWCMR. The facility and its programs will serve to reactivate the South Water Caye Marine Reserve Advisory Committee, and establish a pilot outreach program combining community awareness and local school learning programs within the SWCMR and buffer communities. Training, outreach and education programs will be conducted in partnership with the SWCMR Advisory Committee with recommendation from the Fisheries Department, serving to strengthen and empower local engagement.

3. Project location:

Tobacco Caye, South Water Caye Marine Reserve, Stann Creek District, Belize.

4. Applicant organization information:

Monkey Bay Wildlife Sanctuary

Address: PO Box 187, Belmopan City

Telephone: 820 3032

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5. Contact person information:

Name: Matthew Jasinski

Title: Station Manager

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6. Duration of project

12 Months

7. Estimated cost of project in US\$: 45,050

Funds requested from MAR Fund	\$19,850		% 44
Cash counterpart contribution. List all the agencies and amount of contribution.	Names of the Donors n/a	Amount (\$) n/a	% n/a
In-kind Contribution of other organizations.	Names of the Donors n/a	Amount (\$) n/a	% n/a
Contribution of the organization applying for grant.	Amount (\$) \$25,200		% 56
TOTAL COST	(\$) 45,050		100%

PART II: PROJECT DESCRIPTION

8. Introduction:

What is the topic or problem that your project will focus on? Why is it important? What previous or on-going efforts have also focused on this issue? (350 words maximum) Belize has a total of 18 Marine Protected Areas (MPAs) covering about 22% of its continental shelf and atolls. The vast majority of the MPA area (about 99%) is actually open to fishing, with less than 2% being fully closed to fishing (CZMAI, 2004). MPAs and their management form a major component of the Belize Biodiversity Action Plan. However, there are major gaps in the ability of GOB to enforce marine protection regulations, due to demographic trends associated with large-scale migration, social stratification and the misunderstood role of MPAs in promoting community participation.

The unfortunate fact is that most Belizeans have never even seen their world-famous Barrier Reef and have no experiential connection with marine life and marine ecosystems except as consumers of marine products. Until we can personalize this relationship between human life and marine life, we will have a difficult time garnering local support for marine conservation efforts (McField and Bood, 2007). It has been amply demonstrated throughout the world that conservation efforts are most successful when local communities are fully informed and able to participate - meaningfully - in decision-making processes (Agrawal and Gibson, 1999). Otherwise, conservation may be seen as one more annoying series of regulations threatening their livelihoods and possibilities for recreation.

The main threat to the Belize Barrier Reef and the MPAs is a discontinuity between the goals of GOB/Fisheries management plans and needs and perceptions of local communities. Several of these MPAs encompass traditional fishing grounds. This has fuelled opposition against the establishment of MPAs, specifically marine reserves, by some fishers. In some cases, local fishermen have spearheaded strong lobbying for de-reservation of particular sites. The source of the conflict includes the:

- Misunderstanding of MPAs and their role;
- Lack of awareness of management plans and goals;
- Miscommunication and mistrust between regulatory agencies and resource users.

The Coastal Zone Management Authority and Institute (CZMAI) established in 1998 served successfully in addressing these problems, but since 2004 there have been few Advisory Committee meetings and the technical staff have left since international funding has stopped.

9. Project relevance:

Marine Protected Areas in Belize are established based on classification according to the IUCN system for protected areas for management criteria. South Water Caye Marine Reserve (SWCMR) is classified under two IUCN categories. The southern area of Pelican Cayes is classified category IV to maintain, conserve and restore species and habitats. The majority of the reserve falls under category VI: to protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial. The main objectives for management of a category VI reserve are:

- To promote sustainable use of natural resources, considering ecological, economic and social dimensions;
- To promote social and economic benefits to local communities where relevant;
- To facilitate inter-generational security for local communities' livelihoods – therefore ensuring that such livelihoods are sustainable;
- To integrate other cultural approaches, belief systems and world-views within a range of social and economic approaches to nature conservation;
- To contribute to developing and/or maintaining a more balanced relationship between humans and the rest of nature;
- To contribute to sustainable development at national, regional and local level (in the last case mainly to local communities and/or indigenous peoples depending on the protected natural resources);
- To facilitate scientific research and environmental monitoring, mainly related to the conservation and sustainable use of natural resources;
- To collaborate in the delivery of benefits to people, mostly local communities, living in or near to the designated protected area;
- To facilitate recreation and appropriate small-scale tourism.

Our project's focus is on strengthening the SWCMR Advisory Committee, strengthening community engagement in conservation activities and sustainable

practices, and strengthening community education. The activities used will contribute to the management of the area by supporting the principle of The Belize National Protected Areas System Plan. ‘The Government of Belize shall promote the sustainable use of Belize’s protected areas by educating and encouraging resource users and the general public to properly conserve the biological diversity contained in these areas in order to maintain and enhance the quality of life for all. This shall be achieved by facilitating the participation of local communities and other stakeholders in decision-making and the equitable distribution of benefits derived from them, through adequate institutional and human capacity building and collaborative research and development.’ (Belize National Protected Areas System Plan, 2005)

Our project further supports and relates to the Third Strategic Objective -“building alliances to benefit Belizeans” - of the Coastal Zone Management Authority and Institutes (CZMAI) National Integrated Coastal Zone Management Strategy for Belize. This plan is to support the allocation, sustainable use, and planned development of Belize’s coastal resources. Through increased knowledge and building of alliances for the benefit of all Belizeans and the global community the plan will contribute to Belize’s regional commitments in biodiversity and natural resources management, including the Barrier Reef System that it shares with Mexico, Honduras and Guatemala (CZMAI, 2002). The key areas that our project supports under this Strategic Objective are:

- Education, awareness and communication: Environmental education and public awareness are amongst the most critical activities to promote conservation and sustainable management of coastal resources.
- Coastal Advisory Committees: To integrate and bring together a community committee in the process of drafting and implementing management plans.

The activities described in this proposal will contribute to and support the management plan of South Water Caye Marine Reserve specifically in the areas described here and lay a foundation on which to build a system of community co-management.

10. Objectives:

General objectives

The general objective is to strengthen the SWCMR Advisory Committee, strengthen local engagement and strengthen community education. This will be accomplished by establishing a marine training facility at Tobacco Caye that serves to provide community outreach, awareness and training programs in support of community awareness and engagement. Based on Monkey Bay’s success with the Sibun Watershed Association (SWA), the training facility will serve to establish a pilot outreach program combining community awareness and local school education within the South Water Caye Marine Reserve (SWCMR).

Specific objectives

1. To educate and raise local awareness on the global importance of the Belize Barrier Reef (BBR) and the positive role of Marine Protected Areas (MPAs), and the pivotal role that communities can serve in long term reserve management. Education and outreach activities will be conducted at Tobacco Caye and in local schools and communities that use the resources of SWCMR. Education programs will address directly the reserve's mandate to bring user behaviour into compliance, while also uniquely integrating a watershed continuum concept with marine science to raise awareness of users of the protected area (fishers, tourists, land owners, etc.).
2. Provide information about the marine environment for visitors, residents and user groups on how to use the resource responsibly. This information will be produced at our training facility on Tobacco Caye and distributed to stakeholders throughout SWCMR. Our goal in establishing a marine training facility on Tobacco Caye includes informing and educating students, tourists, local residents and user groups about conservation and the sustainable use of natural resources, specifically about the health and importance of SWCMR and the BBR. The education and training facility will serve to inspire local participation in conservation activities.
3. Establish a comprehensive community outreach program to increase awareness and raise the potential for meaningful community co-management. Our outreach programs will be aimed at both the high school and community level.
4. Strengthen and facilitate a working partnership through workshops, presentations and meetings, between the Belize Fisheries Department and the SWCMR Advisory Committee. This will pave the way for a meaningful model of community participation in co-management of the SWCMR, i.e., the "equal sharing of power and responsibility between government and a local community unit, advisory involvement of an NGO where possible and desired, in the management of a protected area by members living on, near or adjacent to it" (Young and Horwich, 2007:140).

11. Project description:

Objective 1, activities, expected results

Investing seed money to plan, initiate and maintain the community-based projects and customize education programs that will address the necessity for better community participation in reserve management and conservation. We will form a conservation group of Tobacco Caye residents and train them to implement our outreach and education programs. Our Community Support Coordinator will develop and deliver outreach and education programs for community members and schools to suit their academic and training requirements. These will then be implemented with assistance from locally trained residents from Tobacco Caye.

Objective 2, activities, expected results

Construct a marine training facility and information centre on Tobacco Caye. From here we will produce information about the marine environment for visitors, local coastal community residents, visiting students and other user groups on how to use the resource responsibly. This will be in the form of leaflets, posters and the reworking of existing signage.

Objective 3, activities, expected results

Our outreach awareness program will serve as a pilot program suitable for transfer to other MPAs. The program will start locally around Tobacco Caye and spread throughout SWCMR and its associated coastal communities throughout the year. This will serve to improve local perceptions and attitudes, offering guidelines on the sustainable use of resources and explaining the physical, biological and chemical connections between terrestrial watersheds and the marine environment. It will also encourage/enable meaningful participation from school level and upward to community level in the conservation of natural resources which are vital for their livelihoods.

Objective 4, activities, expected results

We will host training workshops, presentations and meetings, bringing together the Fisheries Department and local community members to establish communication and a strengthened partnership between them. The project team will develop project objectives in partnership with the SWCMR Advisory Committee and serve to strengthen the relationship between the Fisheries Department and the Advisory Committee. As a result Advisory Committee meetings will resume with intent to develop and sustain improved protection and management strategies of the SWCMR and the larger BBR.

12. Timetable:

OBJECTIVE AND ACTIVITIES	M O N T H											
	1	2	3	4	5	6	7	8	9	10	11	12
Fully developed education and awareness programs for local schools and communities.	■	■										
Construction of marine training facility.	■											
Production of conservation and awareness leaflets, posters and signs.	■	■										
Outreach and awareness program.	■	■	■	■	■	■	■	■	■	■	■	■
Reactivate and strengthen SWCMR Advisory	■	■	■	■	■	■	■	■	■	■	■	■

Committee and expand participation of community involvement in conservation activities.												
Planning and hosting training workshops, presentations and meetings.												

13. Project development table:

- Time Unit: Quarter
 Semester
 Year

Objective	Expected Result	Activity	Time Unit				Process indicator	Impact Indicator	% of Completion
			1	2	3	4			
1.Delivering customized watershed and marine ecology education programs.	1.A. School children understand the fragility of the BBR, the relationship between watershed and coastal zone, and the	1.A.1./1.B.1. Design customised ecology education programs.	X				1.A.1.1/1.B.1 .1 Produce course curriculum and activity guidelines.	The number of students and other community members that receive education and awareness programs, plus number	
		1.A.2./1.B.2. Design learning and study aids	X				1.A.2.1/1.B.2 .1 Learning and study aids printed.		

	importance of natural resource conservation. 1.B. Local community members become aware of conservation and sustainable management issues.	1.A.3./1.B.3. Train Tobacco Caye residents to help implement education programs.	X				1.A.3.1/1.B.3 .1 Residents of Tobacco Caye help deliver and evaluate educational programs and workshops in communities.	who participate in field trips.	
		1.A.4./1.B.4. Host and facilitate experiential learning field trips to Tobacco Caye for local students and community members within the project area.				X	1.A.4.1/1.B.4 .1 Eight field trips from schools and communities in the project to Tobacco Caye have been completed.		
		1.A.5./1.B.5. Deliver education program to local schools and communities.	X	X			1.A.5.1/1.B.5 .1 Students and communities begin to form activity groups and action committees.		

2. Construct a marine training facility and information centre on Tobacco Caye.	2.A. Visitors, locals, land owners and other user groups understand how to use the resource	2.A.1. Construct a functioning training and information facility.	X				2.A.1.1 Training and information facility visited and used for intended purposes.	N/A	
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	responsibly.	2.A.2. Design information leaflets and posters.	X				2.A.2.1 Leaflets and posters printed.		
		2.A.3. Compile a library of information and research material (ongoing).	X	X	X	X	2.A.3.1 Established and continued expansion of books, journal articles, taxonomic keys and other resources.		

3. Deliver outreach and awareness programs.	3.A. Change local perceptions and attitudes. 3.B. Promote sustainable use of resources.	3.A.1./3.B.1. Conduct community events and workshops in local communities and at Tobacco Caye.				X	3.A.1.1/3.B.1 .1 Formation of community action groups. 3.A.1.2/3.B.1 .2 Community conservation activities.	Number of community members who participate in conservation projects and activities	
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4. Strengthen and facilitate a working partnership between SWCMR Advisory Committee,	4.A. Advisory Committee reconfirmed and actively meeting with Fisheries Department.	4.A.1. Deliver training workshops, presentations and meetings at the education facility				X	4.A.1.1 Advisory Committee committed, active and responding to challenges of SWCMR.	A functioning partnership established between Advisory Committee, and Fisheries	
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other interested community members and Fisheries Department.		4.A.2. Host regional events and meetings.				X	4.A.2.1 Community representatives and Fisheries Department schedule meetings to discuss challenges and management within SWCMR.	Department.	
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14. Monitoring and evaluation:

- We will record and monitor expenses and prepare a monthly report to the funder and Fisheries Department for the duration of the project on how funds are utilised and distributed throughout the life of the project;
- We will supply the funder and Fisheries Department with quarterly a progress report to include infrastructure development, the community members trained and the progress of our local school and community outreach program;
- We will monitor and measure the success of our education program by using knowledge surveys, and will act as communications liaison, encouraging regular feedback from the community members involved and interested in the project. Primary indicators of achievement will include an increase in environmental awareness and technological ability amongst Belizeans, increased knowledge and participation in conservation activities and the adoption and implementation of policies prescribed within the action plans;
- The results of the project will be disseminated primarily through meetings during, and at the end of the first one-year phase. Results will also be disseminated via reports, published papers, a project newsletter, the World Wide Web and presentations at meetings and conferences.
- Monkey Bay will continue to market, host and facilitate experiential learning programs and internship placements in Belize that generate revenue to help support and sustain the goals and objectives of the project beyond the projects one year duration.

15. Project Budget

Budget Item	Amount Requested to MAR Fund	Amount Leveraged from Other Sources (Cash)	Amount Leveraged from Other Sources (In-kind)	Amount contributed by the organization	TOTAL
Training Centre	9,000			3,000	12,000

(400 sq feet building)					
Solar panels/batteries and inverter				3,100	3,100
Furniture for training centre (tables/benches)	1,150				1,150
Transport of materials				2,500	2,500
Computers and internet installation	4,000			1,100	5,100
Hosting meetings, workshops and presentations.	1,000			200	1,200
Community education				900	900
Production of information leaflets and posters	700				700
Hosting field trips.	4000			15,100	19,100
TOTAL	19,850			25,900	45,750

Detailed budget notes (650 words maximum)

1. Training centre: The Cost of construction for the training and information centre is calculated on the equivalent of a contractors price of US\$30 per square foot of floor space. The floor area is 400 square feet. The \$30 per square foot includes all materials for the build (lumber, zinc roofing, hardware) and labour.
2. Solar power: This is calculated for 4 solar panels, 4 batteries and 1 inverter.
3. Furniture for training centre (tables/benches): The total cost comes from 4 tables and 8 benches capable of seating 24 people. The per unit cost is \$287.5 (1 table and 2 benches)
4. Transport: This is the on off cost of a single trip to transport all materials and equipment for the whole project from Dangriga to Tobacco Caye
5. Computers and internet installation: this cost is calculated from 4 computers at \$1000 each, installation of internet on Tobacco Caye which is a one off fee of \$175, and a monthly internet charge of \$75 for 12 months.
6. 6 meetings/presentations/workshops at a cost of \$200 each to cover the cost of transport and hosting of SWCMR community members at Tobacco Caye.
7. 6 trips to 6 communities at \$150 each to cover costs of transport and conducting community education and awareness avents in each of the 6 locations.
8. Production of information leaflets and posters: leaflets will be A4 size and formatted into 6 columns. 1000 will be printed at a cost of \$500, and 50 posters at a cost of \$4 each (\$200 total).

9. Hosting field trips. The cost is calculated from an estimate of 8 field trips with 15 people on each trip. The trips will be 3 days/2 nights in duration on Tobacco Caye and are calculated from:

- \$35 per person water taxi (\$4200 for 8 trips of 15 pax)
- \$60 per person for 2 nights room and board (\$7200 for 8 trips of 15 pax)
- \$30 per person for full day boat excursion (\$3600 for 8 trips of 15 pax)
- \$7.50 per person for rental of equipment (\$900 for 8 trips of 15 pax)
- \$200 per day trainer/instructor fee (\$3200 for 8X2-day trips of 15 pax)

DATE	PERCENTAGE	AMOUNT US\$
01 December 2008	70%	13,895
01 June 2009	20%	3,970
01 September 2009	10%	1,985
Total		

16. Bibliography:

- Agrawal, A., Gibson, C. (1999). Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development* Vol. 27 (4), pp. 629-649,
- Coastal Zone Management Authority and Institute (CZMAI) (2002). The National Integrated Coastal Zone Management Strategy for Belize,
- Coastal Zone Management Authority and Institute (CZMAI) (2004). Raw data. GIS database. Belize City, Belize.
- McField, M., Brood, N. (2007). Our Reef in Peril-Can We Use It Without Abusing It? In Balboni, B. S., Palacio, J. O (Eds.). *Taking Stock: Belize at 25 years of Independence (Volume 1)* (pp. 123-150). Belize: Cubola Productions.
- Young, C., Horwich, R. (2007). History of Protected Area Designation, Co-management and Community Participation in Belize. In Balboni, B. S., Palacio, J. O (Eds.). *Taking Stock: Belize at 25 years of Independence (Volume 1)* (pp. 123-150). Belize: Cubola Productions.
- Belize National Protected Areas System Plan. (2005)

Annexes:

Project Staff:

Matthew Miller, the founder of Monkey Bay Wildlife sanctuary, will act as Executive Director. He will oversee infrastructure development as well as project team objectives and plans. Mr. Miller has over 20 years of experience in Belize, including a prestigious position as Associate Country Director of Belize for the U.S. Peace Corps. He also refined his knowledge of conservation while working as Program Manager for Lighthawk, an advocacy agency that uses aviation overflights to document incursions of boundary demarcations. He has management experience, in-country connections, and respect from the Belizean community in general. Mr. Miller is an innovative resident of Belize dedicated to the preservation of natural ecosystems, with a special reverence for youth development via experiential learning and environmental education.

Monkey Bay Wildlife Sanctuary is a 1,070-acre private protected area that serves as an environmental education center with support infrastructure for 50 overnight guests. Founded in 1990, Monkey Bay markets experiential learning services and field ecology programs to over 50 schools, universities, and ecotourism operators worldwide. The sanctuary promotes ecological sustainability using integrated technology for solar and wind power supply, rainwater catchments, and biological waste management systems.

Matthew Jasinski is a postgraduate in Marine Environmental Science from Portsmouth University, U.K. He has an extensive background in oceanography, human impact mapping on marine ecosystems, conservation, environmental risk assessment and auditing, hydro-science, geophysics, remote sensing, and marine ecology. Mr. Jasinski is a field instructor in Belize and has experience in the following:

- Watershed ecology in Belize;
- Shoreline ecology in Northern France;
- Scientific and Technical Diving;
- Marine Environmental education and reef ecology in Papua New Guinea.

In 2007, he received the Ocean Scientific International Prize, University of Portsmouth, for his recent research of trace metals in marine sediments in the Bristol Channel, using Diffusive Gradients in Thin Films (DGT). Mr. Jasinski will be responsible for managing the training and information facility, publications/reports, hosting visiting groups and community events, and the marine environmental education curriculum at the Tobacco Caye.

Dr. Colin Young serves as the project's Community Support Coordinator and will facilitate the design and delivery of community outreach and awareness and co-management training programs to enable local involvement in MPA management. Coordinator will measure the success of our education program by using knowledge surveys, and will act as communications liaison. Dr. Young is the director of the Environmental Science Program at Galen University, Belize, where he designs and teaches courses in sustainable development, ecology, plants and society, environmental problems, and society and environment. Dr. Young holds an M.S. and Ph.D. in ecology from the University of Connecticut and has a long history of research experience including:

- Conducting a review of the National Protected Areas Policy and System Plan;
- Completion of an extensive quantitative assessment of Belizean Creole ethnobotany;
- Assessing the reliability of ethnobotanical data collected from collaborators;
- Investigating the efficacy of Creole medicinal plants using bioassays, laboratory tests, and extensive literature searches.
- Assisting in research to understand the regulation of bioluminescence in dinoflagellate *Lingulodinium polyedrum*.
- Conducting an extensive underwater sampling of coral diversity of Belize's barrier reef;
- Assisting in the evaluation of the effects of sedimentation of Belize's barrier reef;

From his research and involvement with the Community Baboon Sanctuary, Dr. Young has published a number of papers, including;

- Young, C. 2008. Belize's Ecosystem's: Threats and Challenges to conservation in Belize. *Tropical Conservation Science* 1. 18-23.
- Young, C. 2008. The State of Forests and Ecosystem in Belize. An interview with Mongabay.com. http://news.mongabay.com/2007/1116-interview_young_belize.html
- Young, C., Horwich, R. (2007). History of Protected Area Designation, Co-management and Community Participation in Belize. In Balboni, B. S., Palacio, J. O (Eds.). *Taking Stock: Belize at 25 years of Independence (Volume 1)* (pp. 123-150). Belize: Cubola Productions.
- Young, C. (2004). *The Common Flora and Fauna of the Community Baboon Sanctuary*. Angelus Press. Belize City, Belize.
- Young, C. (2001). *An Ethnographic Study on AIDS and migration in Benque Viejo Del Carmen, Cayo District, Belize, Central America*. University of Belize.
- Young, C. (2000). *Concepts of disease and illness and ethnobotanical uses of plants among Belizean Creoles in North-Central Belize*. Undergraduate Thesis. Marlboro College, Marlboro, Vermont.

Dr. Young's teaching experience has been as a Field Instructor, School for International Training (SIT), conducting short and intensive courses in anthropological and ecological field methods for SIT students in Belize; Assistant Professor, Galen University; Foundations of Biology Teaching Assistant at University of Connecticut, Department of Ecology and Evolutionary Biology and Ecosystem and Cultural Studies Field Instructor at San Francisco State University School of Continuing Studies.

Dr. Young's involvement in conservation began at a very early age in Bermudian Landing Village, at the Community Baboon Sanctuary, Belize, where he grew up. He now serves as a voluntary advisor to the Community Baboon Sanctuary Women's Conservation Group. At the University of Belize he co-founded the Students Concerned for the Protection of the Environment environmental club. He serves on the Board of Directors of the Katalyst Institute for Public Policy and Research and was recently elected to the Board of Directors of Friends for Conservation and Development, one of Belize's prominent co-management organizations.