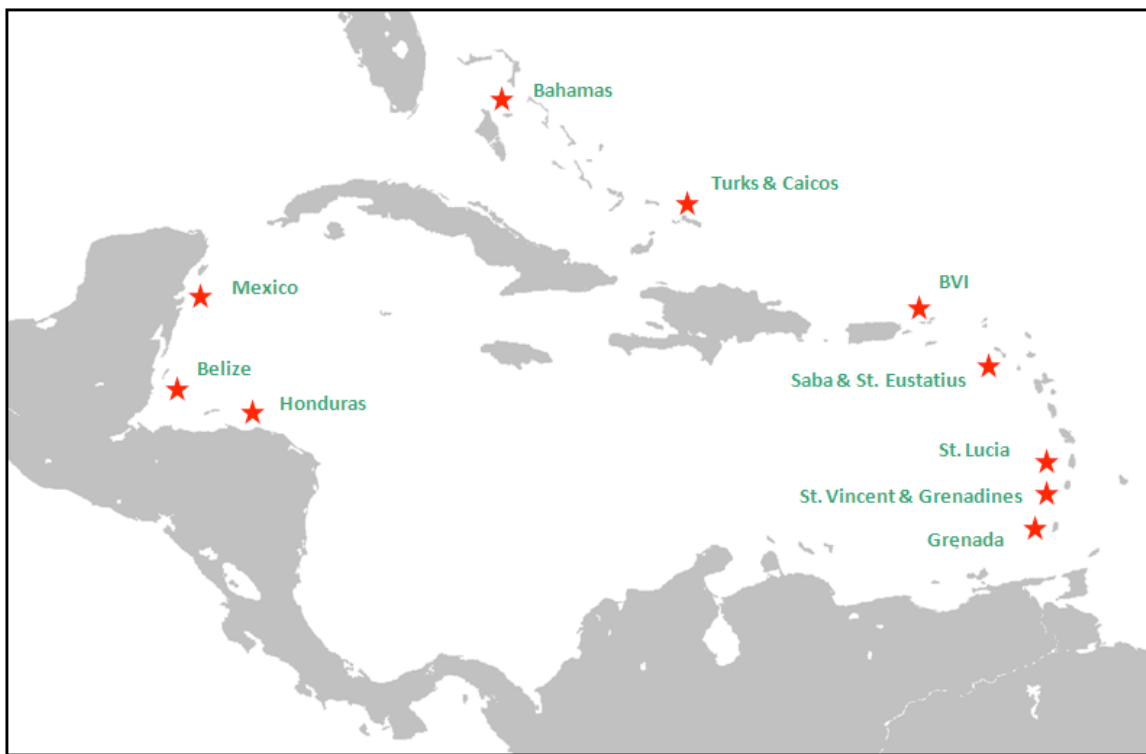




**CaMPAM**  
Network & Forum

## A Management Capacity Assessment of Selected Coral Reef Marine Protected Areas in the Caribbean



**August 2011**

## Abstract

This report presents the findings of an assessment of capacity building needs for the management of marine protected areas (MPAs) in the Caribbean region. A total of 27 MPA sites in 10 countries and territories were included in the assessment, which is an initiative of NOAA Coral Reef Conservation Program (CRCP) in partnership with the Caribbean Marine Protected Area Management Network and Forum (CaMPAM). A gap analysis of existing MPA capacity documents revealed a great deal of variation in the purpose, geographic scope, methodology, and nature of capacity information that has been collected to date. As such, a broad-based comparison of existing information was challenging and would likely not provide an accurate analysis. Accordingly, for this assessment a new survey tool was developed based on a modified version of an existing NOAA Coral Reef Conservation Program MPA Management Assessment checklist (<http://coralreef.noaa.gov/resources/publicationsdata/>). This tool, intended to be a guided self-assessment, was used by the consultants in an interview process whereby they read through questions with site managers and then allowed the managers to self-select the answers that they deemed most appropriate for their site's situation. Each question was followed by a more thorough discussion about why that answer was selected. The regional results demonstrate that the current perceived capacity of sites is greatest in relation to zoning/boundaries, governance, management planning, stakeholder engagement, conflict resolution mechanisms, and outreach and education. Current perceived capacity of sites is lowest in relation to alternative livelihoods, socioeconomic monitoring, and fisheries management. Priority MPA management capacity needs as identified by managers are: 1) enforcement (10 sites) 2) financing (9 sites) 3) management planning, bio-physical monitoring, socio-economic monitoring (7 sites), and 4) MPA effectiveness evaluation, and outreach and education (6 sites). Preferred approaches to capacity building at a regional scale are: 1) technical support, 2) training, 3) more staff, 4) learning exchanges, and 5) higher education course. Individual site results provide more detailed information under the "rationale" narrative sections and can inform users of more specific details of the local situation and capacity strengths, and challenges.

*This report should be referenced as:*

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## Table of Contents

<b>Abstract.....</b>	<b>2</b>
<b>List of Figures .....</b>	<b>5</b>
<b>List of Acronyms .....</b>	<b>7</b>
<b>Executive Summary .....</b>	<b>9</b>
<b>How to Use This Report .....</b>	<b>14</b>
<b>Background .....</b>	<b>15</b>
<b>Purpose .....</b>	<b>15</b>
<b>Assessment Objectives.....</b>	<b>15</b>
<b>Gap Analysis .....</b>	<b>15</b>
<b>Geographic Scope.....</b>	<b>17</b>
<b>Methods.....</b>	<b>19</b>
<b>Note on Methodology .....</b>	<b>26</b>
<b>Regional Summary Results .....</b>	<b>28</b>
<b>MPA Management Capacity Priority Needs.....</b>	<b>28</b>
<b>Current MPA Management Capacity .....</b>	<b>29</b>
<b>Priority Capacity Building Approaches .....</b>	<b>39</b>
<b>Summary Conclusions and Lessons Learned.....</b>	<b>40</b>
<b>Site Assessment Results.....</b>	<b>41</b>
<b>The Bahamas .....</b>	<b>42</b>
Andros Barrier Reef National Park.....	43
Pelican Cay Land and Sea Park.....	52
South Berry Islands Marine Reserve.....	61
<b>Belize.....</b>	<b>69</b>
Port Honduras Marine Reserve.....	70
Half Moon Caye and Blue Hole Natural Monuments .....	76
South Water Caye Marine Reserve .....	82
<b>British Virgin Islands .....</b>	<b>89</b>
Hans Creek Fisheries Protected Area .....	90
Horseshoe Reef Fisheries Protected Area.....	96
Wreck of the Rhone Marine Park.....	102
<b>Dutch Caribbean - Saba and St Eustatius.....</b>	<b>110</b>
Saba Marine Park .....	111
St Eustatius National Marine Park.....	120
<b>Grenada .....</b>	<b>128</b>
Molinière/Beauséjour Marine Protected Area .....	129
Sandy Island - Oyster Bed Marine Protected Area .....	138
<b>Honduras .....</b>	<b>146</b>
Monumento Natural Marino Archipiélago Cayos Cochinos.....	147
Zona de Protección Especial Marina Sandy Bay - West End .....	153
Zona de Protección Especial Marina Turtle Harbour – Rock Harbour .....	160
<b>Mexico.....</b>	<b>167</b>
Parque Nacional Arrecife Alacranes.....	168

Parque Nacional Arrecifes de Xcalak .....	175
Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc .....	181
<b>St. Lucia .....</b>	<b>187</b>
Pitons Management Area.....	188
Point Sable Environmental Protection Area.....	194
Soufriere Marine Managed Area .....	201
<b>St. Vincent &amp; the Grenadines .....</b>	<b>210</b>
South Coast Marine Conservation Area .....	211
Tobago Cays Marine Park.....	217
<b>Turks and Caicos Islands .....</b>	<b>226</b>
Columbus Landfall National Park.....	227
Princess Alexandra Land and Sea National Park .....	237
West Caicos Marine National Park.....	247
<b>Recommendations for Next Steps .....</b>	<b>257</b>
<b>Acknowledgements .....</b>	<b>258</b>
<b>APPENDIX .....</b>	<b>259</b>

### List of Figures

Figure 1: Number of sites that identified capacity area as a priority need.....	29
Figure 2. Perceived “Current MPA management capacity” (tier most frequently reported per capacity area).....	30
Figure 3. Percent of sites reporting high/ medium/ low for level of public support for the MPA.....	31
Figure 4. Percent of sites reporting high/ medium/ low for level of government support for the MPA.....	31
Figure 5. Overall perception of tiers achieved by sites for the capacity area “enforcement” .....	33
Figure 6. Overall perception of tiers achieved by sites for the capacity area “financing”.....	34
Figure 7. Overall perception of tiers achieved by sites for the capacity area “management planning” .....	35
Figure 8. Overall perception of tiers achieved by sites for the capacity area “bio-physical monitoring” .....	36
Figure 9. Overall perception of tiers achieved by sites for the capacity area “socio-economic monitoring” .....	37
Figure 10. Overall perception of tiers achieved by sites for the capacity area “MPA effectiveness evaluation” .....	37
Figure 11. Overall perception of tiers achieved by sites for the capacity area “outreach and education” .....	38
Figure 12. Number of sites that identified each type of capacity building approach as priority.....	39
Figure 13 Map of the National Parks of Andros Island. Andros Barrier Reef National Park –the combined area of Northern Marine Park and Southern Marine Park .....	44
Figure 14. Map of Abacos Islands National Parks including Pelican Cay Land and Sea Park .....	52
Figure 15. Map of South Berry Islands Marine Reserve.....	62
Figure 16. Map of Port Honduras Marine Reserve .....	70
Figure 17. Map of Half Moon Caye and Blue Hole Natural Monuments .....	76
Figure 18. Map of South Water Caye Marine Reserve .....	83
Figure 19. Map of Beef Island (Site number 15 is the Hans Creek Fisheries Protected Area).....	90
Figure 20. Map of Anegada Island (Site number 3 is the Horseshoe Reef Fisheries Protected Area).....	96
Figure 21. Map of Peter, Salt, and Cooper Island (Site number 57 is the Wreck of the Rhone Marine Park). .....	102
Figure 22. Map of Saba Marine Park. © David J. Kooistra, Saba National Marine Park, 2003.....	112
Figure 23. Map of St. Eustatius Marine Park with Buoys (MacRae D.R. and Esteban, N. 2007).....	121
Figure 24. Zoning Map for Molinière/Beauséjour Marine Protected Area .....	130
Figure 25. Map of Sandy Island Oyster Bed Marine Protected Area.....	139

Figure 26. Map of Monumento Natural Marino Archipiélago Cayos Cochinos .....	147
Figure 27. Map of Zona de Protección Especial Marina Sandy Bay - West End.....	154
Figure 28. Map of Zona de Protección Especial Marina Turtle Harbour – Rock Harbour .....	160
Figure 29. Map of Parque Nacional Arrecife Alacranes.....	169
Figure 30. Map of Parque Nacional Arrecifes de Xcalak. ....	175
Figure 31. Map of Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc .....	181
Figure 32. Map of Point Sable Environmental Protection Area.....	195
Figure 33. Map of Soufriere Marine Managed Area .....	201
Figure 34. Map of South Coast Marine Conservation Area.....	212
Figure 35. Map of Tobago Cays Marine Park.....	218
Figure 36. Map of The Columbus Landfall National Park.....	228
Figure 37. Map of Princess Alexandra Land and Sea National Park. ....	238
Figure 38. Map of Princess Alexandra Land and Sea National Park. ....	248

## List of Acronyms

AGRRA	Atlantic and Gulf Rapid Reef Assessment
BAS	Belize Audubon Society
BICA	Bay Islands Conservation Association
BTN	Bahamas National Trust
CaMPAM	Caribbean Marine Protected Area Management Network and Forum
CANARI	Caribbean Natural Resources Institute
CCF	Cayos Cochinos Foundation
CERMES	Centre for Resource Management and Environmental Studies CFD Conservation and Fisheries Department
CLNP	Columbus Landfall National Park
COLAP	Community Advisory Council for Protected Areas and Wildlife
CONANP	Comisión Nacional de Áreas Naturales Protegidas
CONAPESCA	Comisión Nacional de Acuacultura y Pesca
CRCP	NOAA Coral Reef Conservation Program
DCNA	Dutch Caribbean Nature Alliance
DECR	Department of Environment and Coastal Resources
DIGEPESCA	Programa Nacional de Pesca y Acuicultura
DMR	Department of Marine Resources
ET	CaMPAM Executive Team
GCFI	Gulf and Caribbean Fisheries Institute
GEF	Global Environment Facility
GIS	Geographic Information System
GPS	Global Positioning System
HCFPA	Hans Creek Fisheries Protected Area
ICF	Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre
MAB – UNESCO	Man and Biosphere
MAR Fund	Mesoamerican Reef Fund
MBMPA	Molinière/Beauséjour Marine Protected Area
MBRS	Mesoamerican Barrier Reef Systems Project
MCA	Marine Conservation Area
MPA	Marine Protected Area
NGO	Non Governmental Organization
NISP	National Implementation Support Partnership
NOAA	National Oceanic and Atmospheric Administration
OPAAL	OECS Protected Areas and Associated Livelihoods project
OTEP	Overseas Territories Environment Programme
PALSNP	Princess Alexandra Land and Sea National Park
PAS	Protected Areas System
PCLSP	Pelican Cay Land and Sea Park
PHMR	Port Honduras Marine Reserve
PMA	Pitons Management Area
PMAIB	Programa de Manejo Ambiental de Islas de la Bahia
PNAA	Parque Nacional Arrecife Alacranes
PNAX	Parque Nacional Arrecifes de Xcalak

PNCOIMPCPN	Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc
PROARCA	Programa Regional Ambiental de Centro América
PROFEPA	Procuraduria Federal de Proteccion al Ambiente
PSEPA	Point Sable Environmental Protection Area
RAPPAM	Rapid Assessment and Prioritization of Protected Areas Management
REHDES	Red Ecologista Hondureña para el Desarrollo Sostenible
RMP	Roatan Marine Park
SAGARPA	FAO Programa de Seguridad Alimentaria en México
SBIMR	South Berry Islands Marine Reserve
SCF	Saba Conservation Foundation
SENAIA	National System for Environmental Impact Assessment
SIOBMPA	Sandy Island -Oyster Bed Marine Protected Area
SMMA	Soufriere Marine Managed Area
SMP	Saba Marine Park
SocMon	Socioeconomic Monitoring Program
SPAW	The Protocol of the Cartagena Convention concerning Specially Protected Areas and Wildlife
STENAPA	St Eustatius National Parks Foundation
SUSGREN	Sustainable Grenadines
SWCMR	South Water Caye Marine Reserve
TCI	Turks and Caicos Islands
TCMP	Tobago Cays Marine Park
TIDE	Toledo Institute for Development and Environment
TNC	The Nature Conservancy
TRIGOH	Tri National Alliance for the Gulf of Honduras
UCME	Utila Center for Marine Ecology
UNEP-CEP	United Nations Environmental Programme - Caribbean Environment Programme
WCMNP	West Caicos Marine National Park
ZPEMTH-RH	Zona de Protección Especial Marina Turtle Harbour – Rock Harbour



## Executive Summary

This assessment is an initiative of NOAA Coral Reef Conservation Program (CRCP) in partnership with the Caribbean Marine Protected Area Management Network and Forum (CaMPAM). The initiative is intended to inform and enable targeted efforts to better address MPA management capacity gaps in the Caribbean region, both internally by NOAA and through CaMPAM as a regional network. The findings are also expected to be of value to other organizations involved in coral reef conservation, and it sought to update existing information on the capacity needs of MPAs in the region. The consultant team was hired to help facilitate the design and implementation of the assessment. The objectives of the assessment included: reviewing existing information in order to identify key gaps in MPA management capacity information for countries and MPA sites in the Caribbean Region; identifying 5-year priority MPA management capacity needs for up to 3 demonstration MPA sites in each of nine Caribbean countries; and providing key information to CaMPAM and NOAA CRCP about MPA management capacity needs in demonstration sites to guide programmatic planning and services such as training, funding, and technical support.

To fulfill the objectives, the approach involved a gap analysis of existing MPA capacity documents that were compiled and reviewed. The documents reviewed varied greatly in purpose, geographic scope, methodology, and capacity information collected. As such, a broad based comparison of information was challenging and would likely not provide an accurate analysis. Additionally, the assessment was intended to focus on-site level management capacity, of which there were very few direct studies. Therefore, the information reviewed was broken down into a variety of categories to inform the decision-making process for the MPA Management Capacity Assessment project (e.g. methodology, capacity indicators, existing capacity information per country).

Given limited resources, the project was restricted in the number of sites that could be assessed. The initial findings of the gap analysis were used to support the selection of countries to carry out the MPA Management Capacity Assessment, as well as to develop the appropriate methodology to meet the objectives. The consultants worked with the CaMPAM Executive Team (ET), represented by NOAA, the United Nations Caribbean Environment Programme, the Gulf and Caribbean Fisheries Institute and the CaMPAM Coordination staff, to develop a set of criteria to rank the most suitable Caribbean countries and territories to carry out the MPA capacity assessment. These criteria included ecological significance; international commitments to the Caribbean Challenge<sup>1</sup>, the Cartagena Convention's SPAW Protocol<sup>2</sup>, and/or the MAR Fund<sup>3</sup>; evidence that the country was investing in MPAs as a tool for conservation, and linkages to U.S. coral reef ecosystems. Based on these criteria, the following ten countries were selected for the assessment *The Bahamas, Belize, British Virgin Islands, Dutch Caribbean (Saba & St. Eustatius specifically), Honduras, Grenada, Mexico, St. Lucia, St. Vincent and the Grenadines, and Turks and Caicos Islands.*

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<sup>1</sup><http://campam.gcfi.org/campam.php#CarChall>

<sup>2</sup> <http://www.cep.unep.org/cartagena-convention/spaw-protocol>

<sup>3</sup> [http://www.marfund.org/en/index\\_ingles.html](http://www.marfund.org/en/index_ingles.html)

After reviewing a variety of tools that could be used to carry out the assessment, it was determined that the NOAA Coral Reef Conservation Program MPA Management Assessment Checklist<sup>4</sup> provided a good foundation for the collection of information, but that there were additional capacity areas critical to cover in the Caribbean region. The consultants used input from the CaMPAM ET as well as other methods to expand the NOAA MPA Checklist, using the same general question format. Additional questions were also added to aid understanding of priority capacity needs and capacity building approaches of interest at the site level.

As a next step, MPA management agencies in each country were contacted to explore their interest in participating in the assessment. Upon agreeing to participate in the project, the MPA agencies were asked to identify up to three specific sites that would be most appropriate for the assessment. Specific criteria developed by CaMPAM were provided to the agency representatives to help them select specific sites to carry out the assessment. The criteria, included biological value (high), conservation viability (high), and degree of threat (medium to low) as perceived by jurisdictional representatives. Each country/ jurisdiction selected 1-3 sites for an anticipated total of 27 sites.

The MPA Management Capacity Assessment was then completed through a desk review, site visits, and report development. *Desk review* - A desk review was conducted of the existing capacity assessment reports or other relevant information that could inform results of this effort for each specific country and selected sites (e.g. management plans, capacity building plans, national system plans). This information was used to prepare for discussions with site managers. *Site visits* - Site visits were conducted in most countries/jurisdictions where the consultants met with focus groups of MPA managers and site staff to complete the survey for each selected site. The surveys were completed through interviews where detailed information on each assessment area was collected. Other country or regional experts that support management of the site and/or that could offer insights to capacity challenges and needs were also consulted in order to help inform the consultants' background knowledge. *Report development* - Upon completion of the site visits and interviews, the site reports were compiled to summarize the results from each MPA, including the capacity strengths, capacity challenges, and priority capacity needs at each site. The site reports were then sent back to site managers for review and edits prior to finalization. This step enabled managers to correct any information that may have been captured incorrectly or was sensitive and should not be made public.

Similar to the NOAA MPA Management Capacity Checklist, the assessment tool employed a tiered approach to measure MPA management capacity, with the first tier reflecting little to no capacity and the third tier reflecting high capacity in the assessment area. While not absolute, it's probable that MPAs that have been recently established or just initiating management activities will normally rank at tier 1 or 2 for most assessment categories. Additionally, MPAs that are more mature and that have been implementing management activities for some time are more likely to rank at tier 2 or 3. This tool was designed to be a guided self-assessment, in which the consultants carried out an interview process where they read through each tier with site managers, and then allowed managers to self-select which tier was most appropriate for the site situation.

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<sup>4</sup> <http://coralreef.noaa.gov/resources/publicationsdata/>

The assessment survey tool captured information for each site on the current level of capacity and needs to improve capacity in the following 24 thematic assessment areas: site designation and design, socioeconomic monitoring, fisheries management, management planning, MPA effectiveness evaluation and adaptive management, integrated coastal management, ecological network development, stakeholder engagement, partnerships/coordination, governance, financing, organizational management, on-site management, outreach and education, sustainable tourism, enforcement, conflict resolution mechanisms, economic valuation, boundaries, resilience to climate change, emergency response process or team, biophysical monitoring, alternative livelihoods, and the use of ecosystem based management principles.

In addition to site capacity results, a summary of all site results was developed to provide a quick glance of the collective information gathered. It should be noted however that this assessment was not designed to provide “regional” results or compare information across sites. Rather the assessment was focused on gathering site-specific information and management capacity needs. Therefore, it should be used only as a basic guideline for making regional analyses. Much more detailed information is provided in site chapter results, which should be used to help address capacity needs.

A total of 27 MPA sites were assessed for this project. The results demonstrate that the current capacity of sites perceived to be greatest in relation to zoning/boundaries, governance, management planning, stakeholder engagement, conflict resolution mechanisms, and outreach and education subjects. The thematic areas perceived to have the lowest current capacity are alternative livelihoods, socioeconomic monitoring, and fisheries management. The priority MPA management capacity needs most often identified by managers are enforcement (10 sites), financing (9 sites), management planning, bio-physical monitoring, socio-economic monitoring (7 sites), MPA effectiveness evaluation, and outreach and education (6 sites). The priority capacity building approaches most often identified were technical support, training, and more staff.

In summary, it is interesting to note that some sites identified their current capacity as tier 3 for specific capacity areas, while also identifying those areas as a priority capacity building need. The reasons for this might reflect a number of different factors. In some cases, while capacity is normally high, the current situation has created a need for support, while in other cases more support is needed to maintain high capacity. It also may relate to the importance placed on that capacity as a core task that needs the strongest capacity possible. In all cases, site managers felt that tier 3 was appropriate. Therefore, it is important to read the detailed rationale for each site specifically before assuming that tier three means no capacity support is needed.

In many cases, “MPA effectiveness evaluation” was often understood to mean “management” effectiveness evaluation only with little or no regard for biological or socio-economic factors. Additionally, many sites have little to no bio-physical monitoring and specifically no numerical indicators of success for conservation of natural resources. Finally, very few sites were measuring social indicators of success such as knowledge, attitudes and perceptions of local stakeholder about the MPA. Overall, existing efforts to evaluate “MPA Effectiveness” with quantifiable indicators that provide a holistic view (i.e. biological, social, and management) of the success of a site in reaching its goals was rare.

As mentioned previously this assessment was carried out as a guided self-assessment and therefore the tiers reported are based on the participants' own perception. Supplemental details captured within the discussion and presented in the rationale section under each capacity area in the sites chapter can more fully inform users of the local situation and capacity strengths and challenges. It is therefore important to recognize that the most actionable and revealing information provided in this report can be found in the details provided under each site chapter in the "rationale" narratives for each assessment area. As such, it is recommended that users of this report carefully read through details of the site chapters before assuming certain strengths/needs/ or challenges purely based on tier selection.

Based on the site level information and regional summary results, the consultants noted a few possible next steps and recommendations. To help ensure that priority capacity needs are supported it is recommended that the various marine conservation programs in the region work together to collectively determine effective ways of providing support to meet these needs through a collective strategic planning process for the region. Throughout the assessment process, discussions with various regional organizations highlighted the great value and benefit in supporting more collaboration among these groups. This assessment provides an excellent opportunity for relevant national and regional organizations to identify which thematic areas they can best provide assistance and to look for new opportunities to collaboratively address gaps in capacity. This follow-up approach would also help to ensure country partners that regional organizations are directly supporting needs identified on the ground.

There are also opportunities at certain sites that are ripe for support and would provide a foundation for regional models. Regional support organizations can work with sites/countries that have strengths in particular areas and work with them to establish "regional models" that could be replicated at other sites. For example, The Bahamas has recently passed an amendment to their protected area law that allows for The Bahamas National Trust to train and deputize volunteer enforcement officers. If done successfully, this volunteer enforcement program could significantly help MPAs address a challenge that many sites in the region face (i.e. not enough enforcement staff). This program, if effectively implemented, may serve as a regional model by identifying and sharing the process that was implemented to make this program successful. This approach provides an opportunity for financial support that could have broader impact than one country.

Finally, some challenges commonly faced among many sites might be best addressed through a regional approach. This is particularly the case for monitoring (both biological and social). Often times, the challenge in carrying out regular monitoring programs is dealing with a lack of staff and limitations on their availability. To address this issue, we suggest that CaMPAM considers establishing a "roving" support team that could help develop appropriate biological monitoring protocols for a site, and collect and analyze the data. This team could be a mixture of monitoring experts and staff from other sites (as part of a learning/sharing network). This team might work with local site staff in each country to carry out these tasks and also provide the additional numbers and expertise needed to complete annual assessments as well as providing support for data analysis and development of adaptive management options. This approach could allow a decrease in the amount of resources required to help each site collect valuable information on status and trends of marine resources within the MPA, to evaluate MPA effectiveness and to inform adaptive management strategies. The same approach can be carried out for socio-economic monitoring. This approach can also help improve data quality

and accuracy. This approach is already being piloted in the Dutch Caribbean islands and their results can provide insights towards the development of this approach as a model for the region.

## How to Use This Report

This assessment was conducted to collect information from local MPA managers about priority needs for capacity building at the MPA site level. It was conducted using a facilitated self-assessment approach and therefore the information provided is directly based on the opinions and observations of site managers of selected MPAs. Readers should give particular attention to the detailed information provided in the rationale section under each capacity area in the sites chapter, which contains supplementary comments.

It is recommended that this report be used as a source of information on priority capacity needs of selected Caribbean MPAs, that can be used to guide the work of agencies and organizations that contribute to MPA management capacity building in the form of technical support, training, and funding; and by facilitating information sharing and peer-to-peer learning.

The main information captured and optimal uses for this information are listed below:

1. **Regional Summary** - provides an overview of results from all sites. This information should not be used outside of the context of the individual site information, as the methods were not designed to quantitatively compare capacity across sites. Rather, the regional summary provides a quick way to view current management capacity as perceived by site managers, to view most frequently cited capacity needs, and the most frequently-cited preferred capacity building approaches. However, to truly understand these defined capacity scenarios and needs, the site level assessments in the report should also be reviewed.
2. **Site Level Assessment** – Information in this section is provided for each individual site that was assessed through this initiative. Each site chapter includes a summary table of the current capacity at the site as perceived by the site managers. Level of capacity is defined through a tier-based methodology in which lack of full capacity for a specific theme is depicted by tier 1 or 2, and tier 3 depicts full or strong capacity. As mentioned previously this assessment was carried out as a guided self-assessment and therefore the tier selection may not provide the most accurate assessment of the situation. However, details captured within the discussion and presented under rationale can inform users of the local situation, capacity strengths, and challenges. As such, it is recommended that users of this report carefully read through details of the site chapters before assuming certain strengths/needs or challenges purely based on tier selection.

## Background

### Purpose

This assessment is an initiative of NOAA Coral Reef Conservation Program (CRCP) in partnership with the Caribbean Marine Protected Area Management Network and Forum (CaMPAM). The initiative began as a means to support further planning, both internally by NOAA and by CaMPAM, with the findings also expected to be of value to other organizations involved in coral reef conservation, and it sought to update existing information on the capacity needs of MPAs in the region. The consultant team of Meghan Gombos (Sea Change Consulting LLC) and Alejandro Arrivillaga were hired to help facilitate the design and implementation of the assessment. This initiative will be referred to as the CaMPAM MPA Management Capacity Assessment in this report.

The consultant team worked directly with the CaMPAM Executive Team (ET) to design the objectives and methods of this assessment. The CaMPAM ET is made up of individuals from the Gulf Caribbean Fisheries Institute (GCFI), the Caribbean Environment Programme of the United Nations Environment Programme (UNEP-CEP), and the National Oceanic and Atmospheric Administration (NOAA) CRCP, Office of National Marine Sanctuaries (ONMS), International Program Office (IPO) and the CaMPAM coordination staff. Information about the CaMPAM ET can be found at: <http://campam.gcfi.org/CaMPAMTeams.php>

### Assessment Objectives

The consultants met with the CaMPAM Executive Team in November 2010 during the annual GCFI meeting in San Juan, Puerto Rico to refine the objectives of the project and define the geographic scope based the resources available to complete the assessment. The project objectives were defined as follows:

- 1) To review existing information to identify key gaps in MPA management capacity information for countries and MPA sites in the Caribbean Region
- 2) To identify 5-year priority MPA management capacity needs for up to 3 demonstration MPA sites in each of nine Caribbean countries and territories
- 3) To provide key information to CaMPAM and NOAA CRCP about MPA management capacity needs in demonstration sites to guide programmatic planning and services such as training, funding, and technical support.

### Gap Analysis

As a first step in meeting the assessment objectives, the consultant team compiled, reviewed, and prepared an initial gap analysis of existing MPA capacity documents found in Appendix 1. The purpose of the analysis was to look across regional information to identify gaps, and to establish a baseline for this assessment to understand if needs have changed over time. This analysis also aimed at gaining a regional perspective on which countries (and sites) have been most assessed for MPA management capacity, and which have had the least information

collected. Additionally, the analysis aimed at understanding the relevance, in scope and time, of previous CaMPAM efforts. To do this, the consultants reviewed which specific capacity components have been captured in the past, what tools have been used to collect the information, and when previous assessments have taken place.

The gap analysis began with a review of a summary document put together by the CaMPAM Executive Team, which provided an excellent preliminary overview of existing capacity assessment reports. This document provided summaries of several previous assessments including: year, purpose, geographic focus, and methods. Including the assessments from this summary, the consultant team reviewed a total of 26 documents for the gap analysis. Finally, discussions were held with The Nature Conservancy's (TNC) staff in the region about additional MPA management capacity information that has been collected through their efforts to implement the Caribbean Challenge in the past several years. Some of TNC's work has been summarized in reports, though in some cases only raw data is available. The consultant team reviewed the information collected through TNC's efforts, to determine if and how this information could best be utilized for the CaMPAM assessment.

The gap analysis revealed that assessments of management capacity have been conducted previously in several Caribbean countries in past years using diverse methods to capture a wide array of information. Moreover, there seems to be an emphasis on measuring management effectiveness of systems of MPAs or personnel rather than exploring management capacity at the site level.

Several of the assessments noted that the capacity for management is affected by the institutional framework in which the MPA sites are situated, including available financial resources, political will of decision makers, or levels of staffing. On the other hand, when comparing the different tools, it is noted that not all establish clear targets or state desired future conditions. This kind of information is necessary for assessing capacity needs.

Additionally, the concept of management capacity in previously completed assessments varies widely. Some focus on a knowledge base about different aspects of MPAs and the issues facing their managers, such as the knowledge of ecosystem processes, biophysical characteristics, legal issues, and socio-economic setting. Others focus on cross-cutting skills that managers require in order to make plans, make decisions, and implement management practices. For example, decision-making skills, resource prioritization, budget control, project management, adaptive management, stakeholder participation, negotiating skills, or conflict resolution. Even personal traits such as accountability, transparency, or a participatory management style are included in at least one assessment.

As such making broad-based comparisons of information was challenging and would likely not provide an accurate analysis. Therefore, the information reviewed was broken down by the consultant team into a variety of categories to inform the selection of the methodology, including capacity indicators and sites to be assessed. Based on this analysis, the methods developed for this project varied from most other assessments in that it was aimed at capturing detailed information about capacity at the site level based on direct consultation with site managers. This information will add to the growing body of literature about MPAs in the Caribbean and can support further understanding of capacity challenges and ways to address them.



Finally, and most importantly, the existing reports were used to inform the capacity assessments at the country and site level, as a foundation for understanding previously identified management capacity needs, and to assess changes that may have occurred over time. Findings from the gap analysis can be found in Appendix A.

### **Geographic Scope**

The initial findings of the gap analysis helped to inform the selection of countries to carry out the MPA Management Capacity Assessment, as well as to develop the appropriate methodology to meet the objectives. Given limited resources, the number of sites to be assessed was defined in the objectives as up to 3 sites in 9 countries or territories (for a maximum of 27 sites). To determine in which countries or territories the assessment would be carried out, the CaMPAM ET developed the following criteria to rank countries/territories:

- 1) Ecological significance (i.e. health of coral reef ecosystems, provides resilience);
- 2) Commitments to international protected area initiatives (Caribbean Challenge, SPAW Protocol, and/or MAR Fund);
- 3) Readiness (i.e. the country is investing in MPAs as a tool for conservation); and
- 4) Linkages to US jurisdiction reefs (important for assessment funder).

Additionally, the overall need for a capacity assessment and subsequent capacity building support was a key factor in determining country selection. The CaMPAM ET aimed at selecting jurisdictions where existing sites were actively being managed but support was limited, and where capacity building could provide the greatest benefit. Through this process, the CaMPAM ET selected the following countries and territories to conduct the assessment and to achieve the objective of assessing up to twenty-seven sites:

- 1. Bahamas**
- 2. Belize**
- 3. British Virgin Islands**
- 4. Dutch Caribbean (Saba & St. Eustatius specifically)**
- 5. Honduras**
- 6. Grenada**
- 7. Mexico**
- 8. St. Lucia**
- 9. St. Vincent & the Grenadines**
- 10. Turks and Caicos**

Because of the limited number of MPAs in some of these jurisdictions, a total of 10 countries and territories were selected to make up the total number of sites as 27 MPAs.

As a next step, the consultant team made contacts with MPA management agencies in each country to discuss the project and to explore interest in participating in the assessment. Upon agreeing to participate in the project, the MPA agencies were asked to identify up to three specific sites that would be most appropriate for the assessment. Where there was more than one agency with legal authority to manage MPAs in a country, the consultants asked

representatives to collectively decide upon which sites should be included. The following criteria were used by country partners to select sites:

**CRITERIA FOR SITE SELECTION AS PERCEIVED BY JURISDICTIONAL REPRESENTATIVES\***

1. Biological value (high)	2. Conservation viability (high)	3. Degree of threat (moderate- low)
Coral cover	partnerships	AIS presence/absence
Diversity, Species richness, key groups	# active agencies/groups	Sedimentation
Representative habitat	Integrated coastal management plans	Wastewater discharge
Unique habitats and species (endemism)	Ability to leverage funding	Pathogens/disease
Habitat for different lifecycles/ stages	Established monitoring data	Accessibility to: ·Fishing pressure ·Recreational use
Critical ecosystem function	Legal designation	Near shore development
Resilience to climate change	Community support	Vulnerability for climate change

\*this criteria table is modified from the *Hawaii Coral Reef Strategy* (Gombos et al., 2010)

Based on the above stated criteria, the country management agencies identified the following sites to be included in the assessment. The sites chosen were not always the most popular or well-known sites, but were identified as the MPAs that managers felt could most benefit from the capacity assessment and further support.

Country / Territory	Sites Selected
Bahamas	Andros Barrier Reef National Park South Berry Islands Marine Reserve Pelican Cay Land and Sea Park
Belize	Half Moon Caye and Blue Hole Natural Monuments Port Honduras Marine Reserve South Water Caye Marine Reserve

British Virgin Islands	Hans Creek Fisheries Protected Area Horseshoe Reef Fisheries Protected Area Wreck of the Rhone Marine Park
Dutch Caribbean	Saba Marine Park St. Eustatius National Marine Park
Grenada	Molinière/Beauséjour Marine Protected Area Sandy Island - Oyster Bed Marine Protected Area
Honduras	Monumento Natural Marino Archipiélago Cayos Cochinos Zona de Protección Especial Marina Sandy Bay - West End Zona de Protección Especial Marina Turtle Harbour - Rock Harbour
Mexico	Parque Nacional Arrecife Alacranes Parque Nacional Arrecifes de Xcalak Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc
St. Lucia	Pitons Management Area Point Sable Environmental Protection Area Soufriere Marine Managed Area
St. Vincent & the Grenadines	South Coast Marine Park Tobago Cays Marine Park
Turks and Caicos Islands	Columbus Landfall National Park Princess Alexandra Land and Sea National Park West Caicos Marine National Park

## Methods

From the gap analysis, the CaMPAM ET and consultants also reviewed existing capacity assessment tools and capacity information that could be most useful to collect for each site. Additionally, the foundation for the methodology discussion was the recently developed NOAA Coral Reef Conservation Program MPA Management Assessment Checklist. This Checklist was developed as a simple tool to assess the management capacity of MPAs in priority coral reef sites in U.S. jurisdictions and non-U.S. areas important to the NOAA CRCP and its partners. It was designed to allow the CRCP to better understand the needs for on-the-ground MPA management, and help managers build and/or maintain management capacity necessary for successfully achieving their MPA goals and objectives. It should also be noted that the NOAA Checklist tool was NOT designed to evaluate MPA effectiveness.

The CaMPAM ET reviewed the capacity information collected through the NOAA MPA Checklist as well as information collected through other standardized assessment tools. These tools

included the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology and other independently designed tools previously used in the Caribbean. As a result of this review, the CaMPAM ET determined that the NOAA MPA Checklist provided a good foundation of information to be collected, but that there were additional capacity areas that that were not in the checklist yet were critical to evaluating capacity in the Caribbean region. The consultants used input from other methods to expand the NOAA MPA Checklist, using the same general question format.

As such, an expanded checklist was developed mainly using the format developed in the NOAA MPA Checklist format. The checklist was designed with a tiered approach with the first tier reflecting little to no capacity and the third tier reflecting high capacity in the assessment area. While not absolute, it's probable that MPAs that are recently established or just beginning to implement management activities will normally rank at tier 1 or 2 for most assessment categories. Additionally, MPAs that are more mature and that have been carrying out management activities for some time are more likely to rank at tier 2 or 3. Again, these previous statements are not meant to be taken as absolute but merely to support a general understanding of the tiered system. The NOAA MPA Checklist, along with a users guide for the Checklist can be found at: <http://coralreef.noaa.gov/resources/publicationsdata/> The final survey tool (including tier descriptions) is shown below and can be used to better understand the answers provided in the site assessment results.

### CaMPAM MPA Capacity Assessment Survey Tool

SITE DESIGNATION AND DESIGN:	
QUESTION 1a: Based on the official designation of the site, what is the purpose of the MPA?	
QUESTION 1b: Do the MPA management plan objectives reflect the site designation purpose?	
Section 1. Questions 2 to 21: Which of the following statements best describes the status of your MPA with respect to the different management capacity items?	
MANAGEMENT CAPACITY OF THE MPA:	
QUESTION 2a: Management Planning	
Tier 1	Some management activity being implemented, but no management plan in place
Tier 2	Some management activity being implemented and management plan developed
Tier 3	Approved management plan that is being implemented
QUESTION 2b: Why are you in this tier? (Do you have a management framework instead of a management plan?)	
QUESTION 2c: What are your challenges and needs to move into a higher tier? (IF FUNDING, FOR WHAT WOULD YOU USE THE FUNDS?)	
<i>Note: Questions 2b and 2c will be repeated in all other questions up to Q21</i>	
QUESTION 3: Ecological Network Development	
Tier 1	Site is either not associated with a network or is part of an ecological MPA network but is not designed to support network goals and management is not coordinated across the network

Tier 2	Site is part of an ecological MPA network and site is designed to support the goals of an ecological network but management is not coordinated across the network
Tier 3	Site is part of an ecological MPA network, site is designed to support the goals of an ecological network and site management coordinated with other sites across the ecological network
<b>QUESTION 4: Governance</b>	
Tier 1	Site has been legally established or is under equivalent customary tenure or other form of community-based protection status, but there are few or no official or community based rules and regulations in place supporting the MPA and its management plan
Tier 2	Laws or customary instruments for the establishment of the MPA are in place, and official or community based rules or regulations governing some specific activities included in objectives of the site management plan are also in place
Tier 3	Clearly defined laws or customary instruments and official or community based rules and regulations governing all specific activities included in the objectives of the site management plan are in place
<b>QUESTION 5: On-Site Management (This is staff that are geographically on-site)</b>	
Tier 1	No management personnel assigned to site and/or little or no formalized community oversight
Tier 2	Some management personnel assigned to site or some formalized community oversight
Tier 3	Full-time site manager and programmatic personnel assigned to site or local community based management leader in place that has been formally designated and accepted and is able to dedicate sufficient time to the management of the site
<b>QUESTION 6: Enforcement</b>	
Tier 1	Few or no established rules and regulations exist or there is little or no enforcement of existing rules and regulations
Tier 2	Inconsistent enforcement of rules and regulations
Tier 3	Active and consistent enforcement of rules and regulations
<b>QUESTION 7: Boundaries</b>	
Tier 1	Lack of clearly defined boundaries and/or zones
Tier 2	Clearly defined boundaries and/or zones
Tier 3	Clearly defined boundaries and zones and information on boundary locations and permitted activities in various zones (if applicable) provided to public and MPA stakeholders
<b>QUESTION 8a: Biophysical Monitoring</b>	
Tier 1	Little or no existing biophysical monitoring activity
Tier 2	Existing biophysical monitoring program
Tier 3	Data produced from biophysical monitoring program being evaluated and used to inform management decisions
<b>QUESTION 8b: Does your monitoring program measure progress toward meeting bio-physical objectives as stated in your management plan?</b>	
<b>QUESTION 8c: Does your program use a standard biological monitoring methodology?</b>	
YES / NO If yes, which methodology?	

<b>QUESTION 9a: Socioeconomic Monitoring</b>	
Tier 1	Little or no existing socioeconomic monitoring activity
Tier 2	Existing socioeconomic monitoring program
Tier 3	Data produced from socioeconomic monitoring program being evaluated and used to inform management decisions
<b>QUESTION 9b: Does your monitoring program measure progress toward meeting socio-economic objectives stated in your management plan?</b>	
<b>QUESTION 9c: Does your program use a standard socio-economic monitoring methodology?</b>	
YES / NO	If yes, which methodology?
<b>QUESTION 10a: MPA Effectiveness Evaluation and Adaptive Management</b>	
Tier 1	Little or no evaluation of MPA effectiveness
Tier 2	MPA effectiveness evaluated but no ongoing effectiveness monitoring and evaluation program in place
Tier 3	MPA effectiveness evaluated and effectiveness monitoring and evaluation program in place with findings being applied to adapt management strategies
<b>QUESTION 10b: Does your program use a standard effectiveness monitoring methodology?</b>	
YES / NO	If yes, which methodology?
<b>QUESTION 11: Stakeholder Engagement</b>	
Tier 1	Little or no community and stakeholder engagement in management planning
Tier 2	Community and stakeholder engagement in management planning
Tier 3	Community and stakeholder engagement in management planning and implementation of site management efforts
<b>QUESTION 12a: Financing</b>	
Tier 1	Little or no reliable source of funding identified to support management activities
Tier 2	Existing funding for management activities
Tier 3	Sustainable finance plan being implemented that provides long term sustainable funding mechanisms
<b>QUESTION 12b: Does your program use a standard sustainable finance mechanism?</b>	
YES / NO	If yes, which mechanism?
<b>QUESTION 13a: Outreach and Education</b>	
Tier 1	Little or no ongoing outreach and education activities exist
Tier 2	Ongoing outreach and education activities in support of the MPA
Tier 3	Existence of an outreach and education program with various activities and strategies focused on the MPA that helps achieve the MPA's goals and objectives
<b>QUESTION 13b: Does your program focus on a specific audience?</b>	
YES / NO	If yes, which audience?
<b>QUESTION 14: Conflict Resolution Mechanisms</b>	
Tier 1	Little or no existing mechanism to resolve conflict with MPA stakeholders

Tier 2	Mechanism for conflict resolution with MPA stakeholders is available but is not being used and stakeholders are not aware of this mechanism
Tier 3	Mechanism for conflict resolution is available and MPA stakeholders are aware of and use this mechanism
<b>QUESTION 15: Resilience to Climate Change</b>	
15a. Are you familiar with climate change resilience principles? YES / NO	
Tier 1	Little or no consideration of climate change resilience in the management of the MPA.
Tier 2	Management includes actions intended to increase the resilience of coral reef resources to the effects of climate change
Tier 3	Site is designed to increase resilience of coral reef resources to the effects of climate change and management includes actions necessary to avoid or minimize impacts and spread the risk due to climate change
<b>QUESTION 16: Alternative Livelihoods</b>	
Tier 1	Socioeconomic assessment of the impacts of MPA regulations on resource users has not been completed and no alternative livelihood opportunities have been developed for stakeholders negatively affected by MPA regulations
Tier 2	Socio-economic assessment of the impacts of the MPA on resource users has been completed but no alternative livelihood opportunities have been developed for stakeholders negatively affected by MPA regulations
Tier 3	Socio-economic assessment of the impacts of the MPA on resource users has been completed and alternative livelihood opportunities for have been developed
<b>QUESTION 17a: Fisheries Management</b>	
Tier 1	Site specific fisheries assessment has not been conducted
Tier 2	Site specific fisheries assessment has been conducted but no fisheries management plan is developed
Tier 3	Fisheries management plan is developed
QUESTION 17b: Does your program use a standard fisheries assessment methodology? YES / NO If yes, which methodology?	
<b>QUESTION 18a: Integrated Coastal Management (APPLICABLE to all coastal/ near shore that could be impacted)</b>	
Tier 1	Coastal/upland threats in adjacent watershed area(s) have not been assessed
Tier 2	Coastal/upland threats in adjacent watershed area(s) have been assessed but there is no coordination with coastal terrestrial management agencies to address land based threats
Tier 3	There is on-going coordination of management efforts with relevant land management agencies (e.g. coastal management, environmental protection, agriculture, forestry) to abate land based threats that have an impact on the MPA
<b>QUESTION 19: Sustainable tourism (if applicable)</b>	
Tier 1	Assessment of tourism activities and sustainable tourism options has not been conducted
Tier 2	Assessment of tourism activities and sustainable tourism options has been completed
Tier 3	Tourism activities in the MPA are managed and conducted according to a sustainable tourism plan
<b>QUESTION 20: Organizational Management</b>	

Tier 1	MPA staff capacity have not been assessed
Tier 2	MPA personnel is limited in terms of numbers or abilities**
Tier 3	MPA personnel is adequate and has the proper skills and knowledge to effectively carry out management
<i>** if so, is it because of funding or because of no people with the proper skills are available?</i>	
<b>QUESTION 21a: Partnerships/Coordination</b>	
Tier 1	Management of the site is carried out by one agency with little or no coordination with other organizations
Tier 2	Informal partnerships exist with organizations who support MPA management activities (e.g. outreach, monitoring, etc)
Tier 3	There is a formally coordinated group of the most important agencies and organizations that participate in site management and have defined roles and responsibilities
<b>Section 2., Questions 22 to 24: Additional questions about management at your site</b>	
QUESTION 22a: Have you done an economic valuation of your sites resources? YES / NO	
QUESTION 22b: Is this important to your site? YES / NO	
QUESTION 22c: If so, how will you use the information specifically?	
QUESTION 23: Do you have a process and/or team to respond to emergency threats (invasive species outbreak, ship grounding, bleaching, etc.)? YES / NO	
QUESTION 24a: Are you familiar with ecosystem based management principles? YES / NO	
QUESTION 24b: Have you considered ecosystem based management principles in the design and management planning of the MPA? YES / NO	
QUESTION 24c: (if yes) Please tell me more about the EBM principles used in designing and management planning for the MPA?	
<b>QUESTION 25a: Public/Community Support:</b>	
How would you rate the level of public/community support for the management of the site? High / Medium / Low	
QUESTION 25b: Why did you rate public/community support for management of the site at this level?	
<b>QUESTION 26a: Government Support:</b>	
How would you rate the level of support by government for the management of the site? High / Medium / Low	
QUESTION 26b: Why did you rate level of government support for management of the site at this level?	
<b>QUESTION 27a: Regional /International Support:</b>	
Which regional or international organizations support the site?	



QUESTION 27b: How do these organizations support the site?

**CAPACITY BUILDING SUPPORT:**

QUESTION 28: Do you have a capacity building plan for training of personnel? YES / NO

QUESTION 29: Based on the assessment areas (threats and management capacity), what are the top three (ranked) capacity building priorities for the MPA over the next 5 years? Where #1 is the most important.

QUESTION 30a: Please prioritize (1-3) which capacity building approaches best address your top 3 priority capacity needs? (can select multiple answers – 1 = highest priority)

\_\_\_\_\_training \_\_\_\_\_technical support \_\_\_\_\_learning exchanges \_\_\_\_\_higher  
education courses \_\_\_\_\_more staff \_\_\_\_\_Other\_\_\_\_\_

QUESTION 30b: Please explain:

QUESTION 31: Where you stated you are at tier 3 – are you able / willing to become a mentor for other sites (for these skills)? YES / NO

### ***Approach***

To carry out the MPA Capacity Assessment, the CaMPAM ET agreed on the following general approach to be facilitated by the consultants:

1. *Desk Review* – keeping in mind the time constraints of MPA managers, the consultant team first reviewed existing capacity assessment reports or other relevant information that could inform results of this effort for each specific country and selected sites (e.g. management plans, capacity building plans, and national system plans). This information was used to prepare for discussions with site managers.
2. *Site Visits* - Site visits were conducted in most countries/jurisdictions (up to 3 MPAs per country) where the consultants met with focus groups of MPA managers and site staff to complete the survey for each selected site. The surveys were completed through interviews where detailed information on each assessment area was collected. Finally, where possible, the consultant team also met with other country or regional experts that support management of the site and/or that could offer insights to capacity challenges and needs.

All site interviews were carried out between January and May 2011. Most interviews were conducted by Alex Arrivillaga and/or Meghan Gombos. In the British Virgin Islands, CaMPAM partners Jeanne Brown and Cindy Rolli of The Nature Conservancy conducted the site visits and interviews with guidance from the consultant team. Additionally, for Saba and St. Eustatius, annual capacity assessment reviews are already conducted through the Dutch Caribbean Nature Alliance (DCNA). As such, the DCNA preferred to fill out the surveys with the existing information and follow-up calls with site managers and consultants were arranged to fill in the gaps.

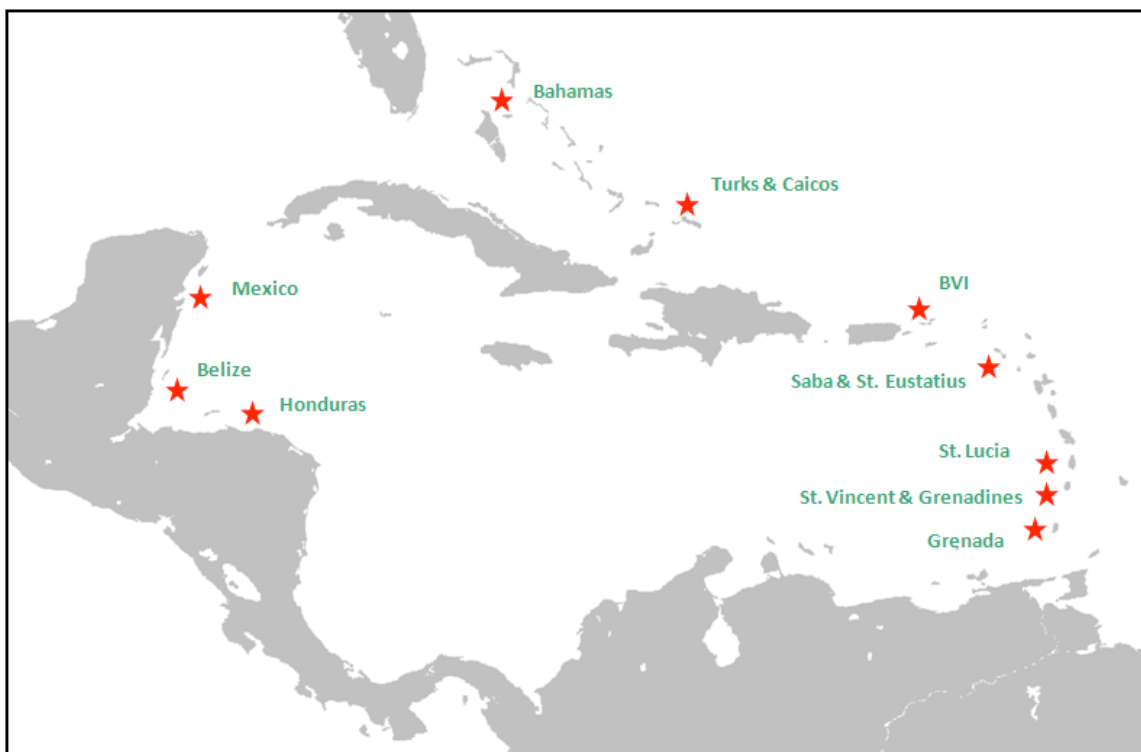
3. *Report Development* – Upon completion of the site visits, the consultants compiled a site report that summarizes the results from each MPA, including the capacity strengths, capacity challenges, and priority capacity needs at each site. The site reports were sent back to site managers for review and edits prior to finalization. This step enabled managers to correct any information that may have been captured incorrectly or was sensitive and should not be made public.

### **Note on Methodology**

The assessment tool was developed as a modification of the NOAA Coral Reef Conservation Program MPA Management Assessment checklist. This tool is intended to be a guided self-assessment. As such, the consultants carried out an interview process where they read through each tier with site managers, and then allowed managers to self-select which tier was most appropriate for the site situation. Each question was followed by a more thorough discussion about why that tier was selected. Where there were perceived discrepancies by the consultant with the tier selection and the discussion information, questions were raised about possibility of changing tiers. However, consultants were diligent about maintaining the tier selection as the site managers perceived themselves. Nevertheless, notes from the discussion and “rationale”

narratives were captured and included in the report. While this approach does allow subjectivity in tier interpretation and selection, it also represents site management assessment of their situation. ***It is therefore important that those using this report thoroughly read the rationale details under each assessment category to get a more complete understanding of the capacity situation and not assume the tier selection is absolute.***

## Regional Summary Results



This section provides a summary of the 27 MPA sites that were assessed in 10 Caribbean countries for this project. It should be noted however, that this assessment was not designed to provide “regional” results or compare information across sites. Rather the assessment was focused on gathering site-specific information and management capacity needs. Therefore, while these summary results provide a quick glance of the collective information gathered, they should be used only as basic guidelines for making regional analyses. Much more detailed information is provided, and should be reviewed, in site assessment chapters to help address capacity needs.

The section is broken down by the following categories:

- MPA Management Capacity Priority Needs
- Current MPA Management Capacity
- Priority Capacity Building Approaches
- Summary Conclusions and Lessons Learned

### MPA Management Capacity Priority Needs

This first section is focused on the priority capacity building needs identified by regional MPA managers.

**Figure 1: Number of sites that identified capacity area as a priority need**

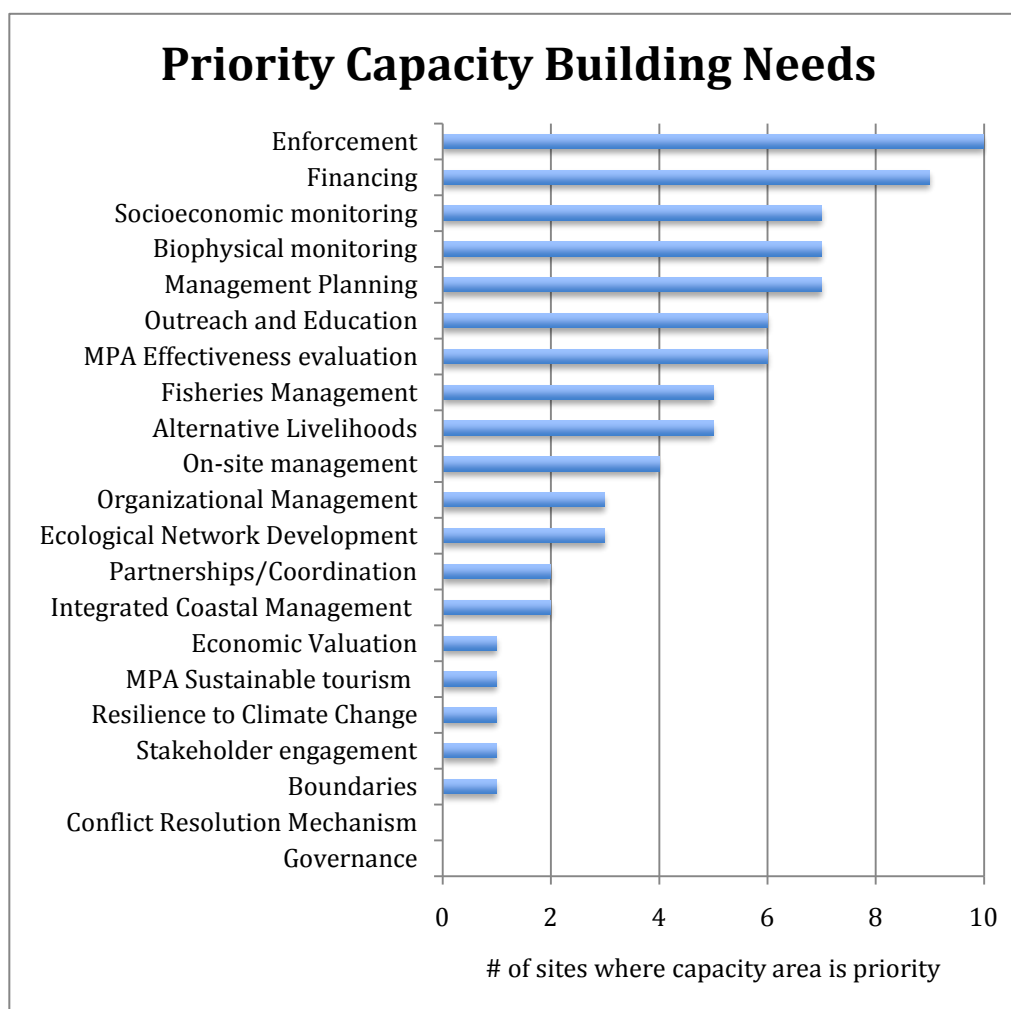


Figure 1 shows that the priority MPA Management Capacity Needs that were most often as identified by managers were:

1. Enforcement (10 sites)
2. Financing (9 sites)
3. Management planning, Bio-physical monitoring, Socio-economic monitoring (7 sites)
4. MPA effectiveness evaluation, and Outreach and education (6 sites)

### **Current MPA Management Capacity**

This section is focused on current capacity as identified by MPA management.

**Figure 2. Perceived “Current MPA management capacity” (tier most frequently reported per capacity area)**

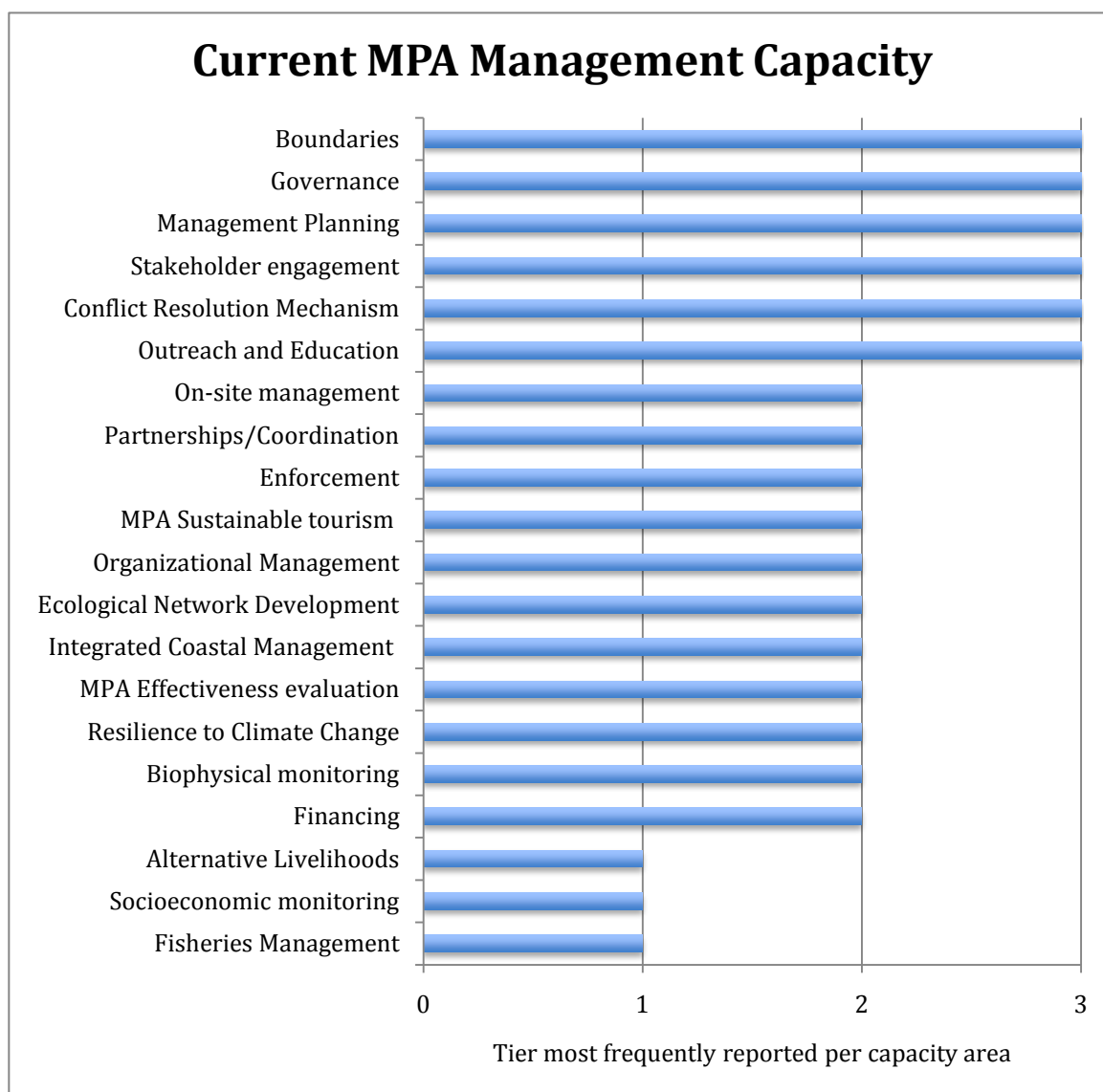


Figure 2 demonstrates the perceived current capacity of sites by their managers and implies which areas of capacity are currently greatest (mode of 3) and which areas of capacity are currently the lowest (mode of 1)

Figure 3. Percent of sites reporting high/ medium/ low for level of public support for the MPA

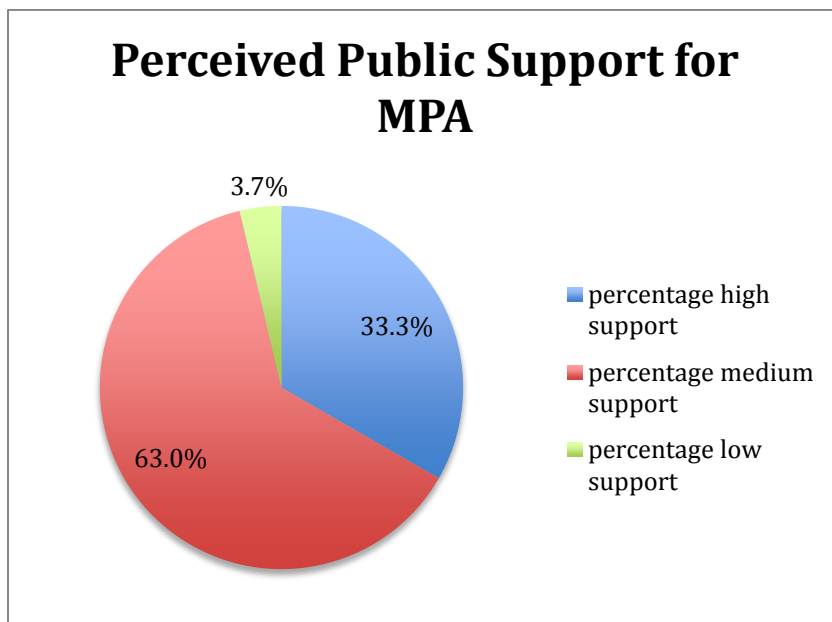
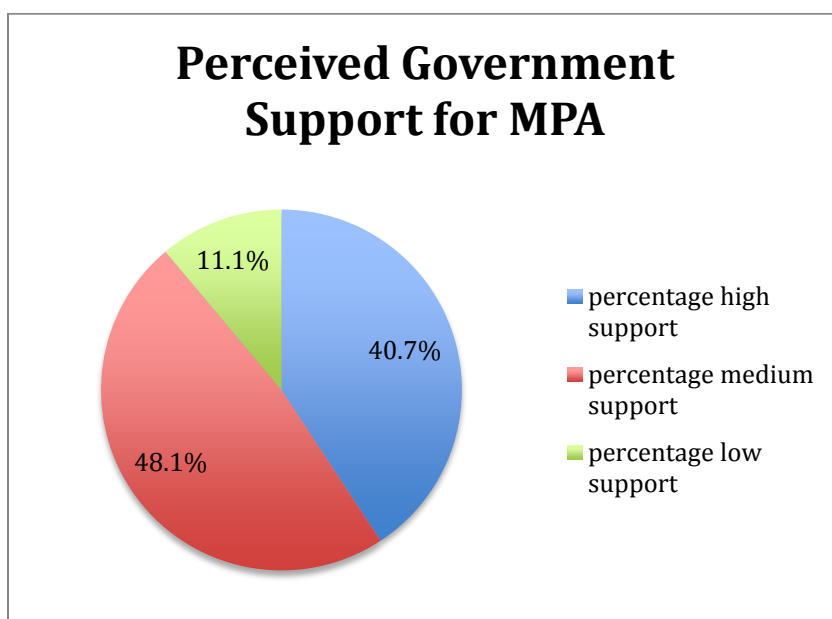


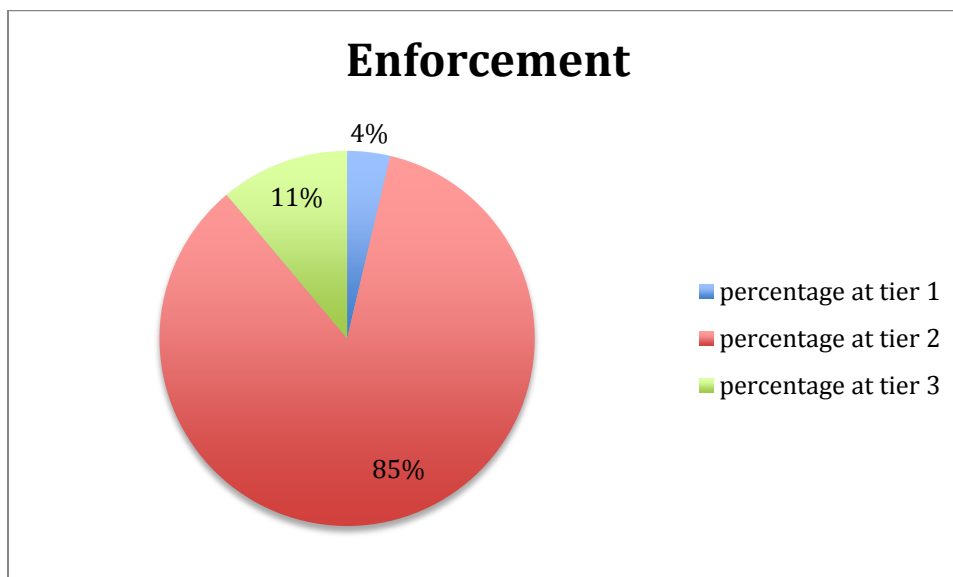
Figure 4. Percent of sites reporting high/ medium/ low for level of government support for the MPA



This rest of this section will focus only on these top seven capacity priority needs. We will review in more detail current capacity of all sites (as stated by tier level) for each capacity area. This detailed information about current “regional capacity” is coupled with a list of specific sites that the site managers identified as having stated high capacity in that area and thus may serve as “regional mentors”.



**Figure 5. Overall perception of tiers achieved by sites for the capacity area “enforcement”**

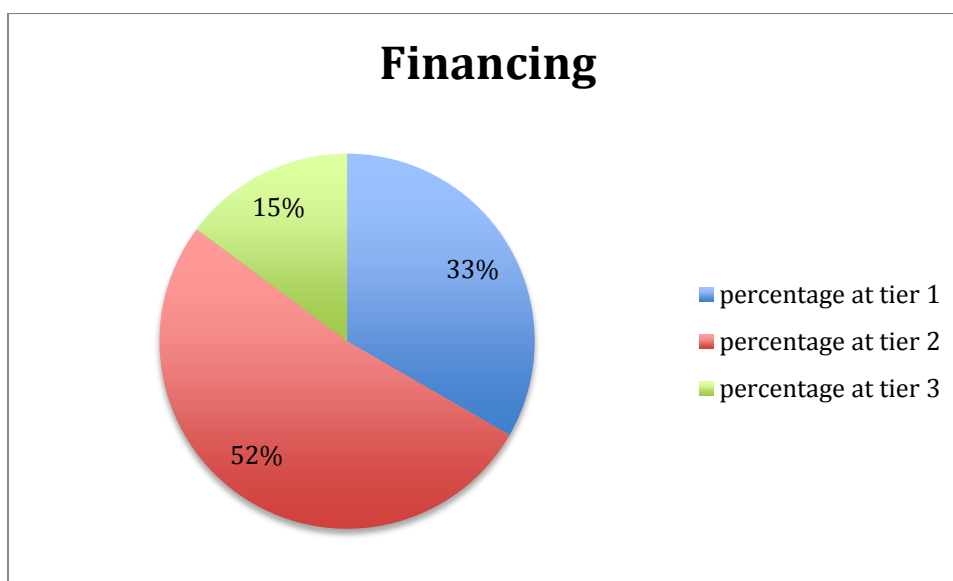


**Possible Mentor Sites for Enforcement**

Identified as having strong capacity (i.e. tier 3 in assessment)

- Tobago Cays Marine Park (Saint Vincent & the Grenadines)
- Port Honduras Marine Reserve (Belize)
- Monumento Natural Marino Archipiélago Cayos Cochinos (Honduras)

**Figure 6. Overall perception of tiers achieved by sites for the capacity area “financing”**

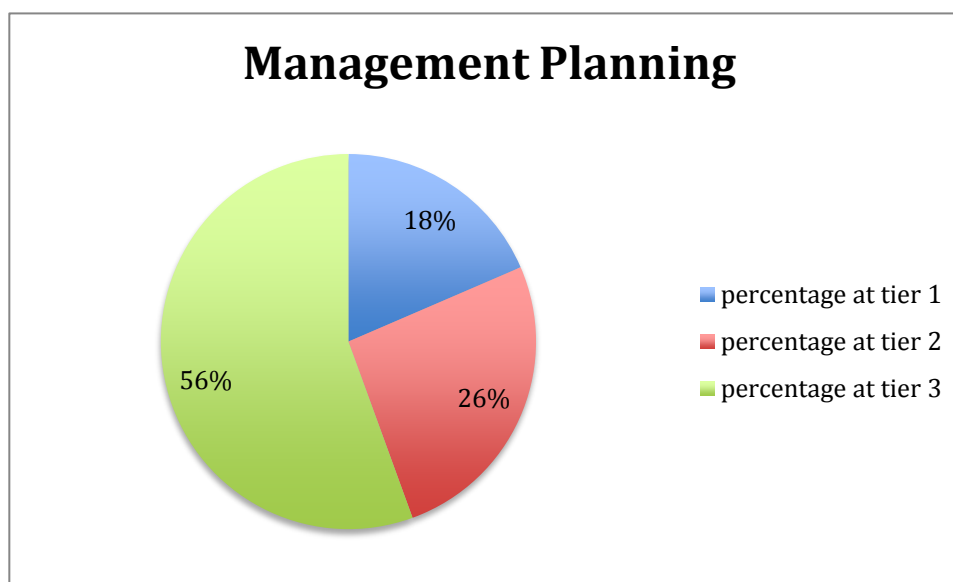


**Possible Mentor Sites for Financing**

Identified as having strong capacity (i.e. tier 3 in assessment)

- Tobago Cays Marine Park (Saint Vincent & the Grenadines)
- South Water Caye Marine Reserve (Belize)
- Monumento Natural Marino Archipiélago Cayos Cochinos (Honduras)
  
- Wreck of the Rhone Marine Park (British Virgin Islands)

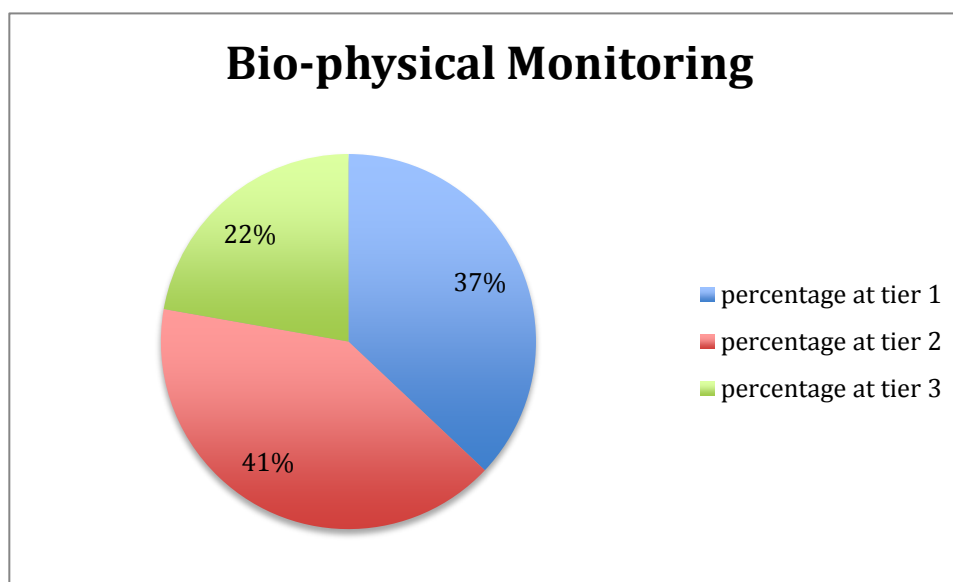
**Figure 7. Overall perception of tiers achieved by sites for the capacity area “management planning”**



**Possible Mentor Sites for Management Planning**  
Identified as having strong capacity (i.e. tier 3 in assessment)

- Moliniere-Beausejour MPA (Grenada)
- Tobago Cays Marine Park (Saint Vincent & the Grenadines)
- Pitons Management Area (St. Lucia)
- Soufriere Marine Managed Area (St. Lucia)
- Columbus Landfall National Park (Turks and Caicos Islands)
- Princess Alexandra Land and Sea National Park (Turks and Caicos Islands)
- West Caicos Marine National Park (Turks and Caicos Islands)
- Parque Nacional Arrecife Alacranes (Mexico)
- Parque Nacional Costa Occidental de Isla Mujeres Punta Cancún y Punta Nizuc (Mexico)
- Port Honduras Marine Reserve (Belize)
- South Water Caye Marine Reserve (Belize)
- Half Moon Caye Reef (Belize)
- Monumento Natural Marino Archipiélago Cayos Cochinos (Honduras)
- St. Eustatius Marine National Park (Dutch Caribbean)
- Wreck of the Rhone Marine Park (British Virgin Islands)

**Figure 8. Overall perception of tiers achieved by sites for the capacity area “bio-physical monitoring”**

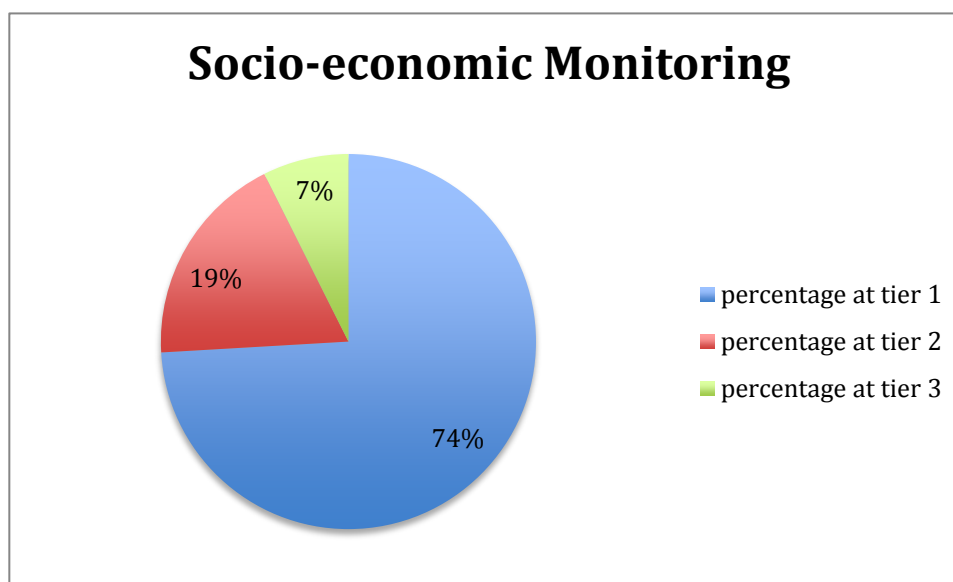


**Possible Mentor Sites for Bio-physical Monitoring**

Identified as having strong capacity (i.e. tier 3 in assessment)

- Parque Nacional Arrecifes de Xcalak (Mexico)
- Parque Nacional Costa Occidental de Isla Mujeres Punta Cancún y Punta Nizuc (Mexico)
- Port Honduras Marine Reserve (Belize)
- South Water Caye Marine Reserve (Belize)
- Half Moon Caye Reef (Belize)
- St. Eustatius Marine National Park (Dutch Caribbean)

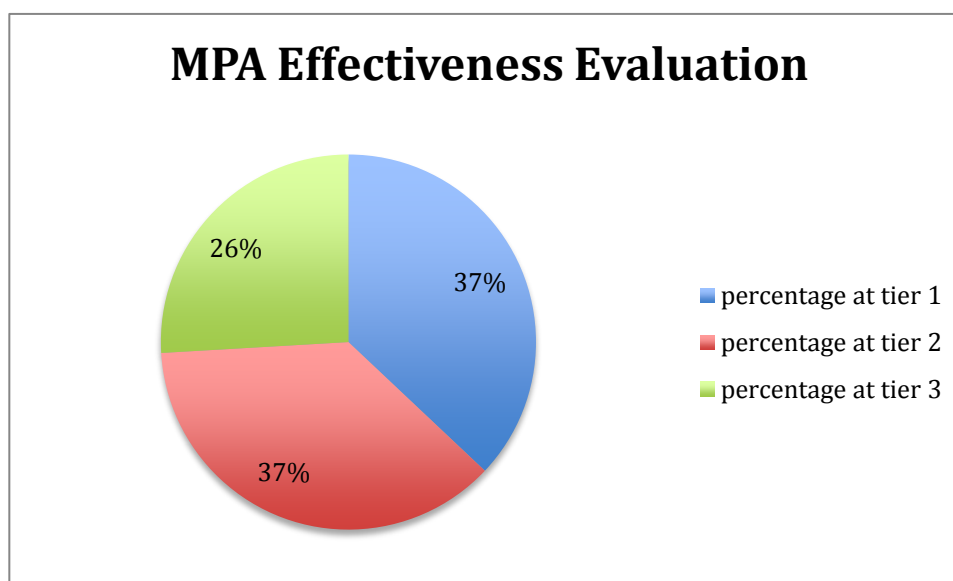
**Figure 9. Overall perception of tiers achieved by sites for the capacity area “socio-economic monitoring”**



**Possible Mentor Sites for Socio-economic Monitoring**  
Identified as having strong capacity (i.e. tier 3 in assessment)

- Pitons Management Area (St. Lucia)
- Wreck of the Rhone Marine Park (British Virgin Islands)

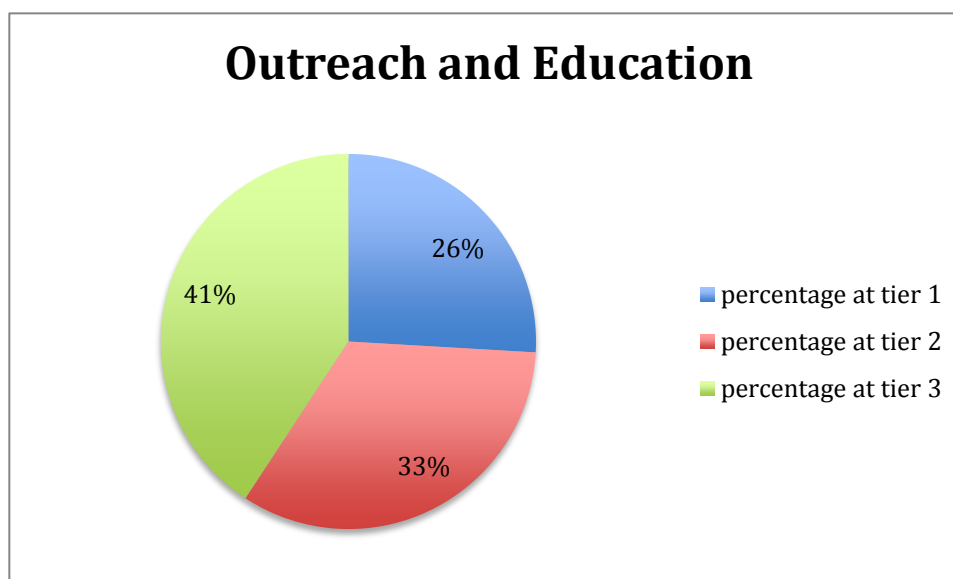
**Figure 10. Overall perception of tiers achieved by sites for the capacity area “MPA effectiveness evaluation”**



**Possible Mentor Sites for MPA Effectiveness Evaluation**  
Identified as having strong capacity (i.e. tier 3 in assessment)

- Tobago Cays Marine Park (Saint Vincent & the Grenadines)
- Pitons Management Area (St. Lucia)
- Parque Nacional Arrecife Alacranes (Mexico)
- Port Honduras Marine Reserve (Belize)
- Half Moon Caye Reef (Belize)
- Monumento Natural Marino Archipiélago Cayos Cochinos (Honduras)
- Saba Marine National Park (Dutch Caribbean)

**Figure 11. Overall perception of tiers achieved by sites for the capacity area “outreach and education”**



**Possible Mentor Sites for Outreach and Education**  
Identified as having strong capacity (i.e. tier 3 in assessment)

- Princess Alexandra Land and Sea National Park (Turks and Caicos Islands)
- West Caicos Marine National Park (Turks and Caicos Islands)
- Parque Nacional Arrecifes de Xcalak (Mexico)
- Parque Nacional Costa Occidental de Isla Mujeres Punta Cancún y Punta Nizuc (Mexico)
- Port Honduras Marine Reserve (Belize)
- Parque Marino Sandy Bay, Roatan, Islas del a Bahía (Honduras)
- Turtle Harbour / Rock Harbour, Utila, Islas de la Bahía (Honduras)

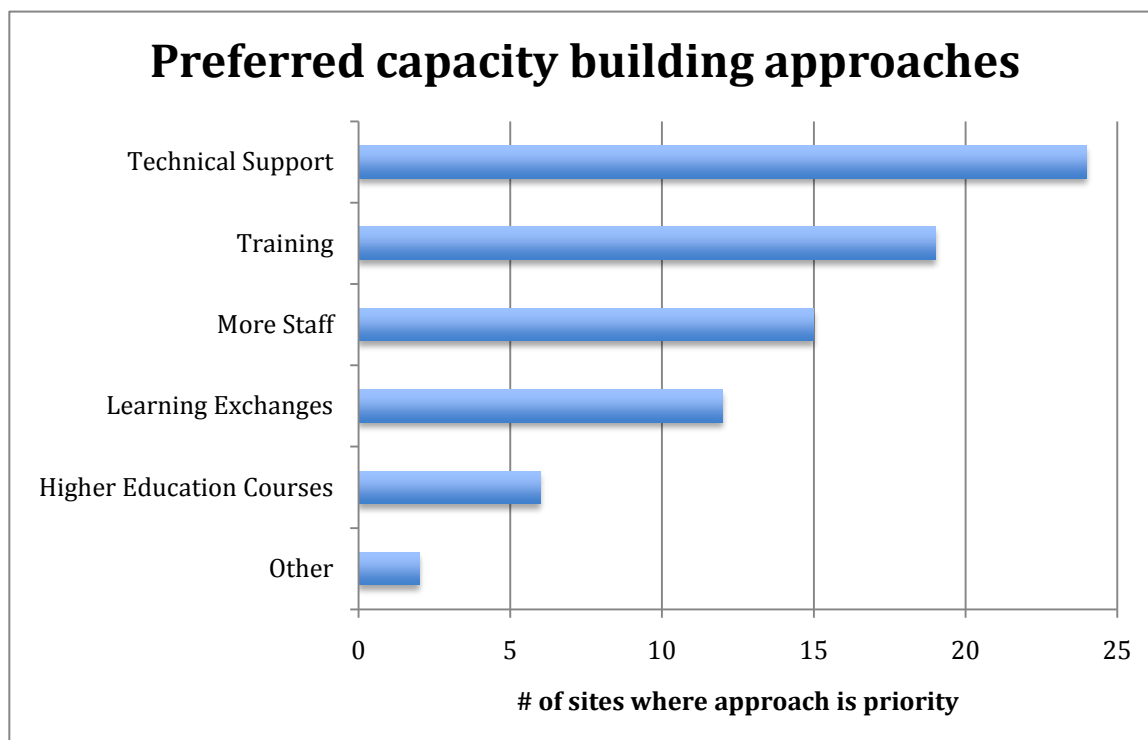
- Monumento Natural Marino Archipiélago Cayos Cochinos (Honduras)
- Saba Marine National Park (Dutch Caribbean)
- St. Eustatius Marine National Park (Dutch Caribbean)
- Wreck of the Rhone Marine Park (British Virgin Islands)

### Priority Capacity Building Approaches

This section focuses on the type of capacity building approaches that were most often noted as a priority by site managers. MPA managers were asked to provide three preferred management capacity building approaches for their site. Among the options were:

1. Training
2. Technical support
3. Learning exchanges
4. Higher education courses
5. More staff
6. Other

**Figure 12. Number of sites that identified each type of capacity building approach as priority**



\* Other priorities identified are “internships” and “financing”

Figure 12 shows that at a regional scale the preferred capacity building approaches in order of priority are 1) technical support, 2) training, 3) more staff, 4) learning exchanges, and 5) higher education courses.

### Summary Conclusions and Lessons Learned

- Some sites identified their current capacity at a tier 3 for specific capacity areas, while also identifying those areas as a priority capacity building needs. The reasons for this may vary and are not completely understood. In some cases, the capacity is normally high but the current situation has created a need for support, while in other cases more support is needed to maintain high capacity. In all cases, site managers felt that tier three was appropriate. It also may relate to the importance placed on that capacity as a core task that needs the strongest capacity possible. Therefore, it is important to read the detailed “rationale” narrative for each site specifically before assuming that tier three necessarily means no capacity support is needed.
- In many cases, “MPA effectiveness evaluation” was often understood to mean management effectiveness evaluation only with little or no regard for biological or socio-economic factors. Additionally, many sites have little to no bio-physical monitoring activity and specifically no numerical indicators of success for conservation of natural resources. Finally, even fewer sites were measuring social indicators of success such as knowledge, attitudes, and perceptions from local stakeholder about the MPA. Overall, the effort explores “MPA Effectiveness” with quantifiable indicators that provide a holistic view (i.e. biological, social, and management); the success of any site in reaching its goals was rare.



## Site Assessment Results

The following section provides the survey results for each site. Surveys were carried out through a facilitated self- assessment approach and therefore all of the information provided is directly based on the observations and opinions of site managers of the selected MPAs described. Unless otherwise noted, representatives from the agency or organization that has legal responsibility for managing the site were interviewed to complete the assessment questions. The section is organized by country/jurisdiction and then by MPA site. Information presented for each site includes:

- **Site name and background information:** Each site chapter begins with a brief description of the name and background information that includes the country where the MPA is located, the year the site was established, size of the site, the name and contact information for the agency that manages the site, natural and cultural resources found in the site, the primary uses in the site, and the main threats to the site resources. Up to date contact information for management agencies can be found in that CaMPAM MPA database at: <http://campam.gcfi.org/CaribbeanMPA/CaribbeanMPA.php>
- **Site map** – a map of each site was provided by the management agency and provided with a caption of the type of map if applicable (e.g. zoning map).
- **Management capacity summary** - Each site chapter provides a summary table of the current capacity at the site as perceived by the site managers. Level of capacity is defined through a tier based methodology in which lack of full capacity for a specific theme are demonstrated by tier 1 & 2, and full or strong capacity is demonstrated by tier 3. While this summary provides a good starting point to understand the general capacity at a site, the detailed notes provided under the rationale section of each site provide a much more thorough picture of the situation.
- **Rationale for each capacity area** – Under each assessment area, detailed notes were captured about why site managers selected a particular capacity tier for that assessment area. For sites labeled at tier 1 or 2, information is provided regarding what the site managers feel that they need to build capacity and advance to a higher tier. This information provides insights into capacity strengths, gaps, and core challenges, and needs.
- **Capacity building priorities** – Upon completing the questions about current management capacity, site management identified their top three capacity building needs over the next 3-5 years. Additionally, they were asked to identify their preferred approach for capacity building. Information on these priorities is provided in this section.
- **References** – Any documents that were provided by site managers as references to support the assessment results and used by the consultants to fill in additional information are cited at the end of the site chapter.

## The Bahamas

**Dates of Interviews:** March 7-11, 2011

**Interviewer:** Meghan Gombos

**Agencies/Organizations Interviewed:** The Bahamas National Trust, The Bahamas Department of Marine Fisheries, Friends of the Environment, The Nature Conservancy Bahamas Country Program



## Andros Barrier Reef National Park

**Name:** Andros Barrier Reef National Park - this site is actually two sites (Northern & Southern Marine Parks) near one another that are managed as one site. There is an interest in expanding these sites to connect them.

**Country:** The Bahamas

**Year Established:** 2002

**Size:** 1,157.7 km<sup>2</sup>

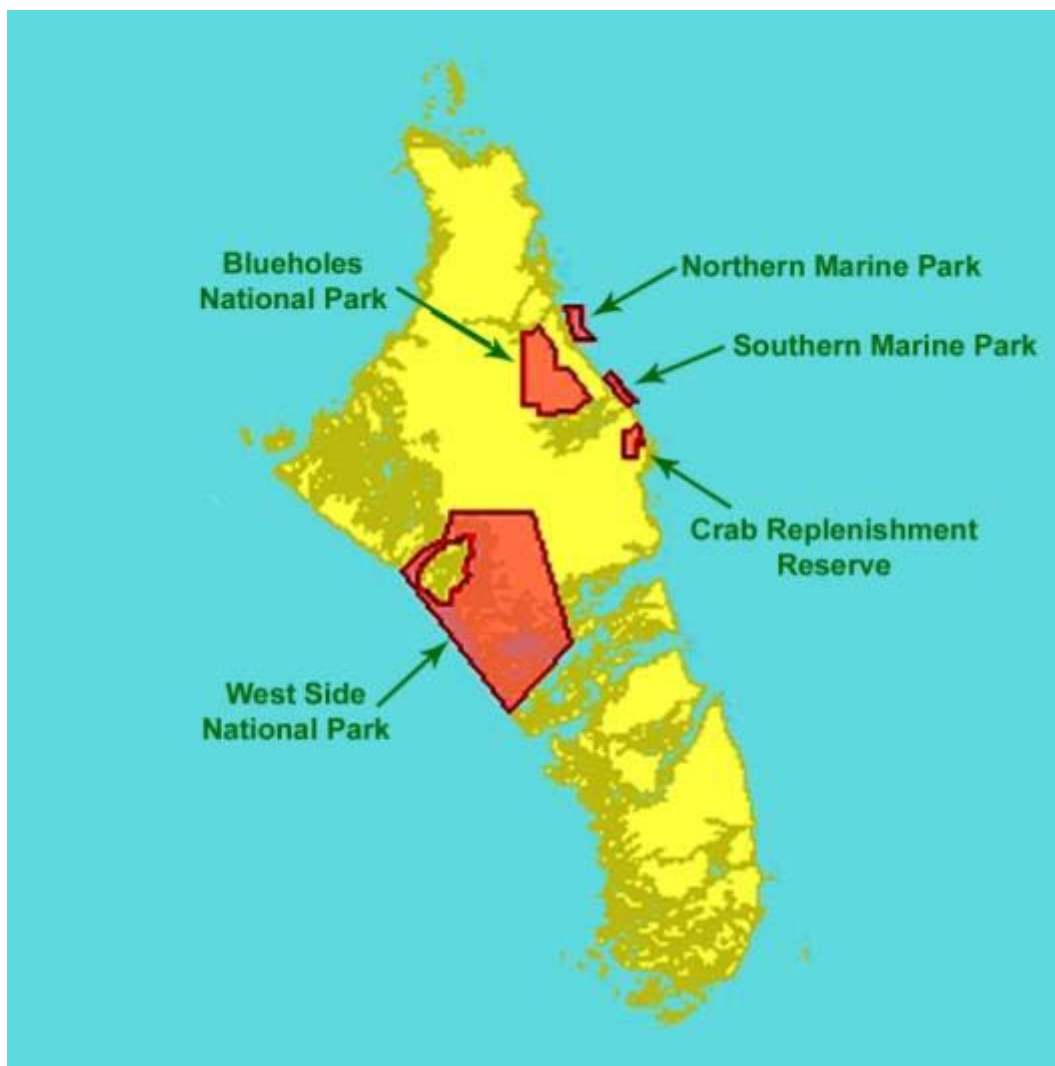
**Management Agency:** The Bahamas National Trust (established by parliament as a non-governmental organization in 1959 and charged with conservation and preservation of places of historic interest and natural beauty)

**Site Resources:** Andros has the third largest barrier reef in the world. These two parks were established to help preserve parts of this valuable reef ecosystem. It protects 64,843 acres of significant areas of reef associated marine habitats. They help to replenish fisheries stocks in surrounding areas and also support marine-based ecotourism. The Parks are composed of an area of seabed on the northeastern side of Andros. Geographically, it is located east of Stafford Creek, Blanket Sound and northeast of Staniard Creek.

**Site Uses:** The site is primarily used for recreation (snorkeling and diving).

**Threats:** Illegal fishing, recreational over-use, pollution, coastal development, sand mining, and dredging.

**Site Contact:** Director of Parks and Science, The Bahamas National Trust - (242) 393-1317



**Figure 13 Map of the National Parks of Andros Island. Andros Barrier Reef National Park – consists of the combined area of Northern Marine Park and Southern Marine Park**

Question	Relevance of Site Objective to Designation Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	Promoting the permanent preservation for the benefit and enjoyment of The Bahamas of lands and tenements (including buildings) and submarine areas of beauty or natural or historic interest and as regards lands and submarine areas for the preservation (so far as practicable) of their natural aspect, features, and animal, plant and marine life.

Question	Purpose	Yes	No	N/A
1b	Are the MPA management plan objectives in line with the site designation purpose? (no plan)			x

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning*	x		
3	Ecological Network Development		x	
4	Governance		x	
5	On-Site Management		x	
6	Enforcement		x	
7	Boundaries*	x		
8	Biophysical Monitoring	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation	x		
11	Stakeholder Engagement	x		
12	Financing		x	
13	Outreach And Education		x	
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change	x		
16	Alternative Livelihoods*	x		
17	Fisheries Management	x		
18	Integrated Coastal Management		x	
19	MPA Sustainable Tourism	x		
20	Organizational Management		x	
21	Partnerships/Coordination			
	Assessment Area	YES		NO
22	Economic Valuation	x		
23	Emergency Response			x
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support		x	

\*denotes identified priorities for capacity building

## 2. Management Planning (Tier 1)

Rationale: There is currently no management plan for the Andros Barrier Reef sites. The main barrier identified by site management was the lack of staff to develop and implement plans.

While one staff has been recently placed on Andros, he has not had the time to focus on development of a management plan. However, it was noted that management planning is a priority for site management to guide and engage stakeholders, and guide the development of rules and management activities of the area. There has been a lot of work carried out recently through the “Integrating Watershed and Coastal Areas Management” project to explore various aspects of the island for management purposes. Some of the activities included in this project that could complement the development of a management plan for Andros through addressing watershed and coastal issues. Additionally, recent surveys has shown that there is a nearby fish spawning aggregation near the site but not with site boundaries. Site management is interest in expanding the site through a management-planning process and developing by-laws to protect this spawning aggregation. Site management identified this area as a priority for capacity building. The Bahamas National Trust will be developing a management plan for these parks through project funding and it is anticipated that they will be complete by the end of 2011.

### **3. Ecological Networking (Tier 2)**

Rationale: The Andros Barrier Reef National Park was established in 2002 to be included into the Bahamas Protected Areas System. In 1983 over 50 areas were recommended as areas of ecological significance and proposed to be included into the National Park System. Among these were the Andros Barrier Reef sites. As such, the sites were established as part of a designed network. However, given that on-site management has been lacking in the sites until recently, coordination across sites within the system has not been feasible. Additionally, an ecological gap analysis was carried out for Andros in 2006 by The Nature Conservancy. This report demonstrated the importance of the existing areas for conservation protection, and provided information about which additional area should be considered for protection to meet conservation targets. There is interest in expanding the Andros Barrier Reef sites to include more biologically important reef areas and fish spawning aggregation areas as identified in the gap analysis.

### **4. Governance (Tier 2)**

Rationale: All national parks in the Bahamas fall under the legal framework of the Bahamas National Trust Act which established the BNT and gives it the authority to purchase or declare areas under protection “for the purposes of promoting the permanent preservation for the benefit and enjoyment of The Bahamas of lands and tenements (including buildings) and submarine areas of beauty or natural or historic interest and as regards lands and submarine areas for the preservation (so far as practicable) of their natural aspect, features, and animal, plant and marine life.” The Act also establishes a set of by-laws by which BNT can manage sites. As a national park, the Andros Barrier Reef National Park is designated as “no take”. The legal designation also includes defined penalties of up to \$500 and confiscation of boats and equipment for those convicted offenders. Additionally there are a set of by-laws that have been developed for the site mainly modeled after the Exuma Cays Land and Sea Park which was the first national park established in the Bahamas. This includes the Andros Barrier Reef sites that were designated as national parks in 2002. While site specific rules and regulations have not yet been developed to manage activities in the site, the by-laws developed for the Exuma Cays Land and Sea Park have been used as de-facto rules for all sites which establish sites as a no take areas. While these by-laws could hold up as official rules, they were not developed through stakeholder engagement processes or based on site-specific goals and objectives. As such, site managers noted the need to develop a management plan for the site that would be developed through stakeholder engagement processes with clear goals and objectives. This plan would

then be used to develop specific site by-laws. Lack of staff capacity on-site has been stated as the primary challenge to advancing further development of a site plan, and specific by-laws.

### **5. On-Site Management (Tier 2)**

Rationale: There is one on-site manager for all 5 national parks on Andros who came on-board in 2010. Currently, there is insufficient staff capacity to have site-specific managers for each site on the island; however it is not necessary. Yet, there is a need for more staff on Andros to support management activities of all sites including positions focused on biological monitoring, outreach and education, and enforcement. The site receives support from the central BNT office in Nassau. However, BNT was historically focused on carrying out educational programs focusing on the national parks system. The system of protected areas has nearly doubled over the past six year (there are current 26 national parks around the country); however, staff numbers have grown slowly while capacity is being built. BNT staff are increasing in presence on other islands and there is an interest for these staff to be more engaged in on-the-ground management activities beyond education. While funding and capacity have increased, BNT management headquarters in Nassau identified funding to increase capacity as a priority.

### **6. Enforcement (Tier 2)**

Rationale: Enforcement within the site is inconsistent. Daily patrols are not possible because BNT does not own a boat on Andros. Nevertheless, the site manager is able to conduct periodic patrols using a private boat. The site manager is also responsible for managing all five sites (terrestrial and marine) on Andros. These duties include outreach, enforcement, and administration. Additional enforcement support is provided periodically through fisheries patrols, police patrols, and US Navy operations (who use the site for research). In late 2010, National Trust Act was amended to specifically allow the BNT to use volunteer wardens for enforcement purposes. This act will provide BNT with the authority to train and deputize local volunteers as park and fisheries wardens. This will provide wardens with the authority to give citations and make arrest for all regulations within national parks and for all fisheries regulations outside of parks. Volunteer wardens will not be allowed to carry weapons and outreach will also be a part of the responsibility of these wardens. This initiative has great implications for improving site management of parks. This new law also provides an excellent opportunity for the development of a volunteer-based enforcement program that, if successful, may serve as a model for the Caribbean region.

### **7. Boundaries (Tier 2)**

Rationale: When the sites were designated, the boundaries were defined on maps using specific land points as markers. There are no zones within the sites but zoning may not be necessary. The boundaries have been geo-referenced so site managers have GPS coordinates of the area. However, there are no physical on-site boundary markers and signage has not been posted to inform stakeholders. Funding is needed to develop physical boundary markers. Site management identified this area as a priority for capacity building.

### **8. Bio-physical Monitoring (Tier 1)**

Rationale: There have been two rapid ecological assessments carried out in the site recently using Reef Check methodology. However the assessment information has not been analyzed and provided back to site management for use at this time. Additionally, there is a volunteer group called Green Force that carries out regular monitoring activity. While this information may not provide statistically robust information, it may provide some baseline information, and

it can also inform the BNT on site challenges such as invasive species outbreaks or bleaching events. There is currently not sufficient staff capacity (both in numbers and skills) to carry out regular monitoring of the sites.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: Whereas community meetings and informal discussions with local stakeholders have been held, there has been no formal socio-economic assessment of users/stakeholders. The main barrier for carrying out formal socio-economic assessments and monitoring has been a lack of staff in both numbers and skills. Managers noted that technical support/expertise is needed and staff could be provided to help with carrying out an assessment.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: Through the master planning process, a Rapid Assessment (RAPPAM) was carried out. However, this was done for the entire system of protected areas without a focus on specific sites. This information can provide a good baseline for management capacity effectiveness, however. The lack of a management plan, bio-physical monitoring, and socio-economic monitoring have been defined as barriers to carrying out MPA Effectiveness efforts. Monitoring of effectiveness evaluation was noted as a priority by BNT management headquarters in Nassau.

#### **11. Stakeholder Engagement (Tier 1)**

Rationale: Site management believes that many stakeholders view the sites as having been established for special interests. Over time, there has been more acceptance of the site and people are beginning to understand the benefits that it can bring. There have been one or two public meetings with stakeholder to discuss their views of how the sites should be managed. However, the lack of a management plan has been noted as a main barrier as the planning process would be used to reach out to various stakeholders on Andros. Therefore, the lack of staff and technical support to carry out management planning processes that fully engage stakeholder groups is the biggest barrier to carrying out this process. Site management is very interested in using the planning process to engage stakeholder groups to develop by-laws for the area.

#### **12. Financing (Tier 2)**

Rationale: There are consistent funds to support the management of the site, which are derived from core funds provided to the Trust by The Government of The Bahamas and by donations. In 2007, the government increased funding to BNT from 100K USD per year to 1 million USD. This increased funding has significantly helped BNT expand efforts and capacity, although additional funds are still required to support effective management of all 26 sites. In addition, there is a sustainable finance plan that has been drafted to establish a Bahamas Protected Areas Trust Fund. This effort is being developed with the support of The Nature Conservancy (TNC) and is part of larger sustainable financing efforts being carried out to support the Caribbean Challenge. Through this larger effort, an additional Trust is being established to receive large donations that will be aimed at supporting protected areas in the wider Caribbean region with those countries that have signed on as participants. Interest from these funds will be provided to those jurisdictions that can provide match from local trust funds. At a local level, the Bahamas is moving forward in developing this mechanism for sustainably financing their protected area system but are in need of the political will to determine appropriate methods for generating funds (e.g. conservation tax, user permits).



**13. Outreach and Education (Tier 2)**

Rationale: Outreach and education for the national parks is mainly done through the National Program in Nassau. The education programs focus on all of the parks not specific parks. Activities include school presentations, field trips, and other community engagement efforts. However, most of these efforts are focused on Nassau. Additionally, the Andros site manager conducts outreach activities when possible such as school presentations and field trips. There are also local NGOs who provide outreach and education of the parks. There is a need for more on-site capacity to further develop outreach programs and/or more formal partnerships with local NGOs to support park-specific goals and objectives.

**14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Park management felt that users are aware of BNT offices and staff both on the ground in Andros and in Nassau as a means to report and resolve conflict. The mechanism used to resolve conflicts vary depending on the situation but BNT staff are accustomed to working with stakeholders to resolve conflicts.

**15. Climate Change Resilience (Tier 1)**

Rationale: Climate change resilience principles have not been considered in the design or management of the site. However, the site is part of a larger protected areas system that was developed to protect key biological areas within the Bahamas.

**16. Alternative Livelihoods (Tier 1)**

Rationale: Site management recognized that the Andros Barrier Reef National Park was used by several fishermen and there is a strong interest to look at options for providing alternative livelihoods for those who may be negatively impacted by site rules and regulations. Consultation with fishermen is needed. The area is also used for diving and might provide a good opportunity for developing new jobs for displaced fishermen. This was noted as a priority for capacity building by on-site management.

**17. Fisheries Management (Tier 1)**

Rationale: A group of surveys or rapid ecological assessments have been done recently that include information on fish populations and provide baseline information for the site. This assessment revealed a spawning aggregation area outside of the site boundaries which is in need of management and protection.

**18. Integrated Coastal Management (Tier 2)**

Rationale: No formal assessments have been done but site managers noted that there are currently very few land-based threats because development has been very gradual. BNT does work closely with the Ministry of Environment, the entity in charge of addressing land-based pollution issues and there are Ministry staff on Andros.

**19. Sustainable Tourism (Tier 1)**

Rationale: There have no been assessments of tourism activities for the Andros Barrier Reef National Park. Site management noted that it would be possible to work with dive and tour operators to collect this information because the main activity at the site is diving. There have been sustainable tourism plans drafted for other parks on Andros but they have not been formally adopted.

**20. Organizational Management (Tier 2)**

Rationale: Currently there is only one staff on-site on Andros who is responsible for managing five parks around the island. Additionally, some management support is provided by the BNT main office in Nassau who are aimed at carrying out over-arching support for the entire protected areas system such as fundraising, administration, education and awareness raising, and legal infrastructure. While the staff on Andros is highly skilled, there is a lack of staff numbers to fully implement desired management of all site including Andros Barrier Reef National Park. Funding is the limiting factor to increasing staff numbers at the site.

**21. Partnerships/Coordination (Tier 2)**

Rationale: Partnerships and Coordination among the various NGO's and agencies involved in protected area management activities on Andros is positive. These relationships are currently informal; no formal MOU defining roles and responsibilities has been developed. These partner include: 1) Greenforce which provides support through volunteer divers who carry out bio-physical monitoring of the Andros Barrier Reef National Park, 2) the Fofar field station which provides facilities for university students and researchers to carry out work, and 3) Andros Conservancy and Trust which focuses on education and conservation project within some of the parks. Additionally, The Nature Conservancy Bahamas Chapter provides extensive support to conservation efforts on Andros mainly through technical support and capacity building.

**22. Economic Valuation (Yes)**

Rationale: An economic valuation has been completed for Andros by The Nature Conservancy. This document was printed in early 2011 and is being shared with government officials, tourists, and the local community to demonstrate the value of environmental systems.

**23. Rapid Response Protocol/Team (No)**

Rationale: There is no emergency response protocol on-site. However, through the National Implementation Support Partnership (NISP) partnership on Nassau, Andros has access to various experts who can mobilize to address emergency situations. Additionally, local partners from Forfar field station and Greenforce are able to provide support in identifying emergency situations.

**24. Ecosystem Based Management (Yes)**

Rationale: An ecological gap analysis was done for the eco-region of Andros island. This analysis showed that although the existing sites contribute to important biodiversity protections and conservation targets they are insufficient to fully protect the various representative habitats of Andros to sustain eco-system function. Additional sites that are in need of protection have been identified to support ecosystem function. However, it is unclear how human dimensions have been considered.

**25. Community Support (Medium)**

Rationale: There is medium support from the community for the Andros Barrier Reef National Park. Site management noted that many people originally felt the site was designated through specific interest groups. However, they feel that many people are now seeing more benefits of the sites through tourism and research that supports the local economy and are now more supportive of the sites.

## 26. Government Support (Medium)

Rationale: Government support has been good as funding is provided to BNT in addition to good access to decision makers regarding legal matters. However, additional support is still needed to effectively manage the number of MPAs in the Bahamas.

### Management Capacity Priority Needs

1. Management Planning – management planning is needed as a key way to engage stakeholder and build engagement at the site
2. Boundaries – this is specific to in the water boundary markers for the site
3. Alternative Livelihoods – there is an interest in defining options for job opportunities for fishermen who previously used the site

### Priority Capacity Building Approaches

1. More staff
2. Training
3. Learning exchanges

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

### References

Bahamas Environment, Science and Technology (BEST) Commission , Department of Marine Resources (then named the Department of Fisheries), the Bahamas National Trust and The Nature Conservancy (2006) *The Bahamas Ecological Gap Analysis*. PoWPA document.

The Government of the Bahamas (2008) *The Bahamas National Protected Area System Master Plan*.

The Government of the Bahamas (1959) *Bahamas National Trust Act*.

The Government of the Bahamas (2010) *Bahamas National Trust (Amendment) Bill*.

## Pelican Cay Land and Sea Park

**Name:** Pelican Cay Land and Sea Park (PCLSP)

**Country:** Bahamas

**Year established:** 1972

**Size:** 2,100 acres (8.5 km<sup>2</sup>)

**Management Agency:** Bahamas National Trust (BNT).

**Site Resources:** Located 8 miles north of Cherokee Sound, Great Abaco, this 2,100 acre land and sea area is a sister park to the Exuma Cays Land and Sea Park. It contains beautiful undersea caves, extensive coral reefs and abounds with terrestrial plant and animal life.

**Site Uses:** This is a high use area for snorkeling. The entire PCLSP is a no-take zone.

**Threats:** Illegal fishing and recreational over-use are the primary threats

**Site Contact:** Director of Parks & Science, Bahamas National Trust - (242) 393-1317

**Other Contacts:** Friends of the Environment (FRIENDS) is a local NGO on Abaco Island whose mission is “to preserve and protect Abaco’s terrestrial and marine environments in order to achieve sustainable living for the wildlife and the people of Abaco, Bahamas.” FRIENDS is a close partner with the Bahamas National Trust and The Nature Conservancy, Bahamas Chapter. As a local NGO, FRIENDS provided on the ground support for management of the PCLSP prior to BNT having on-site staff on Abaco. As such, Friends carried out various activities including installation and maintenance of mooring buoys, outreach and education, and bio-physical monitoring. Since the presence of BNT on Abaco, FRIENDS has continued to support these efforts in close partnership with BNT staff. The partnership between FRIENDS and BNT provides an excellent framework for stakeholder engagement in the management of the PCLSP



Figure 14. Map of Abacos Islands National Parks Including Pelican Cay Land and Sea Park

Question	Relevance of Site Objective to Designation Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	The site was designated in 1972 with push from local stakeholders who recognized Pelican Cays as an important area with a unique coral reef system. The main purpose of designation was for conservation of this unique reef system.

Question	Purpose	Yes	No	N/A
1b	Are the MPA management plan objectives in line with the site designation purpose? (no plan)			x

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning*	x		
3	Ecological Network Development		x	
4	Governance		x	
5	On-Site Management		x	
6	Enforcement*		x	
7	Boundaries		x	
8	Biophysical Monitoring		x	
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation	x		
11	Stakeholder Engagement	x		
12	Financing		x	
13	Outreach and Education*	x		
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change	x		
16	Alternative Livelihoods	x		
17	Fisheries Management			
18	Integrated Coastal Management			x
19	MPA Sustainable Tourism	x		
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation			x
23	Emergency Response			x
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support		x	

\*denotes identified priorities for capacity building

## **2. Management Planning (Tier 1)**

Rationale: There is currently no management plan at the site. On-site management noted the development of a management plan for the site as the highest priority for building capacity. It was recognized that a management plan is needed to have clearly defined objectives to drive priorities and activities at the site and to develop the rules and regulations that best meet the objectives of the site. The site manager also recognized that the planning process could be used as means to engage all stakeholders, a process which has been lacking in the past given the lack of on-site management by BNT. The main support deficiency identified for the development of a management plan was technical support to help facilitate the process and to focus the effort to ensure a plan was completed.

## **3. Ecological Networking (Tier 2)**

Rationale: This site was established in 1972 prior to the development of the Bahamas Protected Areas System. As such, the site is currently part of an ecological network but was not designed to help achieve the network goals. Additionally, given that on-site management has been lacking at the sites until recently, coordination across sites within the system has not been feasible. Additionally, there are five other protected areas on Abaco aimed at protecting various ecologically important features of the area. While these sites have not been designed specifically to function as an ecological network, there are likely linkages among these systems. Finally, The Nature Conservancy carried out a Conservation Action Planning process to explore priority areas of Abaco for bio-diversity protection. PCLSP was identified as a priority site for conservation and recommended an extension of the site to a nearby cay.

## **4. Governance (Tier 2)**

Rationale: All national parks in the Bahamas fall under the legal framework of the Bahamas National Trust Act which established the BNT and gives it the authority to purchase or declare areas under protection “for the purposes of promoting the permanent preservation for the benefit and enjoyment of The Bahamas of lands and tenements (including buildings) and submarine areas of beauty or natural or historic interest and as regards lands and submarine areas for the preservation (so far as practicable) of their natural aspect, features, and animal, plant and marine life.” The Act also establishes a set of by-laws by which BNT can manage sites. As a national park, the PCLSP is designated as “no take”. The legal designation also includes defined penalties of up to \$500 and confiscation of boats and equipment for those convicted offenders. Additionally there are a set of by-laws that have been developed for the site mainly modeled after the Exuma Cays Land and Sea Park which was the first national park established in the Bahamas. Management noted a need for updating a set of PCLSP by-laws. New by-laws have been drafted recently; however, there is an interest in developing the management plan for the site to ensure that the by-laws are compatible with the site management objectives prior to passing the by-laws. The recent by-laws have been developed in collaboration with the local NGO “Friends of the Environment”.

## **5. On-Site Management (Tier 2)**

Rationale: There is currently two BNT staff that are stationed on the island of Abaco where the site is located. This includes a Chief Warden, and Administrative/ Office manager. Staff on Abaco is responsible for management of all six national parks in Abaco. While these staff are stretched thin, their presence in the past three years has significantly improved management activities on Abaco. Additionally, a 27’ boat was recently donated to the BNT on Abaco to support management of Pelican Cays and Fowl Cays. Having a boat will greatly improve the

ability of managers to carry out patrols, research, and education activities. Local BNT staff also consider local stakeholders as stewards of the site who can and should provide direct management support. Because of the small staff capacity on Abaco, there is interest by site management to further develop stakeholder engagement programs to help share and implement management responsibilities, with their role as the “overseers” of management. Site infrastructure includes some mooring buoys which were initially installed and maintained by stakeholder groups. While BNT now is in supporting mooring buoy maintenance, there is still a strong collaboration with local partners (in particular “Friends of the Environment”) to carry out these activities. There is an interest to develop basic amenities at the site to foster use such as benches and beach cabanas. While funding and capacity has increased, BNT management headquarters in Nassau identified funding to increase capacity as a priority.

## **6. Enforcement (Tier 2)**

Rationale: Currently there is inconsistent enforcement of the PCLSP. Due to lack of staff, patrols are not carried out on a regular basis. Additionally, a boat was acquired only recently thus providing more direct presence at the site. The site warden is also responsible for outreach, enforcement, and administrative duties at all six sites (terrestrial and marine) on Abaco. Additional enforcement support is provided periodically, through fisheries patrols, and police patrols, as well as stakeholder that report infractions that are witnessed.

In late 2010, National Trust Act was amended to specifically allow the BNT to use volunteer wardens for enforcement purposes. This act will provide BNT with the authority to train and deputize local volunteers as park and fisheries wardens. This will provide wardens with the authority to give citations and make arrest for all regulations within national parks and for all fisheries regulations outside of parks. Volunteer wardens will not be allowed to carry weapons and outreach will also be a part of the responsibility of these wardens. Abaco is particularly poised to implement this progressive initiative. There are plans to coordinate a team of volunteer wardens who will be trained in various aspects of laws and enforcements. In the beginning of this program, it is likely that volunteer wardens will accompany police or fisheries officers to carry out patrols. This will be done to ensure volunteers get experience with trained enforcement officers and to establish a perception of legitimate authority among new wardens. Upon further training and improved public understanding of that wardens have authority to enforce rules and regulations, they will likely patrol on their own. Additionally, the aim is to have a team that is trained and can provide a presence on the water regularly as it is likely that these volunteers will be out both formally and as users of the area on a regular basis. The main needs identified by site managers to implement this program is time to develop a training program, as well as funding to support program activities (uniforms, fuel, equipment, etc.) Additionally, the need for a management plan and associated by-laws was identified as a need to ensure that rules and regulation can be clearly stated upon approaching users of the area.

This initiative can have great implications for improving site management of park, as one of the main challenges to enforcement is lack of staff capacity. Additionally, as in many sites, there is a lack of confidence by stakeholders that existing sites are being enforced and therefore disinterest in creating new MPAs. This new law also provides an excellent opportunity for the development of a volunteer bases enforcement program that could be a model for the Caribbean region and beyond.

## **7. Boundaries (Tier 2)**

Rationale: When the sites were designated, the boundaries were defined on maps using specific land points as markers in legal documents. These boundaries have not been geo-referenced however. There are no on-site boundary markers and signage has not been posted to inform stakeholders. GPS/GIS capacity is needed to gather information and develop shape-files of the sites. There is no zoning within the sites but zoning may not be necessary as the entire area is a no-take zone with very few conflicting uses.

#### **8. Bio-physical Monitoring (Tier 2)**

Rationale: Some bio-physical monitoring activities have occurred at the site. In 2009, a group of volunteers was formally trained to carry out Reef Check monitoring protocols. This activity was coordinated through the local NGO and BNT partner “Friends of the Environment”. Monitoring occurred six times that year at various locations both within protected areas and outside of protected areas. PCLSP was one of the sites used during this effort. The aim by Friends was to continue assessments at all sites twice a year. However, limited funding for this effort has impacted the ability of this program to be implemented on a regular basis. Therefore funding for a boat, fuel, and equipment is needed to carry out on-going monitoring efforts. There is also an interest by park management to foster dive boat operators to carry out surveys through their operations, but this has not yet been explored for feasibility.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: While community meetings and informal discussions with local stakeholders have been held, there has been no formal socio-economic assessment of users/stakeholders of the PCLSP. The main barrier for carrying out formal socio-economic assessments and monitoring has been a lack of staff in both numbers and skills. Both external technical support and increases staffing are needed to carry out socio-economic assessments. Additionally the lack of a management plan has been noted as a barrier to reach out to various stakeholders on Abaco.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: Through the master planning process, a RAPPAM was carried out. However, this was done for the entire system of protected areas of the Bahamas without a focus on specific sites. This information can provide a good baseline for management capacity effectiveness, however. The lack of a management plan, bio-physical monitoring, and socio-economic monitoring have been identified as barriers to carrying out MPA Effectiveness efforts. Monitoring of effectiveness evaluation was noted as a priority by BNT management headquarters in Nassau.

#### **11. Stakeholder Engagement (Tier 1)**

Rationale: The designation of the PCLSP came about mainly due to local stakeholder groups who were interested in seeing conservation of the site that they knew had unique ecological value. Since that time, stakeholder groups have continued to provide management support, particularly prior to BNT presence at the site in the past few years. However, engagement has mainly been focused on one major user group rather than the broader community where engagement has been limited. Currently, there remains a very good collaboration with the local NGO “Friends of the Environment” who have historically been very engaged in implementing management activities. In the past (and in the absence of BNT staff on-site), Friends supported conservation efforts in PCLSP by funding and implementing mooring buoys, and outreach activities. This partnership still exists among BNT and Friends although BNT has begun providing funds for moorings. A formal MOU has not been established to define the relationship and roles of Friends within the PCLSP and there is interest and an effort underway



to develop a more formal agreement. Friends has noted that they would like to focus primarily on outreach activities in support of conservation efforts in the Abacos (including the PCLSP). They are also interested in continuing to carry out Reef Check monitoring around the Abacos (also including PCLSP). While this partnership among BNT and Friends is strong, management express an interest in engaging more stakeholders in the site management. The management planning process was noted as the primary way to begin this engagement and bring in new stakeholder groups who can become empowered as stewards of the site.

## **12. Financing (Tier 2)**

Rationale: There are consistent funds to support the management of the site, which are derived from core funds provided to the Trust by The Government of The Bahamas and by donations. In 2007, the government increased funding to BNT from 100K USD per year to 1 million USD. This increased funding has significantly helped BNT expand efforts and capacity, although additional funds are still required to support effective management of all 26 sites. In addition, there is a sustainable finance plan that has been drafted to establish a Bahamas Protected Areas Trust Fund. This effort is being developed with the support of The Nature Conservancy (TNC) and is part of larger sustainable financing efforts being carried out to support the Caribbean Challenge. Through this larger effort, an additional Trust is being established to receive large donations that will be aimed at supporting protected areas in the wider Caribbean region with those countries that have signed on as participants. Interest from these funds will be provided to those jurisdictions that can provide match from local trust funds. At a local level, the Bahamas is moving forward in developing this mechanism for sustainably financing their protected area system but are in need of the political will to determine appropriate methods for generating funds (e.g. conservation tax, user permits).

## **13. Outreach and Education (Tier 1)**

Rationale: Site management identified that while the site specifically has little on-going outreach and education activities, they are moving forward in this area. Many outreach and education activities are implemented through the local NGO “Friends of the Environment” who carry out awareness programs about conservation and the environment specific to Abaco. Additionally, BNT has a program called “Parks Pals” which takes school groups out the site to provide awareness of conservation efforts. These efforts have been mainly aimed at school children and often focus on conservation efforts throughout all the Abacos rather than site-specific awareness. Park management noted a priority in building capacity in this area is to hire an Outreach Officer who could focus developing a program that supports the goals of all national parks in the Abacos.

## **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Park management felt that users are aware of BNT offices and staff as a means to report and resolve conflict both on the ground in Abacos and in Nassau. The mechanism used to resolve conflicts vary depending on the situation but BNT staff are accustomed to working with stakeholders to resolve conflicts.

## **15. Climate Change Resilience (Tier 1)**

Rationale: Climate change resilience principles have not been considered in the management of the site. However, based on the site description, the reef is in an area of strong currents, and upwelling of colder waters. This has been noted as the reason for the unique species and

structure of the reef which consists of species normally found in deeper water. As such, the area may be well suited for resiliency to future increases in sea surface temperatures.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: Historically, the PCLSP was used as a major fishing spot for local fishers, in particular for conch and lobster. While the site has been in place for over 40 years, there still is some opposition from local fishers about the site protection as well as poaching that occurs in the site. No assessments were carried out during site designation or since, therefore it is unknown how the site designation and regulations may have negatively impacted stakeholders. As such, no alternative livelihood programs have been established.

#### **17. Fisheries Management (Tier N/A)**

Rationale: The only recent assessment has been through Reef Check in 2009. There is also baseline assessment information from a study done through the development of the site. However, there is no fisheries management plan because the site is a no-take area.

#### **18. Integrated Coastal Management (Tier 3)**

Rationale: There is currently a proposal for a new national park that is linked to the PCLSP and consists mainly of mangrove systems. The proposal for this site was done through a collaborative effort between various agencies involved in resource management (marine and terrestrial) including the Department of Marine Resources and The Nature Conservancy. A formal threats assessment has not been done for land based threats, but coordination among agencies is strong on Abaco.

#### **19. Sustainable Tourism (Tier 1)\*\***

Rationale: Historically, there were use surveys carried out at the site to collect information about what uses occur, and if stakeholders are aware of the site and its resources. Site managers noted an interest in continuing these surveys through collaborations with tour operators. No plans for sustainable tourism have been developed. Increased staff and technical support would be needed to develop this capacity.

#### **20. Organizational Management (Tier 2)**

Rationale: Currently there are only two staff on-site on Abaco who are responsible for managing six parks around the island. Additionally, some management support is provided by the BNT main office in Nassau who are aimed at carrying out over-arching support for the entire protected areas system such as fundraising, administration, education and awareness raising, and legal infrastructure. While the staff on Abaco is highly skilled, there is a lack of staff numbers to fully implement desired management of all sites including PCLSP. Funding is the factor limiting increasing staff numbers at the site.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: Partnerships and Coordination among the various ngo's and agencies involved in protected area management on Abaco is strong and positive. These relationships are currently informal but there is an effort to develop a more formal MOU which would more clearly define roles and partnership activities.

**22. Economic Valuation (No)**

Rationale: Abaco is very interested in having an economic valuation carried out for the site to support conservation efforts.

**23. Rapid Response Protocol/Team (No)**

Rationale: There is no emergency response protocol on-site. However, through the NISP partnership on Nassau, Abaco has access various experts who can mobilize to address emergency situations.

**24. Ecosystem-Based Management (Yes)**

Rationale: While the site was not initially designed with ecosystem-based management principles, it is hoped that new sites linked to the PCLSP will support ecosystem function by protecting habitats (i.e. mangrove) that support the coral reefs. Additionally, it is anticipated that the management planning process will incorporate human dimensions.

**25. Community Support (Medium)**

Rationale: While existing support is high among certain stakeholder groups on Abaco, management felt that it could be improved through further outreach and engagement processes (e.g. management planning process).

**26. Government Support (Medium)**

Rationale: Government support has been good as there is funding provided to BNT in addition to good access to decision makers regarding legal matters however additional support is needed to effectively manage all the MPAs in the Bahamas.

**Management Capacity Priority Needs**

1. Management planning – including stakeholder engagement, and the development and approval of a management plan
2. Enforcement – management noted a priority for the site to implement the volunteer warden program
3. Outreach and Education

**Priority Capacity Building Approaches**

1. More staff
2. Training
3. Learning exchanges

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

**References**

Bahamas Environment, Science and Technology (BEST) Commission , Department of Marine Resources (then named the Department of Fisheries), the Bahamas National Trust and The Nature Conservancy (2006) *The Bahamas Ecological Gap Analysis*. PoWPA document.

The Government of the Bahamas (2008) *The Bahamas National Protected Area System Master Plan*.

The Government of the Bahamas (1959) *Bahamas National Trust Act*.

The Government of the Bahamas (2010) *Bahamas National Trust (Amendment) Bill*.

## South Berry Islands Marine Reserve

**Name:** South Berry Islands Marine Reserve (SBIMR)

**Country:** Bahamas

**Year established:** 2008

**Size:** 72 mi<sup>2</sup> (186.5 km<sup>2</sup>)

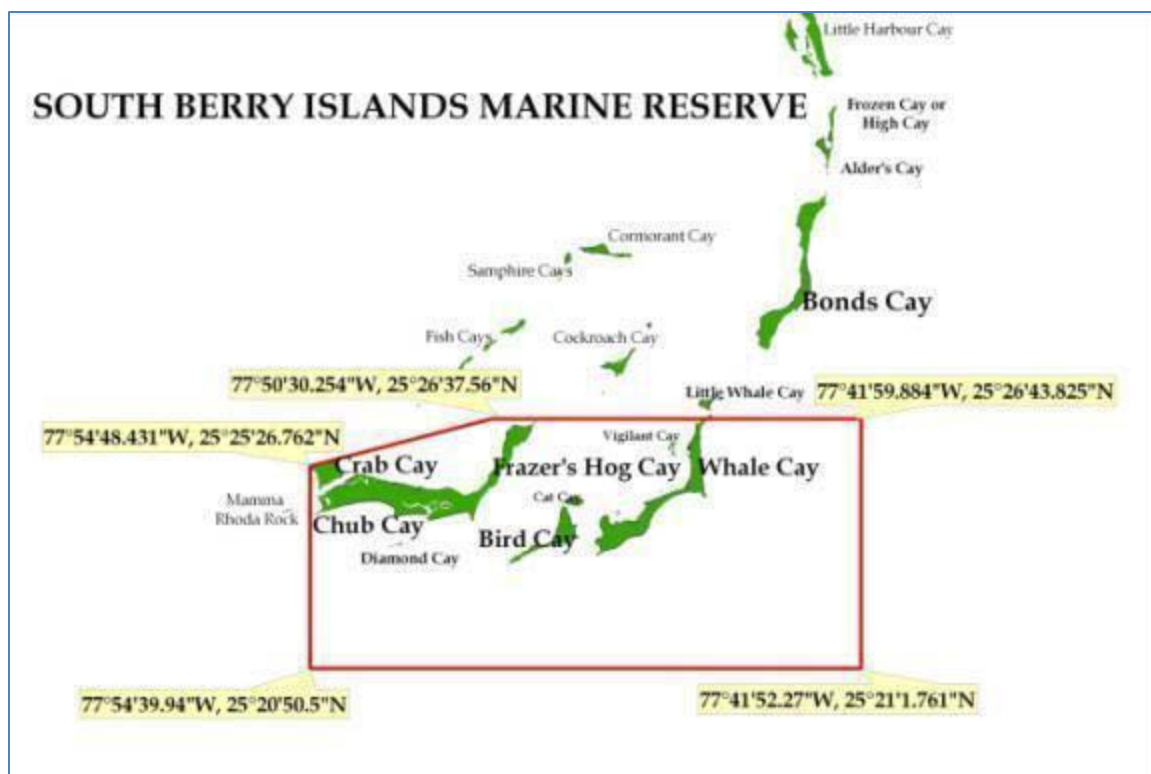
**Management Agency:** Department of Marine Resources (DMR)

**Site Resources:** As retrieved from the Reef Environmental Education Foundation website: <http://www.reef.org/db/reports>, the SBIMR possesses the most important reef building coral found in the Caribbean, *Acropora palmata* (Elkhorn coral), accompanied by some fourteen (14) species of Cnidarians, ninety (90) species of Fish, three (3) species of Crustaceans including spiny lobster, three (3) species of Mollusks including the queen conch, one (1) species of Echinoderm, one (1) species of Annelid and one species (1) of Tunicate. The extensive shallow reef system steeply slopes to a deep reef system extending to a deep oceanic trench known as the Tongue of the Ocean. Two (2) types of seagrass have also been documented within the reserve boundaries in addition to extensive mangrove creek systems and sand flats for bone-fishing. Areas within the site have been identified as a nursery for queen conch. There has been anecdotal information on a submerged shipwreck present off the southwestern tip of Whale Cay (Whale Cay Development Environmental Impact Assessment Report, 2005).

**Site Uses:** The site was mainly used by commercial fishermen to harvest conch in the past. Current uses include swimming and snorkeling, scuba diving, sailing tours/site seeing, scientific research, and use as a safe haven in rough weather. The site is a no-take area.

**Threats:** The primary threats to the site are illegal fishing, invasive species, anchor damage, and marine debris. Less severe threats are land development, ship groundings, and natural disasters.

**Site Contact:** Assistant Fisheries Officer, Department of Marine Resources; phone: (242)393-1777, email: [lakeshiaanderson@bahamas.gov.bs](mailto:lakeshiaanderson@bahamas.gov.bs)



**Figure 15 Map of South Berry Islands Marine Reserve**

Question	Relevance of Site Objective to Designation Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	The site was designated based on studies that were conducted to identify areas of biological value that should be considered to incorporate into the Bahamas Protected Area System. Additionally, stakeholders had concerns about over-harvesting of conch for commercial purposes. As such, the site was designated as a new reserve to meet the goals of the Caribbean Challenge.

Question	Purpose	Yes	No	N/A
1b	Are the MPA management plan objectives in line with the site designation purpose?	x		

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning		x	
3	Ecological Network Development		x	
4	Governance		x	
5	On-Site Management	x		
6	Enforcement *		x	
7	Boundaries		x	
8	Biophysical Monitoring	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation *	x		
11	Stakeholder Engagement		x	
12	Financing	x		
13	Outreach and Education *	x		
14	Conflict Resolution Mechanism		x	
15	Resilience to Climate Change		x	
16	Alternative Livelihoods		x	
17	Fisheries Management	x		
18	Integrated Coastal Management	x		
19	MPA Sustainable Tourism	x		
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation			x
23	Emergency Response			x
24	Ecosystem Based Management	X		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support	x		
26	Government Support	x		

\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 2)

Rationale: The South Berry Islands Marine Reserve was established in 2008, with legal declaration passed in 2009, and is still in its infancy stages of management. A draft management plan has been completed but the associated budget has not yet been approved. The Department of Marine Resources is currently working toward implementation of the plan however the lack of staff capacity has limited the implementation, in particular on-site management activities.

### **3. Ecological Networking (Tier 2)**

Rationale: The site was designed to be part of the Bahamas Protected Areas System, and was identified as an ecologically important area for protection. However, with the lack of management in place for the site, there is lack of ability to coordinate efforts across other sites in the network. A communications plan has been developed for the network of marine reserves in the Bahamas, which includes the SBIMR. Until more staff are available to support management of the site, coordination across other networks sites will remain difficult.

### **4. Governance (Tier 2)**

Rationale: The South Berry Islands Marine Reserve was established under the Fisheries Act which gives authority to the Minister of Agriculture and Marine Resources “to declare any area of the waters within the exclusive fishery zone whether alone or together with any area of land adjacent to such waters to be a protected area for the purposes of this Act.” The Act also gives the Minister authority to prohibit fishing in these areas. The SBIMR was gazetted as a “no take” area through this Act and only covers the marine component of the area, not the various cays that lie within the site. There are currently no further regulations for the site and the DMR is working with stakeholders to develop further rules for use of the area.

### **5. On-Site Management (Tier 1)**

Rationale: There is no on-site management of the site at present. DMR staff noted that the main challenge for this was a lack of infrastructure and funding. There is currently no office, patrol vessel, or communications in place at the site. The Department would like to have at least one warden present at the site with a communication system in place. The site is several hours away from New Providence (dependant on boat size/speed) and therefore, enforcement patrols are hard to carry out without a permanent on-site presence.

### **6. Enforcement (Tier 2)**

Rationale: While the DMR has fisheries enforcement presence on six islands, the Berry Islands are not included in them. However, all Peace Officers and Officers of the Revenue (i.e. Fisheries Officers, Police Officers, Defense Force Officers and Customs Officers) once appointed by The Minister in writing are also Fisheries Inspectors trained and authorized to enforce regulations under the Fisheries Act. Therefore, enforcement takes place if local residents or visitors call into the DMR about illegal activity. At that time, the closest authorized Fisheries Inspector would respond. There are five DMR patrol boats for all of the Bahamas and a research vessel (currently being used by the Defense Force for patrolling). Two boats reside on Abaco and can do periodic patrols of the Berry Islands. More staff and consequently training are needed to carry out on-site management including enforcement.

### **7. Boundaries (Tier 2)**

Rationale: The boundaries for the site were clearly defined with the establishment of the reserve and these boundaries are geo-referenced and provided on the DMR website. There are no boundary markers on site however and no signage of the site. Park boundaries extend into deep waters and technical support would be needed to install buoys at this site. Funding is also required for site infrastructure such as an office.

### **8. Bio-physical Monitoring (Tier 1)**



Rationale: There have been few bio-physical assessments carried out at the site. Marine surveys were conducted as part of two Environmental Impact Assessments in part of the site (Chub Cay and Whale Cay). This assessment quantified the number of species found within those specific areas. Additionally some REEF surveys have been done within the reserve, but this information is not readily available so it is unclear what these data includes. No formal transects or fish counts have occurred for the whole site so there is a need for baseline data at this time. Additionally, it was recognized that when the management plan is approved, consistent data collection would be needed to assess changes over time. While there is in-house capacity to carry out bio-physical assessments, staff numbers are small and staff time dedicated to the SBIMR is limited. As such, the DMR is interested in establishing partnerships with outside institutions that could provide continuous monitoring support over time.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: While community meetings and informal discussions with local stakeholders have been held, there has been no formal socio-economic assessment of users/stakeholders of the SBIMR. The main barrier for carrying out formal socio-economic assessments and monitoring has been a lack of staff in both numbers and skills. Technical support to do this is needed and staff could be provided to help with this.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: The SBIMR is a relatively new site and therefore there have not been any efforts to determine site effectiveness as yet. However, through the development of the management plan, efforts are underway to quantify measures of success for the site. It is likely that the reserve will utilize the Exuma Cays Land and Sea Park as a model for evaluating effectiveness as studies have shown success of conservation efforts of that site. Additionally, a combination of the Management Effectiveness Tracking Tool (METT) and Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodologies has been utilized initially to guide department staff on the use of the tools and to manage threats. This approach has been agreed upon by all MPA Managers in The Bahamas for the Bahamas Protected Areas System to review effectiveness over time. A limiting factor for evaluation of MPA effectiveness in the future will be the lack of existing baseline data for bio-physical and socio-economic indicators.

#### **11. Stakeholder Engagement (Tier 2)**

Rationale: This reserve was established through stakeholder consultation over a long period of time. Residents of the area were supportive of the site declaration due to noting an increased number of commercial fishermen coming into the area to collect queen conch and selling them on New Providence. An assessment of conch in the area showed low numbers and, combined with community interest to protect the area, the DMR began a process to design and declare the site as a No-Take Fisheries Reserve. The process included several meetings with local stakeholders to define the boundaries and regulations. This process lasted nearly a decade but the end result was a high level of support for the declaration. This high level of community support fostered a quick passage into law as a fisheries reserve. While local support is high, the DMR recognizes the need to continue this engagement to implement management activities. In this regard, the need for on-site management is a priority.

#### **12. Financing (Tier 1)**

Rationale: The Bahamas government does not provide funds for management of the site at this time and therefore staff who work on management are adding tasks onto existing positions; this

is not sustainable over time. There is currently a sustainable finance plan that has been drafted to establish a Bahamas Protected Areas Fund. This effort is being developed with the support of The Nature Conservancy (TNC) and is part of larger sustainable financing efforts being carried out to support the Caribbean Challenge. Through this larger effort an additional Trust is being established to receive large donations that will be aimed at supporting protected areas in the wider Caribbean region within those countries that have signed on as participants. Interest from these funds will be provided to those countries that can provide match from local trust funds. At a local level, the Bahamas is moving forward in developing this mechanism for sustainably financing their protected area system but they are in need of the political will to identify appropriate methods for generating funds (e.g. conservation tax, user permits).

### **13. Outreach and Education (Tier 1)**

Rationale: While there are outreach and education officers with the Department of Marine Resources, efforts are made at providing information about all fisheries regulations and are not focused on the Berry Islands Fisheries Reserve. Lack of sufficient staff was noted as the key barrier to doing more and was also a priority for the site.

### **14. Conflict Resolution Mechanism (Tier 2)**

Rationale: The DMR office is currently the mechanism for resolving conflicts among stakeholders at this site. However, without a regular presence on-site and with little outreach happening, there are still some that are unaware of where to turn to resolve conflicts.

### **15. Climate Change Resilience (Tier 2)**

Rationale: Climate change was discussed during meetings to develop the management plan for the Berry Islands but the site was not designed specifically to minimize climate change impacts.

### **16. Alternative Livelihoods (Tier 2)**

Rationale: Some assessments were carried out to understand the likely negative impacts of the site regulations on local stakeholders. Additionally, during community meetings there were discussions about what alternative opportunities (e.g. park rangers) might be available for stakeholders who have been negatively impacted. However, a formal alternative livelihood program has not been developed. Overall, there was extensive local support for the site designation and most fishermen were supportive of the site because the boundaries did not create severe limitations to their efforts.

### **17. Fisheries Management (N/A)**

Rationale: There have been little bio-physical assessments carried out at the site. No formal transects or fish counts have occurred. There is a need for baseline data at this time. The site is a no-take area so the development of a fisheries management plan is non-applicable.

### **18. Integrated Coastal Management (Tier 1)**

Rationale: Upland threats to the site have not been assessed. Identifying these threats was recognized as the first step to addressing their impacts. The DMR does have a good relationship and coordinates with the Department of Environmental Health Services (DEHS) under the Ministry of the Environment when needed to address land-based threats.

### **19. Sustainable Tourism (Tier 1)**

Rationale: Very little tourism occurs in the area of the site. Therefore, there have been no assessments of tourism activities or the development of a sustainable tourism plan. The DMR did not feel this was a priority due to the lack of tourism use.

## **20. Organizational Management (Tier 2)**

Rationale: There are two staff within the main DMR office in Nassau who work on MPA management. However, they are not solely focused on MPAs or the Berry Islands. DMR noted that the main challenge in managing the site is the lack of funds and political will dedicated to hire staff to focus on MPAs, and specifically on-site on the Berry Islands. In the future, a priority would be for the Department to have at least one Fisheries Superintendent present at the site with communications in place. This Fisheries Superintendent would essentially carry out responsibilities of a “warden” because the DMR does not have “warden” positions. The site is several hours away from New Providence (varying by boat size/speed) and therefore, enforcement patrols are hard to conduct without a permanent on-site presence. Additionally, DMR staff indicated that while some training might be needed to build specific skills, there is a strong pool of potential candidates that could take on this role within the country.

## **21. Partnerships/Coordination (Tier 2)**

Rationale: Informal partnerships exist with the Bahamas National Trust, The Nature Conservancy, local communities, and DMR for the development of the SBIMR. The DMR also partners with the Royal Bahamas Police Force and The Royal Bahamas Defense Force to provide training on fisheries regulations. Site regulations for the Berry Islands are included in the training to ensure that enforcement units in these organizations are aware of regulations and can support enforcement activities in the reserve. At a national level, the DMR, the Bahamas National Trust, The Nature Conservancy, and the Bahamas Environment Science Technology (BEST) Commission, established a formal agreement called the National Implementation Support Programme or NISP. This group is responsible for implementing the Programme of Work on Protected Areas (PoWPA) that was adopted at the Seventh Meeting of the Conference of Parties to the Convention on Biological Diversity (COP-7). Among their activities, the NISP is committed “to jointly implement a series of priority activities towards the establishment and maintenance of a comprehensive, effectively managed and ecologically representative system of Bahamian protected areas on land by 2010 and at sea by 2012” (*The Bahamas National Protected Area System Master Plan, 2008*).

## **22. Economic Valuation (No)**

Rationale: There has been no economic valuation done for the site.

## **23. Rapid Response Protocol/Team (No)**

Rationale: There is no protocol or team set up to respond to emergencies at the site.

## **24. Ecosystem Based Management (Yes)**

Rationale: Ecosystem based management was considered throughout the development of the site. The site was identified in the late 1990’s from scientists as an area of biological importance for protection and this site was considered therefore by DMR as a possible place to establish a marine reserve. Connectivity was considered with respect to supporting different life stages of protected species within the reserve and mangrove, reef and seagrass habitats were incorporated in its design. Additionally, local stakeholders were consulted over several years to determine reserve boundaries, incorporate their concerns in the design of the reserve, and gain

support for the designation. Areas within the reserve boundaries serve as a nursery for conch, but this nursery extends beyond the site boundaries. Community members and scientist have recommended that DMR consider expanding the boundaries to provide more complete protection of this life-history phase for this important commercial species.

#### **25. Community Support (High)**

Rationale: Support for the site is very high as consultations have occurred for nearly ten years to address community concerns and interest.

#### **26. Government Support (High)**

Rationale: The government passed the designation of the site because the community support was very high. However, little funding has been provided for management of the site to date.

### **Management Capacity Priority Needs**

1. **MPA Effectiveness Evaluation** – this includes baseline information and a way to assess effectiveness over time that is scientifically valid.
2. **Enforcement** – including staff, equipment, and training
3. **Outreach and Education** - including staff, equipment, and training

### **Priority Capacity Building Approaches**

1. More staff
2. Training
3. Technical support

### **References**

Homer, Floyd (2009) *Draft Management Plan For The South Berry Islands Marine Reserve 2009-2013*. Unpublished MPA planning document.

Reef Environmental Education Foundation website: <http://www.reef.org/db/reports>

The Government of the Bahamas (2008) *The Bahamas National Protected Area System Master Plan*.

Applied Technology and Management (2005) *Whale Cay Development Environmental Impact Assessment Report*. Unpublished consultant's report.

## Belize

**Dates of Interviews:** April 5 to 8, 2011

**Interviewer:** Alex Arrivillaga

**Agencies/Organizations Interviewed:** Toledo Institute for Development and Environment, Belize Fisheries Department, and Belize Audubon Society.



## Port Honduras Marine Reserve

**Name:** Port Honduras Marine Reserve (PHMR)

**Country:** Belize

**Size:** 40,468 hectares (404.7 km<sup>2</sup>). The Port Honduras Marine Reserve is located in southern Belize near the coast just off Punta Gorda Town between Rio Grande Bar and Monkey River Village. General boundaries being at Rio Grande in the South, Monkey River in the North, the Snake Cayes in the East and the coastal wetlands along the coast.

**Management Agency:** Belize Fisheries Department and co-managed by Toledo Institute for Development and Environment (TIDE).

**Site Resources:** PHMR comprises coastal and tidal wetlands, sea, seabed, coastal lagoon habitats, fringing reefs and mangrove cayes, coral, reef fish, conch, lobster, sea grass, mangroves, turtles, manatees, seabirds, and fish stocks.

**Site Uses:** fishing, tourism.

**Threats:** seven major watersheds flow into PHMR with resulting freshwater plumes extending to Snake Cayes during rainy season.

**Site contact:** Celia Mahung, Executive Director, Toledo Institute for Development and Environment, Tel. (501) 722-2274, email: [cmahung@tidebelize.org](mailto:cmahung@tidebelize.org)

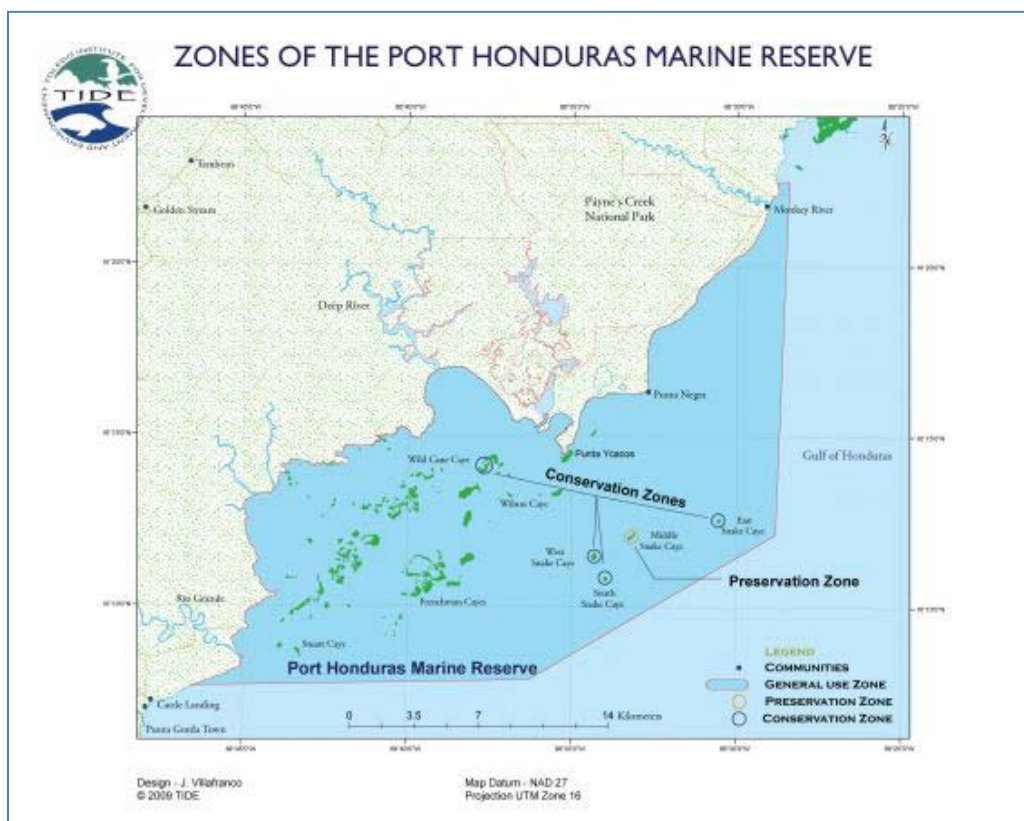


Figure 16 Map of Port Honduras Marine Reserve

Question	Purpose
	The purpose of PHMR is for the maintenance of coastal ecosystem function and natural resource values, including water quality and nursery habitats of the area

Question	Purpose	Yes	No
1b	To protect the physical and biological resources of Port Honduras Marine Reserve To provide education and research To preserve the value of the area for fisheries and other important genetic resources To develop recreational and tourism services that will enhance the economic and social benefits of the area without causing environmental damage To strive for sustainable financing Reduction Fishing Pressures surround PHMR. Functional Connectivity among Ecosystems surrounding PHMR Restoration of Species and Ecosystems Pesticides Control	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development		X	
4	Governance			X
5	On-Site Management			X
6	Enforcement			X
7	Boundaries			X
8	Biophysical Monitoring			X
9	Socioeconomic Monitoring	X		
10	MPA Effectiveness Evaluation			X
11	<b>Stakeholder Engagement*</b>			X
12	<b>Financing*</b>		X	
13	Outreach and Education			X
14	Conflict Resolution Mechanism	X		
15	Resilience to Climate Change		X	
16	<b>Alternative Livelihoods*</b>			X
17	Fisheries Management			X
18	Integrated Coastal Management		X	
19	MPA Sustainable Tourism		X	
20	Organizational Management		X	
21	Partnerships/Coordination			X

	Assessment Area	YES	NO	
22	Economic Valuation		X	
23	Emergency Response		X	
24	Ecosystem Based Management	X		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support	X		
26	Government Support	X		

\*Denotes identified priorities for capacity building.

## **2. Management Planning (Tier 3)**

Rationale: First management plan completed in 1999/2000. A new, updated management plan was developed and is now being implemented.

## **3. Ecological Networking (Tier 2)**

Rationale: PHMR is a member of the Belize Marine Network, coordinated by the Fisheries Department. PHMR is also a member of the Tri National Alliance for the Gulf of Honduras, TRIGOH, and PHMR is currently serving as the president.

## **4. Governance (Tier 3)**

Rationale: all activities carried out in the reserve have clearly defined laws and official rules and regulations. These regulations are included in the management plan including zoning, fishing, anchoring, research, monitoring, educational activities, recreation and other uses of the reserve resources.

## **5. On-Site Management (Tier 3)**

Rationale: regarding personnel, the PHMR has a full-time manager and assigned programmatic personnel.

## **6. Enforcement (Tier 3)**

Rationale: there is full time enforcement of the law in the PHMR. Law infractions vary from season to season. All violations to the law are reported but not all result in arrests.

## **7. Boundaries (Tier 3)**

Rationale: Boundary buoys are in place but they get stolen frequently. Brochures and maps of the reserve boundaries are available for community members and stakeholders.

## **8. Bio-physical Monitoring (Tier 3)**

Rationale: a biophysical monitoring program is in place and the data collected is being used to inform management decisions (e.g., to compare between the conservation zone and the general use zone.) The monitoring program focuses on finfish, lobster, conch, mangroves, sea turtles, seagrasses, corals, and water quality. More recently, monitoring for sea cucumber has been implemented as this fishery is just starting in Belize. The 2010 biophysical monitoring report indicated an increase in lobster and conch abundance and in live coral cover.



**9. Socio-economic Monitoring (Tier 1)**

Rationale: socioeconomic assessments have been conducted and community consultations are frequent. Nevertheless, a permanent socioeconomic monitoring program is not in place.

**10. MPA Effectiveness Evaluation (Tier 3)**

Rationale: periodic assessments of MPA effectiveness are conducted. The latest one was done for the 2009-2010 period by the University of Belize. The effectiveness is measured every 2 to 3 years and is based on the degree to which the management plan is implemented. Both the management plan and the annual work plan have indicators that are measured periodically. PHMR also has a five year strategic plan.

**11. Stakeholder Engagement (Tier 3)**

Rationale: stakeholders are involved in management planning of the reserve. The latest management plan was done through a Conservation Action Planning process with participation of stakeholders in the workshops. A Community Stewards Program, whereby community participants attend conservation discussions and get involved in resource management, is also operational. A research program with the participation of the community is also in place, and the reserve rangers are from the community. Stakeholder engagement is a capacity need identified in this assessment. More staff are needed to build this capacity as the current person acting as community liaison works with 14 communities.

**12. Financing (Tier 2)**

Rationale: funding for management of the PHMR comes from grants, minimal user fees, and a government debt for nature swap. There is an endowment that was created for long-term funding. One hundred percent of the expenses of managing the reserve come from TIDE generated funds. Financing was identified as a priority capacity need for PHMR in this assessment. This capacity building could also be done through learning exchanges, and by having more staff trained for that purpose.

**13. Outreach and Education (Tier 3)**

Rationale: the PHMR has an outreach and education program with goals, target audiences, methods and activities, and strategies. The program focuses on fishermen and the public education system at the primary (elementary) and secondary (middle school) education levels.

**14. Conflict Resolution Mechanism (Tier 1)**

Rationale: Conflict resolution mechanisms are not written but they are used every day. Conflicts are common, and the key is to address conflicts on a case by case basis. Conflicts arise when, for example, a village asks stakeholders to be fishers or tour guides but not both. Fishers do not want tour guides to also be fishers.

**15. Climate Change Resilience (Tier 2)**

Rationale: as an organization TIDE has general information on climate change and climate change resilience; however, there is need to transfer that information to stakeholders. The current revision of the management plan is incorporating reef resilience in the management actions. Resilient reef sites have been identified within PHMR but the exact characteristics that confer resilience to these sites is not completely clear, in particular since seven major watersheds drain into the MPA. This could be a line of research and for capacity building.

**16. Alternative Livelihoods (Tier 3)**

Rationale: periodic assessments of alternative livelihood needs are conducted. The alternative livelihood program has been developed but there is need for more activities. Access to microgrants, besides training in alternative livelihoods is needed. A nice example of an alternative livelihoods program success in Punta Gorda is Garbutt's Fishing Lodge. More capacity in this area is needed. Technical support to identify priorities and fundraising for specific activities and access to microgrants are needed.

**17. Fisheries Management (Tier 3)**

Rationale: a fisheries management plan is in place. Current revisions to the fisheries management plan include managed access and catch shares as management tools. This new program will start this year. Fishing stocks have been assessed already, which is the first step in promoting managed access.

**18. Integrated Coastal Management (Tier 2)**

Rationale: upland threats have been assessed and there is coordination with the agriculture and land use departments. The Coastal Zone Authority is being reactivated in Belize. The upland area near PHMR is in Paynes Creek, which covers an area of 50,000 acres of the 729,000 acres of the Maya Mountains area draining into PHMR. Based on this number, more private owners need to be involved in riparian zone restoration efforts. Some coordination is already in place but need to be strengthened. TIDE is currently engaged in the development of a national land-use policy for Belize.

**19. Sustainable Tourism (Tier 2)**

Rationale: an assessment of tourism activities and sustainable tourism options has been completed. Also, a carrying capacity study was done by Vincent Palacio for PHMR. There are country level and District of Toledo level sustainable tourism plans but there is no specific plan for the MPA.

**20. Organizational Management (Tier 2)**

Rationale: MPA personnel are limited in terms of numbers. There are five rangers, two biologists and a manager, for a total of 8 field staff. There is need to have at least five more staff, especially if the reserve is expanded.

**21. Partnerships/Coordination (Tier 3)**

Rationale: PHMR has an Advisory Council with the participation of local government through the Village Council, fishermen cooperatives, town council, and the tour guide association.

**22. Economic Valuation (No)**

Rationale: an economic valuation of the resources at PHMR was initiated by World Resources Institute but it is not completed yet. This type of information would be useful to inform the alternative livelihoods program.

**23. Rapid Response Protocol/Team (No)**

Rationale: no process and/or team to respond to emergency threats is in place.

**24. Ecosystem Based Management (Yes)**

Rationale: ecosystems were identified as conservation targets in the last conservation action planning exercise.

**25. Community Support (High)**

Rationale: fishermen feel the reserve has resulted in an increase in fish abundance. An independent survey done in preparation for the revision of the management plan indicated a high level of support from community members for the reserve.

**26. Government Support (High)**

Rationale: the technical and political support from the fisheries department is adequate, even though the financial support is limited.

**Management Capacity Priority Needs**

1. Financial sustainability plan
2. Stakeholder engagement
3. Alternative livelihoods

**Priority Capacity Building Approaches**

1. Learning exchanges
2. Training
3. Technical support

**REFERENCES:**

Belize Fisheries Department and the Toledo Institute for Development and the Environment  
(Date unknown) *Port Honduras Marine Reserve Management Plan*.



Question	Purpose
	The major goal of both Half Moon Caye and Blue Hole Natural Monuments is to conserve biodiversity and natural features by protecting important ecosystem, habitats, and species.

Question	Purpose	Yes	No
1b	<ul style="list-style-type: none"> <li>• Providing marine species with a refuge from harvesting activities through the continued designation of both protected areas as no-take zones</li> <li>• Enhancing local and regional fish stocks through increased recruitment and spill over of adults and juveniles into adjacent areas, and protection of marine habitats critical to lifecycle stages such as spawning, juvenile rearing and feeding</li> <li>• Protecting an important spawning aggregation site, to enhance reproductive capacity, particularly of commercial fish species;</li> <li>• Enhancing capacity building in stakeholders for management participation, through education, public awareness and collaboration;</li> <li>• Providing opportunities for scientific research in near-pristine reef conditions</li> <li>• Providing protection for the red-footed booby colony of Half Moon Caye, and for the littoral forest</li> <li>• Providing protection for nesting marine turtles;</li> <li>• Protecting the unique geological karst features of the Blue Hole, an underwater sinkhole;</li> <li>• Providing two well-managed tourism resources – two of the most popular dive destinations in Belize</li> </ul>	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development		X	
4	Governance			X
5	On-Site Management		X	
6	Enforcement		X	
7	Boundaries		X	
8	Biophysical Monitoring			X
9	<b>Socioeconomic Monitoring*</b>	X		
10	MPA Effectiveness Evaluation			X
11	Stakeholder Engagement		X	
12	<b>Financing*</b>		X	

13	Outreach and Education		X	
14	Conflict Resolution Mechanism		X	
15	Resilience to Climate Change		X	
16	<b>Alternative Livelihoods*</b>	X		
17	Fisheries Management		N/A	
18	Integrated Coastal Management		N/A	
19	MPA Sustainable Tourism		X	
20	Organizational Management		X	
21	Partnerships/Coordination		X	
	<b>Assessment Area</b>	<b>YES</b>	<b>NO</b>	
22	Economic Valuation	X		
23	Emergency Response	X		
24	Ecosystem Based Management	X		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support	X		
26	Government Support		X	

\*Denotes identified priorities for capacity building.

## 2. Management Planning (Tier 3)

Rationale: an approved management plan is being implemented for these two MPAs.

## 3. Ecological Networking (Tier 2)

Rationale: these sites are part of the Belize Network of MPAs. The coordination with the network is mainly for monitoring purposes (conch, lobster, spawning aggregations, and others). There is no management coordination.

## 4. Governance (Tier 3)

Rationale: there are clearly defined laws and official rules and regulations governing all specific activities.

## 5. On-Site Management (Tier 2)

Rationale: There is high staff turnover at the site. Currently there are four full time staff, including the park director (on site supervisor), a marine biologist, and two rangers. Sometimes there are 'casuals', which are staff on probation until they decide if they want to stay at this remote site. The MPA ideally should have a total of eight staff.

## 6. Enforcement (Tier 2)

Rationale: staff enforcement training needs to be strengthened. The MPA needs two constables, rangers with law enforcement capacity, but currently only one ranger is a constable. Funding is

needed to train and promote the second ranger to a constable status. For effective enforcement, another boat is also needed.

### **7. Boundaries (Tier 2)**

Rationale: currently the boundary buoys are too far apart, more intermediate buoys are needed. Pamphlets with information on the protected areas boundaries are available for tour guides but not for fishermen.

A very interesting demarcation system for shallow water areas has been developed by BAS at Half Moon Caye. This demarcation system uses PVC pipes cemented in sandy bottom in areas up to 12 to 15 feet of water depth.

### **8. Bio-physical Monitoring (Tier 3)**

Rationale: biophysical monitoring covers water temperature, light intensity, coral reefs, seagrass, Nassau grouper spawning aggregation sites, conch and lobster, coral bleaching, and sea turtle nesting. The information gathered through these monitoring efforts is analyzed and used for management purposes. The management plan does not have numerical goals for conservation. The monitoring methods include the MBRS protocol, the Long Term Atoll Monitoring Protocol (LAMP) and the coral bleaching bar drop monitoring method. Both the Fisheries Department and the University of Belize's Environmental Research Institute provide technical guidance for monitoring.

### **9. Socio-economic Monitoring (Tier 1)**

Rationale: even though some assessments have been conducted, there is no existing socioeconomic monitoring activity.

### **10. MPA Effectiveness Evaluation (Tier 3)**

Rationale: data from research and enforcement efforts are used to assess MPA effectiveness. The results are compared to adjust management activities. No standard methods are used to measure MPA effectiveness.

### **11. Stakeholder Engagement (Tier 2)**

Rationale: main stakeholders at these sites include dive operators and tour guides, fishermen, and land owners. Both dive operators and land owners were involved in management planning, but not fishermen. Dive operators are also involved in management to a certain extent.

### **12. Financing (Tier 2)**

Rationale: the main source of financial resources is entrance fees. Entrance fees cover almost 70% of all budget needs. Other funding agencies provide other funding. Entrance fee to the site is \$ 30 USD per day.

### **13. Outreach and Education (Tier 2)**

Rationale: some outreach and education activities in support of the MPA are ongoing. More funding is needed to increase outreach and education activities. There is an educator and a Community Liaison Officer at BAS that cover all protected areas managed by BAS.

### **14. Conflict Resolution Mechanism (Tier 2)**

Rationale: no systematic conflict resolution mechanisms exist. A recent conflict with the collection of entrance fees was sorted out by the MPA manager. There is need for conflict resolution capacity building.

**15. Climate Change Resilience (Tier 2)**

Rationale: knowledge of climate change resilience has been acquired through reading. A few management actions intended to increase the resilience of coral reef resources to the effects of climate change are used. For example a coral bleaching monitoring program is in place.

**16. Alternative Livelihoods (Tier 1)**

Rationale: a socioeconomic assessment was conducted and some alternative livelihood activities have been implemented including dive training.

**17. Fisheries Management (N/A )**

Rationale: no fishing is allowed at Half Moon Caye and Blue Hole Natural Monuments.

**18. Integrated Coastal Management (N/A )**

Rationale: site is distant from coast.

**19. Sustainable Tourism (Tier 2)**

Rationale: An assessment of tourism activities was conducted in 2009. The assessment established limits of acceptable change (LAC), but carrying capacity has not been established.

**20. Organizational Management (Tier 2)**

Rationale: current staff is half of what is needed. The MPA personnel are also limited in terms of abilities. Both the marine biologist and one ranger need training.

**21. Partnerships/Coordination (Tier 2)**

Rationale: there is an Advisory Committee for Lighthouse Atoll. BAS is a member of the Committee together with stakeholders, land owners, and the Coastal Zone Management Authority. BAS has a formal MoU with the Belize Forestry Department and informal partnerships exist with the Fisheries Department and the Belize National Coast Guard.

**22. Economic Valuation (No)**

Rationale: no economic valuation of the MPA resources has been done. The information is regarded as valuable, in particular for use as guideline for compensation for damages to the resources.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: emergency response method for invasive species is not available. An emergency response protocol for evacuation due to hurricanes is available. Emergency response protocols for ship groundings were developed by the government for implementation at the country level.

**24. Ecosystem Based Management (Yes)**

Rationale: ecosystem-based management principles have been considered in the design and management planning of the MPA. For example, ecosystems were selected as conservation targets in the management plan.



**25. Community Support (High)**

Rationale: Belizeans in general have great support for the Blue Hole, as it is an icon of the country's natural beauties. Half Moon Caye is not so well known.

**26. Government Support (Medium)**

Rationale: support from the government varies from agency to agency. Forestry Department could improve, but the Fisheries Department and the Coast Guard provide medium to high support.

**Management Capacity Priority Needs**

1. Socioeconomic monitoring
2. Alternative livelihoods
3. Financial sustainability

**Priority Capacity Building Approaches**

1. Technical support
2. Higher education courses
3. Learning exchanges

**REFERENCES**

Belize Audobon Society, Oak Foundation, and AVINA (2007) *Half Moon Caye Natural Monument Blue Hole Natural Monument Management Plan 2008 – 2013*.

## South Water Caye Marine Reserve

**Name:** South Water Caye Marine Reserve (SWCMR)

**Country:** Belize

**Size:** covering an area of 47,702 hectares (477.0 km<sup>2</sup>), South Water Caye Marine Reserve is the largest Marine Reserve in Belize. It is located approximately 15 miles southeast of Dangriga town.

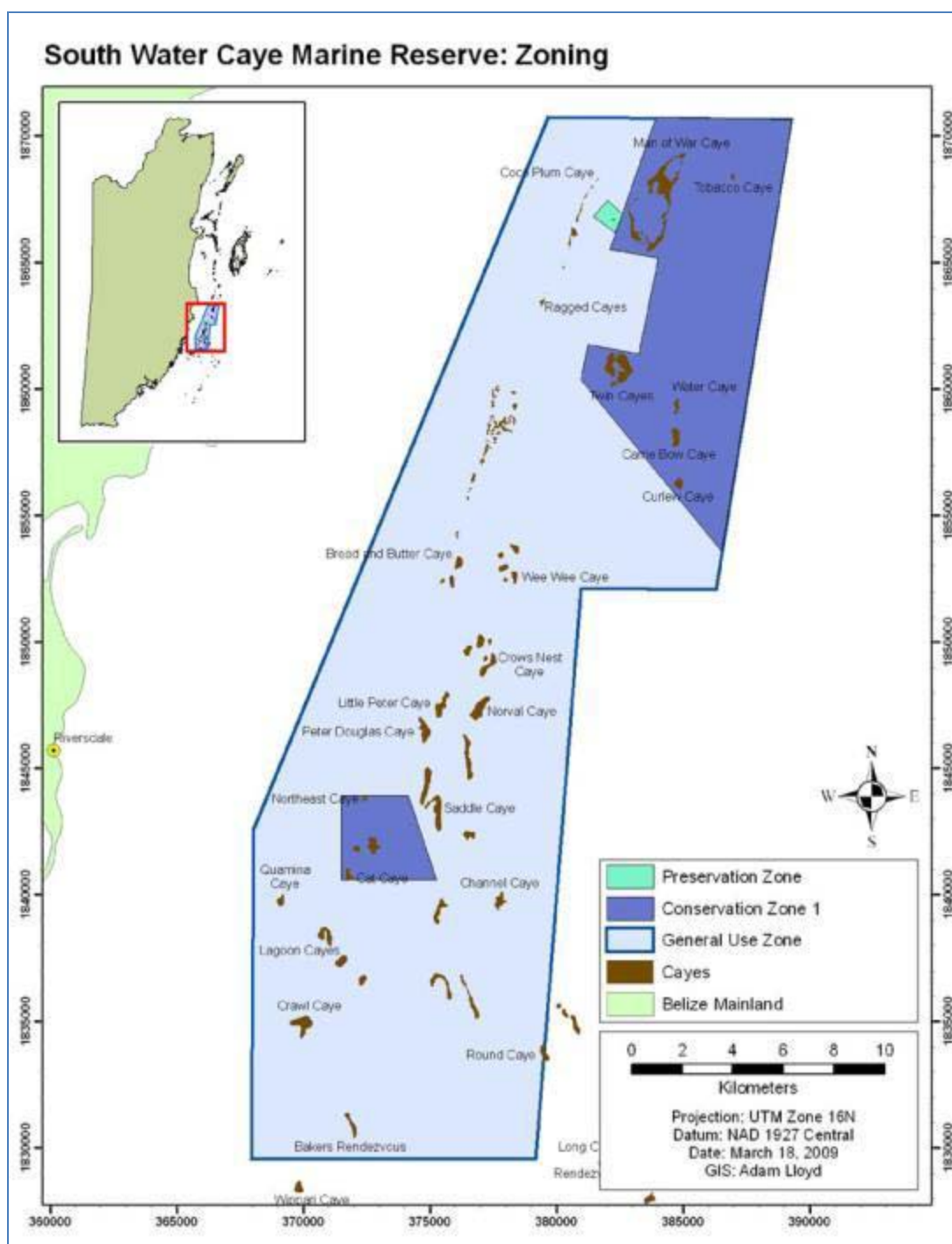
**Management Agency:** Belize Fisheries Department.

**Site Resources:** coral reefs, mangroves, seagrasses, reef fishes, sea turtles, islands and keys, sandy beaches, lobster, conch, spawning aggregations, and whale shark.

**Site Uses:** fishing, tourism, navigation. Multiple-use zoning.

**Threats:** Coastal and caye development, fishing pressure, climate change, oil spills, visitor impact.

**Site contact:** Roberto Carballo, Manager, (501) 666-8308 email: [recarballo@yahoo.com](mailto:recarballo@yahoo.com), and Isaías Mahil, MPA Coordinator, Belize Fisheries Department, email: [isaiasmajil@yahoo.com](mailto:isaiasmajil@yahoo.com)



**Figure 18 Map of South Water Caye Marine Reserve**

Question	Purpose
	Main purpose of the South Water Caye Marine Reserve is the conservation of biodiversity for tourism and fisheries sustainability.

Question	Purpose	Yes	No
1b	Five objectives are included in the management plan, tourism, fisheries, education and public use, recreation and monitoring.	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development			X
4	Governance			X
5	On-site management			X
6	<b>Enforcement*</b>		X	
7	Boundaries		X	
8	Biophysical Monitoring			X
9	Socioeconomic Monitoring		X	
10	MPA Effectiveness Evaluation		X	
11	Stakeholder Engagement			X
12	Financing			X
13	<b>Outreach and Education*</b>	X		
14	Conflict Resolution Mechanism			
15	Resilience to Climate Change		X	
16	Alternative Livelihoods		X	
17	Fisheries Management		X	
18	Integrated Coastal Management			
19	MPA Sustainable tourism		X	
20	Organizational Management		X	
21	<b>Partnerships/Coordination*</b>			X
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation			
23	Emergency Response	X		
24	Ecosystem Based Management	X		
ENABLING ENVIRONMENT				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		X	
26	Government Support	X		

\*Denotes identified priorities for capacity building.

## 2. Management Planning (Tier 3)

Rationale: an approved management plan is being implemented, even though not all aspects of the management plan are currently being attended.

### **3. Ecological Networking (Tier 3)**

Rationale: South Water Caye Marine Reserve forms part of the Southern Belize Reef Complex which is also composed of Laughing Bird Caye National Park, Sapodilla Cayes Marine Reserve, and the Gladden Spit and Silk Cayes Marine Reserve. Management of the SWCMR is coordinated with other marine reserves through the Ecosystems Management Unit of the Fisheries Department.

### **4. Governance (Tier 3)**

Rationale: all activities conducted at the site are governed by specific and clearly defined rules and regulations. Regulations are included in the zoning pattern for the reserve. Nevertheless, there is need to have a summary version of the rules and regulations for usage in the field. Certain amendments to rules and regulations have been developed based on need. For example fishing for sprat and subsistence fishing from docks has been modified. These modifications need to be clarified and placed in writing.

### **5. On-Site Management (Tier 3)**

Rationale: The Belize Fisheries Department employs 5 staff at SWCMR. These include a manager, biologist, 2 rangers and a caretaker who are based at the Twin Cayes ranger station. The staff is responsible for enforcing the fisheries regulations, carrying out patrols, surveillance, research, monitoring, education, outreach, collection of visitor fees, and overall management. A total of four more staff are needed to cover the whole area.

### **6. Enforcement (Tier 2)**

Rationale: there is inconsistent enforcement of rules and regulations due to the large size of the reserve. Enforcement is concentrated in the northern part of the reserve, while the southern zone is only visited for enforcement once a week.

### **7. Boundaries (Tier 2)**

Rationale: boundaries and zones of the reserve are clearly defined. Demarcation is not enough in this large size reserve. A brochure with rules and regulations is available, but a newer brochure will also include the map of the reserve with boundaries and zones and the coordinates.

### **8. Bio-physical Monitoring (Tier 3)**

Rationale: current biophysical monitoring efforts include corals, lobster, conch, birds, coral bleaching, turtle nesting, and capture per unit effort of fish species. The management plan does not have numerical goals for biophysical indicators. Even though the reserve is relatively new (1996), monitoring results have already been used to inform management decisions. For example, reef monitoring revealed that fly fishing resulted in fishermen walking on the back reef, with impact on live coral cover. Fly fishermen are not allowed to walk on the reef now. Monitoring methods used include the MBRS Synoptic Monitoring Program protocols for corals and seagrasses, and the bar drop method for coral bleaching. Visual transects are used for conch monitoring

### **9. Socio-economic Monitoring (Tier 2)**

Rationale: socioeconomic monitoring at SWCMR includes daily monitoring of visitors for tourist, Belizeans, fishermen and tour guides. No numerical goals are set in the management plan for socioeconomic indicators. Methods for socioeconomic monitoring include daily patrol census of number of visitors, number of tour guides, and type of activity conducted.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: MPA effectiveness is evaluated but there is no effectiveness monitoring program. Results from effectiveness assessment workshops have been used to adapt management. MPA effectiveness is measured at the upper management level.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: stakeholders are engaged in management planning through participation on the Advisory Committee. The committee includes hotel owners, tourism board, fishermen, the Fisheries Department, Forest Department, and the Town Councils for Dangriga, Hopkins, and Placencia participate. The advisory committee meets four times a year.

#### **12. Financing (Tier 3)**

Rationale: financial resources for the management of the SWCMR are assigned by the Fisheries Department. The annual budget is prepared by the Marine Protected Areas Coordinator. Funds for management of the marine reserves come from taxpayers and entry fees.

#### **13. Outreach and Education (Tier 1)**

Rationale: Little ongoing outreach and education activities exist. There is a need to have an educator on board. Target audiences include schools in the communities, fishermen and tour guides. Funding is needed to hire an educator to develop a plan and implement outreach and education activities.

#### **14. Conflict Resolution Mechanism (Tier )**

Rationale: no conflict resolution mechanisms are in place. Conflicts are resolved as they arise on a case by case basis.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: knowledge of climate change resilience principles was acquired from a workshop. There are specific guidelines for and best management practices to promote resilience. These practices include locating mooring buoys in sites not affected by bleaching and designating specific sites for snorkeling.

#### **16. Alternative Livelihoods (Tier 2)**

Rationale: A socioeconomic assessment was done with the preparation of the management plan. The advisory committee has suggested training stakeholders as site guides as opposed to tour guides, as some illiterate fishermen would want to go into tourism but could not pass a tour guide test.

#### **17. Fisheries Management (Tier 2)**

Rationale: A SWCMR fisheries-specific assessment has been conducted but no fisheries management plan has been developed. For five of the fish species captured at the reserve, specific catch per unit effort data is collected. Other data collected indicate that 80% of the

fishermen fishing in the reserve come from Sarteneja in the northern corner of Belize. The rest of the fishermen come from nearby communities like Hopkins, Dangriga, and Riversdale.

**18. Integrated Coastal Management (Tier N/A)**

Rationale: site is located distant from coastal influences.

**19. Sustainable Tourism (Tier 2)**

Rationale: an assessment of tourism activities and sustainable tourism options has been completed. There is need to assess carrying capacity at the site.

**20. Organizational Management (Tier 2)**

Rationale: MPA personnel are limited in terms of numbers. Four more staff on site and an educator are needed for the SWCMR. People with the necessary skills are available but funding is limited.

**21. Partnerships/Coordination (Tier 3)**

Rationale: the advisory committee is a formally coordinated group of the most important organizations involved in management.

**22. Economic Valuation (Yes)**

Rationale: An evaluation was done at the country level by the World Resources Institute. The information from an economic valuation of the resources would be useful to put in place zoning for swimming, snorkeling, and for compensation for anchor damages and for ship groundings.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: emergency response protocols are in place for ship groundings and for invasive species like lionfish.

**24. Ecosystem Based Management (Yes)**

Rationale: ecosystem-based management is incorporated into management planning through selection of ecosystems as conservation targets.

**25. Community Support (Medium)**

Rationale: more support from local communities is needed. To get this support, it is necessary to inform communities of the rules and regulations. Even though tourist resorts support the MPA, support from the local layman is lacking.

**26. Government Support (High)**

Rationale: government support is adequate considering budget and staff limitations.

**Management Capacity Priority Needs**

1. Outreach and education
2. Enforcement
3. Partnerships / coordination

**Priority Capacity Building Approaches**

1. More staff
2. Training
3. Technical support

#### REFERENCES

South Water Caye Marine Reserve Website (2010) <http://www.swcmr.org/>

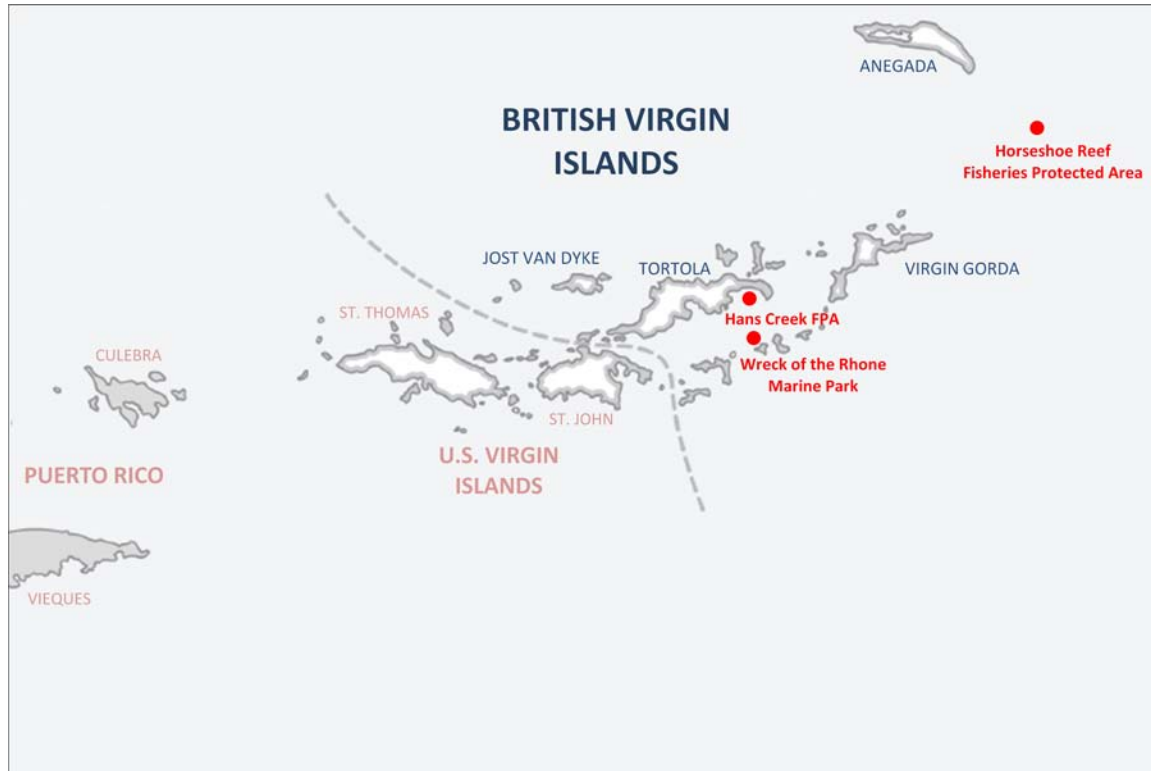


## British Virgin Islands

**Dates of Interviews:** May 2-3, 2011

**Interviewer:** Cindy Rolli and Jeanne Brown – The Nature Conservancy

**Agencies/Organizations Interviewed:** National Park Trust, and Conservation and Fisheries Department



## Hans Creek Fisheries Protected Area

**Name:** Hans Creek Fisheries Protected Area

**Country:** British Virgin Islands

**Size:** 119.4 acres (0.48 km<sup>2</sup>)

**Year Established:** 2003

**Site Resources:** Functional ecosystems: Fish sanctuary, seagrass beds, coral reefs, pelagic and reef fishes.

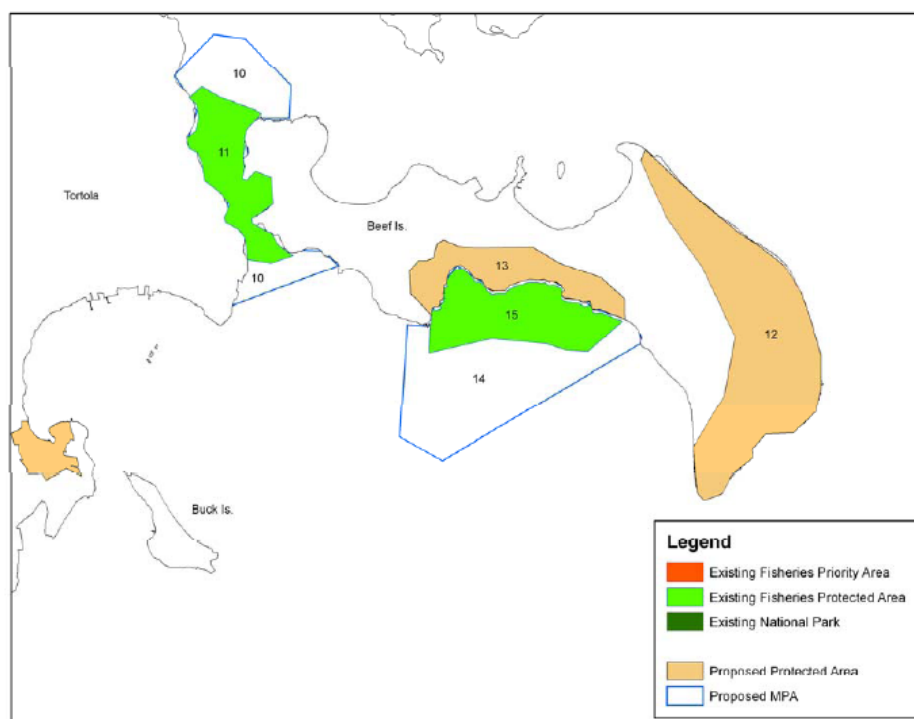
**Management Agency:** Conservation and Fisheries Department (CFD)

**Primary Site Uses:** Most human activity is prohibited in these areas. This includes (but is not limited to) the mooring of boats, diving, building construction and fishing.

**Primary Threats:** Anchoring, illegal fishing, climate change, coastal development, boat waste

**Site Contact:** Mr. Betrand Lettsomme (Chief Conservation Officer), Mr. Mervin Hastings (Marine Biologist), Conservation and Fisheries Department, phone: (284) 494 5681

**Note:** The Conservation and Fisheries Department expressed difficulty picking two sites to focus on due to the lack of bio-physical information about their sites. While Hans Creek and Horseshoe Reef Fisheries Protected Areas were selected as priorities, the CFD expressed a need for biological information for all their sites to better inform management decision-making.



**Figure 19 Map of Beef Island (Site number 15 is the Hans Creek Fisheries Protected Area)**

Question	Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?

	To protect and preserve the breeding grounds and habitats (and allow for regeneration) of aquatic life.
--	---

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning*	x		
3	Ecological Network Development		x	
4	Governance		x	
5	On-site management		x	
6	Enforcement*		x	
7	Boundaries		x	
8	Biophysical Monitoring*	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation	x		
11	Stakeholder Engagement		x	
12	Financing	x		
13	Outreach and Education		x	
14	Conflict Resolution Mechanism		x	
15	Resilience to Climate Change		x	
16	Alternative Livelihoods	x		
17	Fisheries Management		x	
18	Integrated Coastal Management			x
19	MPA Sustainable tourism		x	
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation			x
23	Emergency Response	x		
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support	x		
26	Government Support			x

\*denotes identified priorities for capacity building

## 2. Management Planning (Tier 1)

Rationale: There is currently no management plan developed or implemented for the Hans Creek Fisheries Protected Area (HCFPA). The CFD is interested in ensuring that future planning processes are community-based in nature and include local academic institutions. They would need support for capacity to get this done.

**3. Ecological Networking (Tier 2)**

Rationale: There is some need for better understanding of ecosystem-based management principles in planning and management. Horseshoe Reef and Hans Creek are included in the Protected Area's System Plan (2008) governed by the National Parks Trust. The System Plan rationalises the establishment of a resilient network of areas which support, not only protection of critical habitats such as coral reefs, but also seagrass beds, salt ponds, dry Caribbean forests and mangroves: resources, the protection of which have long been overlooked. At least thirty-three percent (33%) of the nearshore environment and more than thirteen percent (13%) of the Territory's landmass are under some degree of protection.

**4. Governance (Tier 2)**

Rationale: Under the Fisheries Act, 1997, the Minister may declare a fishing priority area and protected area for the conservation of living aquatic resources. The Fisheries Act also provides for the establishment of marine reserves. Under Section 79 of the Act, fourteen (14) fisheries protected areas were declared by the Fisheries Regulations, 2003 (Statutory Instrument No. 20 of 2003). The Fisheries Regulations, 2003, provide a general set of regulations for the Fisheries Protected Areas. No further rules and regulations have been developed for the HCFPA.

Additionally, the preparation of a protected area system plan is mandated by Section 13 of the National Parks Act 2006. Using the legal mechanisms contained within the National Parks Act, 2006, Fisheries Act, 1997 and the Physical Planning Act, 2004; the plan consolidates in one document, all of the areas which are to be managed for sustainability including the Fishery Protect Area's. The Protected Areas System is managed under the National Parks Trust. However, traditionally, the CFD does not require the approval or agreement of the NPT to designate protected areas under any of the laws within its control. Therefore, both institutions have an informal agreement, focused primarily on cross-referencing under the various protected areas legislation designated by both agencies.

**5. On-Site Management (Tier 2)**

Rationale: There is some level of on-site management through the monitoring and surveillance team on a periodic schedule. However, the resources and personnel are insufficient to undertake the necessary on-site management needed for this site.

**6. Enforcement (Tier 2)**

Rationale: There is some level enforcement undertaken through the monitoring and surveillance team on a periodic schedule. However, the resources and personnel are insufficient to undertake enforcement at these sites. There are too few officers for too much area to cover by the CFD, which sometimes is limited by fuel and boats. They also work with other enforcement units such as customs, and the police especially since the enforcement officers do not carry guns.

**7. Boundaries (Tier 2)**

Rationale: Yes, the marine charts have the fisheries area outlined in the physical and electronic charts. However, the boundaries are not clearly marked and provided to the public.

**8. Bio-physical Monitoring (Tier 1)**

Rationale: There is currently no bio-physical monitoring undertaken at The HCFPA. The protocol that has been developed by Overseas Territories Environment Programme (OTEP) is the generally accepted protocol with used during the last bleaching event. That is a modified Atlantic and Gulf Rapid Reef Assessment for bleaching (BLAGGRA). The challenge in carrying out bio-physical monitoring is partially based on in-house capacity (most notably time dedication), however it is mostly based on a lack of capacity in data processing, quality control, report writing, etc.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: There is currently no existing socioeconomic monitoring activity conducted for The HCFPA. Technical support would be needed to support this work.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: There has been no MPA effectiveness evaluation conducted at Hans Creek. The need for a management plan was identified as a priority prior to carrying out MPA Effectiveness work.

#### **11. Stakeholder Engagement (Tier 2)**

Rationale: CFD undertakes continual stakeholder engagement on activities carried out by the Department starting with the establishment of the 1986 Fisheries Act.

#### **12. Financing (Tier 1)**

Rationale: CFD considers financing a major constraint in management of the Fisheries Protected Areas, noting that there is a small budget allocated by central government relative to their needs and other agencies' needs. They have not applied for international funding, as a UK territory many external funds are unavailable to them. Management mentioned that it would be useful to have a list of the types of funding appropriate for particular needs, deadlines, and other grant information.

#### **13. Outreach and Education (Tier 2)**

Rationale: CFD has an extensive outreach and education programme. The Department conducts a highly successful summer camp for school-aged children in addition to supporting and participating in conservation activities throughout the year for the general public, fishermen, and other stakeholders. However, the outreach and education program is not specifically targeted towards the Protected Area's Fisheries. There is some consideration that education and outreach need to be directed to different types of audience: fishermen, BVI islanders, policy and legislature.

#### **14. Conflict Resolution Mechanism (Tier 2)**

Rationale: CFD indicated that there is no conflict resolution mechanism in place, but that everyone knows who to call to get conflicts resolved. There is very little need for such a mechanism. There was discussion of the need for an emergency hotline to be established.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: Many of the fish protected areas were established before there was much consideration for climate effects. CFD has actively pursued incorporating Climate Change Resilience activities into the Department's annual work plan. The Department has recently prepared a comprehensive document, the Virgin Islands Green Paper, which documents threats and potential impacts to the natural resources as well as proposed activities to increase

resilience to Climate Change. There is some need for political will to support climate actions, but overall support is improving with the education and outreach. During the last bleaching event, there was access to the sites, but essentially the message was to keep quiet about bleaching to not discourage visitation to the BVI and the reefs. This attitude may reflect a need for more outreach to decision makers on climate change impacts and needs for adaptation strategies.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: Socioeconomic assessments of the impacts of MPA regulations have not been assessed for the HCFPA, therefore, no alternative livelihoods have been developed.

#### **17. Fisheries Management (Tier 2)**

Rationale: There have been no site specific fisheries assessments conducted for Hans Creek. A need to conduct specific fisheries assessments at all of the sites was mentioned and the need to develop a list of priority studies was noted. This information could be provided when researchers, students, institutions come to CFD, to direct the kind of research that will inform management priorities.

#### **18. Integrated Coastal Management (Tier 3)**

Rationale: CFD is a member of the Planning Authority which is responsible for developing the land use plans for the Territory in addition to reviewing and assessing development applications submitted to the Town and Country Planning Department.

#### **19. Sustainable Tourism (Tier 2)**

Rationale: Some carrying capacity assessments have been conducted on the number of sailing and fishing vessels in the Territory. However, the Fisheries Protected Areas do not allow most tourism activities. Additional work would be needed to further assess and develop sustainable tourism plans.

#### **20. Organizational Management (Tier 2)**

Rationale: There is need for additional training within the CFD staff for management of protected areas. CFD emphasizes cross-training for different areas for ongoing skills enhancement.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: Coordination exists between the NPT and the CFD, and several good relationships with other agencies exist. However, issues do exist and there is need for improved coordination. For example, CFD used to be a member of Parks Trust Board but they are not longer a member. This partnership is important for coordination among these agencies.

#### **22. Economic Valuation (No)**

Rationale: There has not been an economic valuation carried out for the HCFPA. There is a need for economic valuation of the associated beaches, reef and watershed. It would be important to have done, especially with potential new development, to influence planning decisions. The CFD acknowledged this study should not be done by one agency, but will need to include Development Planning Unit, Department of Disaster Management., National Parks Trust, colleges, universities, fishermen, etc.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: CFD is the lead agency to respond and provide the protocol for impacts on protected areas.

**24. Ecosystem Based Management (Yes)**

Rationale: Fishery protected areas were defined based on the ecosystem functions that are uniquely sustained for each area.

**25. Community Support (High)**

Rationale: Community support has historically and is currently high for protection of fishery protected areas.

**26. Government Support (Low)**

Rationale: It is believed that government support is low in part because CFD is not a revenue generating agency.

**Management Capacity Priority Needs**

1. **Management Planning** - Development of Management Plan for Protected Areas (specifically Conservation Action Planning)
2. **Bio-physical Monitoring** - including training on fisheries stock assessment and management
3. **Enforcement** - (including physical resources such as a vessel as well as training)

**Priority Capacity Building Approaches**

1. Higher Education (Statistician, GIS)
2. Technical Support (Data analysis)
3. Training in GIS and other management tools with some kind of follow-up. The issues usually is getting an intensive training course that isn't immediately applicable, then getting caught up in regular work load activities, never getting a chance to apply what's learned, needed some further support

**References**

Gardner, Lloyd, Smith Abbott, Joseph and Woodfield-Pascoe, Nancy. 2008. *British Virgin Islands Protected Areas System Plan 2007-2017*. BVI National Parks Trust. Tortola. January 8, 2008.

The Government of the Virgin Islands (1997) *Virgin Islands Fisheries Act*.

The Government of the Virgin Islands (2003) *Virgin Islands Fisheries Regulations*.

The Government of the Virgin Islands (2006) *National Parks Act*.

# Horseshoe Reef Fisheries Protected Area

**Country:** British Virgin Islands  
**Size:** 10,144.8 acres (41.05 km<sup>2</sup>)  
**Site Resources:** Functional ecosystems: Fish sanctuary, seagrass beds, coral reefs, pelagic and reef fishes.  
**Management Agency:** Conservation and Fisheries Department (CFD)  
**Primary Site Uses:** Most human activity is prohibited in these areas. This includes (but is not limited to) the mooring of boats, diving, building construction and fishing.  
**Primary Threats:** Anchoring, illegal fishing, climate change, coastal development, boat waste  
**Site Contact:** Mr. Betrand Lettsomme (Chief Conservation Officer), Mr. Mervin Hastings (Marine Biologist), Conservation and Fisheries Department, phone: (284) 494 5681  
**Note:** The Conservation and Fisheries Department expressed difficulty picking two sites to focus on due to the lack of bio-physical information about their sites. While Hans Creek and Horseshoe Reef Fisheries Protected Areas were selected as priorities, the CFD expressed a need for biological information for all their sites to better inform management decision-making.

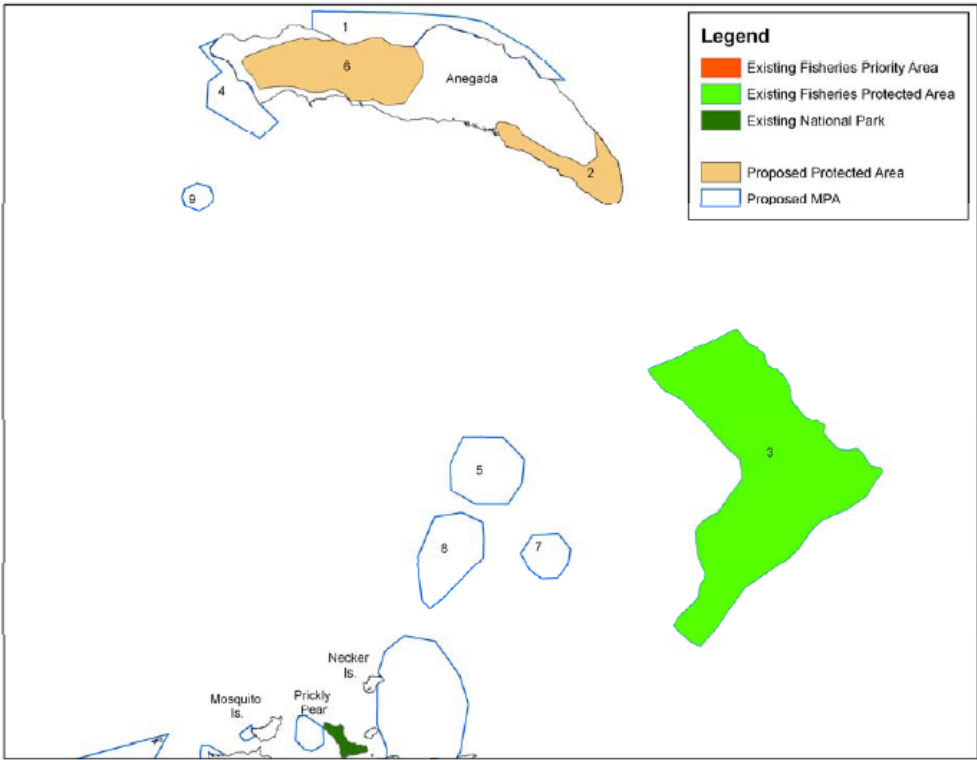


Figure 20 Map of Anegada Island (Site number 3 is the Horseshoe Reef Fisheries Protected Area)

Question	Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	To protect and preserve the breeding grounds and habitats (and allow for



	regeneration) of aquatic life.
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Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning*	x		
3	Ecological Network Development		x	
4	Governance		x	
5	On-site management		x	
6	Enforcement*		x	
7	Boundaries		x	
8	Biophysical Monitoring*	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation	x		
11	Stakeholder Engagement		x	
12	Financing	x		
13	Outreach and Education		x	
14	Conflict Resolution Mechanism		x	
15	Resilience to Climate Change		x	
16	Alternative Livelihoods	x		
17	Fisheries Management		x	
18	Integrated Coastal Management			x
19	MPA Sustainable tourism		x	
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation			x
23	Emergency Response	x		
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support	x		
26	Government Support			x

\*denotes identified priorities for capacity building

## 2. Management Planning (Tier 1 )

Rationale: There is currently no management plan developed or implemented for the Horseshoe Reef Fisheries Protected Area (HRFPA). The CFD is interested in ensuring that future planning processes are community-based in nature and include local academic institutions. They would need support for capacity to get this done.

**3. Ecological Networking (Tier 2)**

Rationale: There is some need for better understanding of ecosystem-based management principles in planning and management. Horseshoe Reef and Hans Creek are included in the Protected Area's System Plan (2008) governed by the National Parks Trust. The System Plan rationalises the establishment of a resilient network of areas which support, not only protection of critical habitats such as coral reefs, but also seagrass beds, salt ponds, dry Caribbean forests and mangroves: resources, the protection of which have long been overlooked. At least thirty-three percent (33%) of the nearshore environment and more than thirteen percent (13%) of the Territory's landmass are under some degree of protection.

**4. Governance (Tier 2)**

Rationale: Under the Fisheries Act, 1997, the Minister may declare a fishing priority area and protected area for the conservation of living aquatic resources. The Fisheries Act also provides for the establishment of marine reserves. Under Section 79 of the Act, fourteen (14) fisheries protected areas were declared by the Fisheries Regulations, 2003 (Statutory Instrument No. 20 of 2003). The Fisheries Regulations, 2003, provide a general set of regulations for the Fisheries Protected Areas. No further rules and regulations have been developed for the HRFPA.

Additionally, the preparation of a protected area system plan is mandated by Section 13 of the National Parks Act 2006. Using the legal mechanisms contained within the National Parks Act, 2006, Fisheries Act, 1997 and the Physical Planning Act, 2004; the plan consolidates in one document, all of the areas which are to be managed for sustainability including the Fishery Protect Area's. The Protected Areas System is managed under the National Parks Trust. However, traditionally, the CFD does not require the approval or agreement of the NPT to designate protected areas under any of the laws within its control. Therefore, both institutions have an informal agreement, focused primarily on cross-referencing under the various legislation the protected areas designated by both agencies.

**5. On-Site Management (Tier 2)**

Rationale: There is some level of on-site management through the monitoring and surveillance team on a periodic schedule. However, the resources and personnel are insufficient to undertake the necessary on-site management needed for this site.

**6. Enforcement (Tier 2)**

Rationale: There is some level of enforcement undertaken through the monitoring and surveillance team on a periodic schedule. However, the resources and personnel are insufficient to undertake enforcement at these sites. There are too few officers for too much area to cover by the CFD, which sometimes is limited by fuel and boats. They also work with other enforcement units such as customs, and the police especially since the enforcement officers do not carry guns.

**7. Boundaries (Tier 2)**

Rationale: Yes, the marine charts have the fisheries area outlined in the physical and electronic charts. However, the boundaries are not clearly marked and provided to the public.

**8. Bio-physical Monitoring (Tier 1)**

Rationale: There is currently no bio-physical monitoring undertaken at Horseshoe Reef. The protocol that has been developed by OTEP is the generally accepted protocol used during the last bleaching event. That is a modified Atlantic and Gulf Rapid Reef Assessment for bleaching (BLAGGRA). The challenge in carrying out bio-physical monitoring is partially based on in-house capacity (most notably time availability), however it is mostly based on a lack of capacity in data processing, quality control, report writing, etc.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: There is currently no existing socioeconomic monitoring activity conducted for Horseshoe Reef. Technical support would be needed to support this work.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: There has been no MPA effectiveness evaluation conducted at Horseshoe Reef. Need for a management plan was identified as a priority prior to carrying out MPA Effectiveness work.

#### **11. Stakeholder Engagement (Tier 2)**

Rationale: CFD undertakes a continual stakeholder engagement on activities carried out by the Department starting with the establishment of the 1986 Fisheries Act.

#### **12. Financing (Tier 1)**

Rationale: CFD considers financing a major constraint in management of the Fisheries Protected Area, noting that there is a small budget allocated by central government relative to their needs and other agencies' needs. They have not applied for international funding; as a UK territory many external funds are unavailable to them. Management mentioned that it would be useful to have a list of the types of funding appropriate for particular needs, deadlines, and other grant information.

#### **13. Outreach and Education (Tier 2)**

Rationale: CFD has an extensive outreach and education program. The Department conducts a highly successful summer camp for school-aged children in addition to supporting and participating in conservation activities throughout the year for the general public, fishermen, and other stakeholders. However, the outreach and education program is not specifically targeted towards the Fisheries Protected Area. There is some consideration that education and outreach need to be directed to different types of audience: fishermen, BVI islanders, policy and legislature.

#### **14. Conflict Resolution Mechanism (Tier 2)**

Rationale: CFD indicated that there is no conflict resolution mechanism in place, but that everyone knows who to call to get conflicts resolved. There is very little need for such a mechanism. There was discussion of the need for an emergency hot line to be established.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: Many of the fish protected areas were established before there was much consideration for climate effects. CFD has actively pursued incorporating Climate Change Resilience activities into the Department's annual work plan. The Department has recently prepared a comprehensive document, the Virgin Islands Green Paper, which documents threats and potential impacts to the natural resources as well as proposed activities to increase

resilience to Climate Change. There is some need for political will to support climate actions, but overall support is improving with the education and outreach. During the last bleaching event, there was access to the sites, but essentially the message was to keep quiet about bleaching to not discourage visitation to the BVI and the reefs. This attitude may reflect a need for more outreach to decision makers on climate change impacts and needs for adaptation strategies.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: Socioeconomic assessments of the impacts of MPA regulations have not been conducted for Horseshoe Reef, therefore, no alternative livelihoods have been developed.

#### **17. Fisheries Management (Tier 2)**

Rationale: There have been no site-specific fisheries assessments conducted for Horseshoe Reef. A need to conduct specific fisheries assessments at all of the sites was mentioned and the need to develop a list of priority studies was noted. This information could be provided when researchers, students, institutions come to CFD, to conduct the kind of research that will inform management priorities.

#### **18. Integrated Coastal Management (Tier 3)**

Rationale: CFD is a member of the Planning Authority which is responsible for developing the land use plans for the Territory in addition to reviewing and assessing development applications submitted to the Town and Country Planning Department.

#### **19. Sustainable Tourism (Tier 2)**

Rationale: Some carrying capacity assessments have been conducted on the number of sailing and fishing vessels in the Territory. However, the Fisheries Protected Areas do not allow most tourism activities. Additional work would be needed to further assess and develop sustainable tourism plans.

#### **20. Organizational Management (Tier 2)**

Rationale: There is need for additional training within the CFD staff for management of protected areas. CFD emphasized cross-training for different areas for ongoing skills enhancement.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: Coordination exists between the NPT and the CFD, and several good relationships with other agencies exist. However, issues do exist and there is need for improved coordination. For example, CFD used to be a member of Parks Trust Board but they are no longer a member. This partnership is important for coordination among these agencies.

#### **22. Economic Valuation (No)**

Rationale: There has not been an economic valuation carried out for Horseshoe Reef. There is a need for economic valuation of the beaches, reef and watershed there. It would be important to have done, especially with potential new development, to influence planning decisions. The CFD acknowledged this study should not be done by one agency, but will need to include Development Planning Unit, Department of Disaster Management., National Parks Trust, colleges, universities, fishermen, etc.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: CFD is the lead agency to respond and provide the protocol for impacts on protected areas.

**24. Ecosystem Based Management (Yes)**

Rationale: Fishery protected areas were defined based on the ecosystem functions that are uniquely sustained for each area.

**25. Community Support (High)**

Rationale: Community support has historically and is currently high for protection of fishery protected areas.

**26. Government Support (Low)**

Rationale: It is believed that government support is low in part because CFD is not a revenue generating agency.

**Management Capacity Priority Needs**

1. **Management Planning** - Development of Management Plan for Protected Areas (specifically Conservation Action Planning)
2. **Bio-physical Monitoring** - including training on fisheries stock assessment and management
3. **Enforcement** - (including physical resources such as a vessel as well as training)

**Priority Capacity Building Approaches**

1. Higher Education (Statistician, GIS)
2. Technical Support (Data analysis)
3. Training in GIS and other management tools with some kind of follow-up. The issues usually is getting an intensive training course that isn't immediately applicable, then getting caught up in regular work load activities, never getting a chance to apply what's learned, needed some further support

**References**

Gardner, Lloyd, Smith Abbott, Joseph and Woodfield-Pascoe, Nancy. 2008. *British Virgin Islands Protected Areas System Plan 2007-2017*. BVI National Parks Trust. Tortola. January 8, 2008.

The Government of the Virgin Islands (1997) *Virgin Islands Fisheries Act*.

The Government of the Virgin Islands (2003) *Virgin Islands Fisheries Regulations*.

The Government of the Virgin Islands (2006) *National Parks Act*.

## Wreck of the Rhone Marine Park

**Country:** British Virgin Islands

**Size:** 766 acres (3.09 km<sup>2</sup>). The park stretches from Lee Bay on Salt Island westward to include Dead Chest Island.

**Site Resources:** Functional ecosystems: Fish sanctuary, seagrass beds, coral reefs, pelagic and reef fishes. Historic shipwreck of a royal mail steamer (RMS)

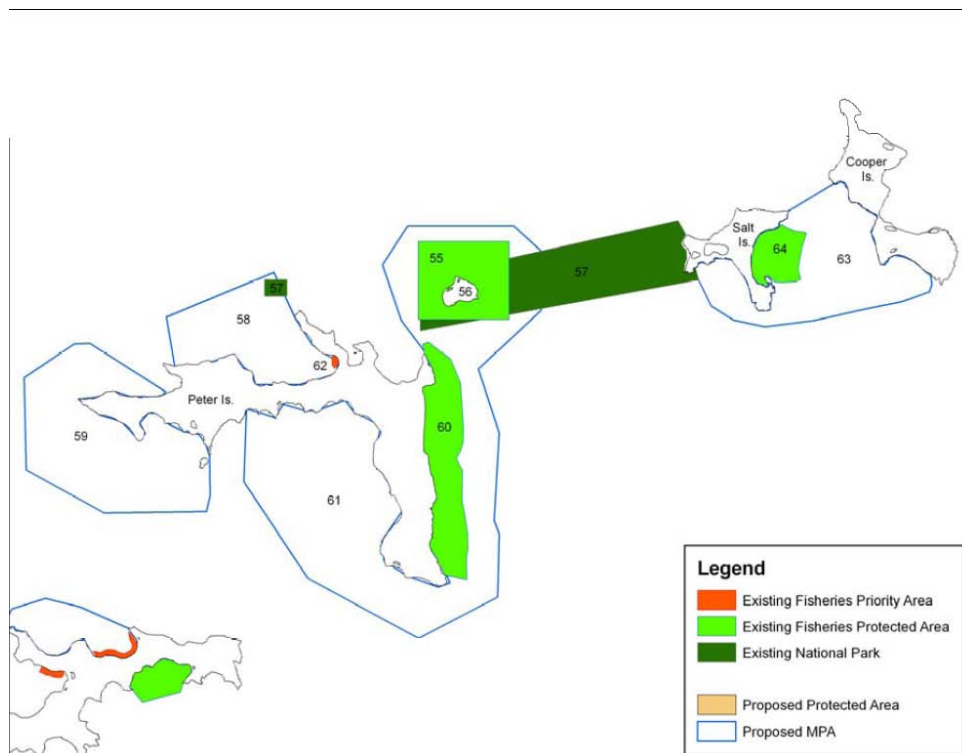
**Management Agency:** National Parks Trust

**Primary Site Uses:** Scuba diving, boating

**Primary Threats:** Anchor damage and boat waste (liquid). Fishing is a secondary threat (illegal fishing - trap and line).

**Site Contact:** Joseph Smith Abbot (Director) email: [director@bvinationalparkstrust.org](mailto:director@bvinationalparkstrust.org), Esther Georges (Deputy Director), Nancy Woodfield-Pascoe (Planning Coordinator) National Parks Trust: 284-494-3904.

**Note:** The National Parks Trust expressed that focusing on the site level was challenging as their efforts are aimed at managing the Protected Area System as a whole. As such, the answers to the survey often reflect both what is happening at the site level but also the situation of the system level of management as they are intricately linked.



**Figure 21 Map of Peter, Salt, and Cooper Island (Site number 57 is the Wreck of the Rhone Marine Park).**

Question	Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	To provide recreational opportunities to maintain and improve the quality of life for residents and visitors, for present and future generations. The Wreck of the Rhone is a historic shipwreck of a royal mail steamer and is the most popular dive site in the Virgin Islands. The site is managed for recreational diving and snorkelling. No fishing is permitted.

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	Ecological Network Development			x
4	Governance			x
5	On-site management			x
6	Enforcement		x	
7	Boundaries			x
8	Biophysical Monitoring	x		
9	Socioeconomic Monitoring			x
10	MPA Effectiveness Evaluation	x		
11	Stakeholder Engagement			x
12	Financing			x
13	Outreach and Education			x
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change			x
16	Alternative Livelihoods		x	
17	Fisheries Management	x		
18	Integrated Coastal Management		x	
19	MPA Sustainable tourism		x	
20	Organizational Management			x
21	Partnerships/Coordination			x
	Assessment Area	YES		NO
22	Economic Valuation			x
23	Emergency Response	x		
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low

25	Public Support	x		
26	Government Support	x		

## 2. Management Planning (Tier 3)

Rationale: There is no specific management plan developed for the Wreck of the Rhone Marine Park (WRMP) because protected areas are managed under a system-wide management framework. NPT has been engaged in management of marine protected areas since 1992. While the NPT has prepared management plans for 5 of the sites within the protected areas system for which it has responsibility, WRMP has not yet been completed. The number of management plans completed will increase during the 2007-2017 System Plan Period, as the NPT is currently engaged in management planning for a number of other sites. The Trust has also developed a standard guide for preparation of future management plans.

## 3. Ecological Networking (Tier 3)

Rationale: The preparation of a protected-area system plan was mandated by Section 13 of the National Parks Act 2006. The Protected Areas System Plan (2008) provides the policy framework for the management of protected areas in the British Virgin Islands (BVI). It provides:

- A statement of the goals for the system of protected areas;
- An articulation of the institutional arrangements to be established for protected area management;
- An articulation of the support systems needed for system development and management during the Plan Period;

Using the legal mechanisms contained within the National Parks Act, 2006, Fisheries Act, 1997 and the Physical Planning Act, 2004; the plan consolidates in one document, all of the areas which are to be managed for sustainability.

The System of Protected Areas is defined in the Systems Plan, which will meet a multiplicity of needs whether they are for strict protection, recreation, fishing or a combination of any of these activities. The System Plan rationalizes the establishment of a resilient network of areas which support, not only protection of critical habitats such as coral reefs, but also seagrass beds, salt ponds, dry Caribbean forests and mangroves, the protection of which have long been overlooked. At least thirty-three percent (33%) of the near shore environment and more than thirteen percent (13%) of the Territory's landmass are under some degree of protection. The extent and location of the expanded protected areas was largely based on MARXAN analysis.

Additionally, the final approved System Plan (2008) provides strategic guidance on the mechanisms and procedures for managing protected areas, including the mechanisms for coordinating protected area planning with other national development planning processes.

## 4. Governance (Tier 3)

Rationale: The National Parks Trust (NPT) is legally responsible for management of the protected areas system. Currently, the NPT develops policy and undertakes management activities for 20 sites that it directly manages. Of these, the WRMP is the only site primarily containing coral reefs. The WRMP was legally established in 1980 under the Marine Parks and Protected Areas Ordinance (1979). However, this Ordinance has since been repealed and the



legal designation of the site is now under the National Parks Act, 2006. This Act also provides a legal framework for management and a general set of regulations for all National Parks. Additionally, further regulations are set forth through the National Parks Regulations 2008. This Act provides a legal mechanism for regulating all activities within Marine Protected Areas. The NPT also has authority to develop further regulations for a site specifically through management plans. The WRMP does not currently have a management plan however so regulations are defined through the Acts stated above.

### **5. On-Site Management (Tier 3)**

Rationale: The on-site management process is formalized, but there is not one person stationed at this location, but rather a scheduled surveillance (twice a week to the Wreck of the Rhone) and reporting system developed among six dedicated staff members. However, NPT does not feel that staff stationed permanently on the site is necessary. In addition, there is an informal stakeholder-based surveillance system including dive and yacht operators. There is long-term strategic planning to look specifically at management of sites.

### **6. Enforcement (Tier 2 )**

Rationale: Enforcement efforts include weekly patrols conducted by the NPT Marine Wardens in order to assess the condition of the mooring buoys. The Marine Wardens are required to undertake an extensive three to six-month local training program to become fully authorized under the Police Commissioner. However, management noted the need for additional personnel and training focused more directly on natural resource management enforcement issues. It was agreed that this could be undertaken outside of the territory. It was mentioned that a fairly recent site exchange with the USVI National Park Wardens was extremely beneficial for the members of the NPT staff.

### **7. Boundaries (Tier 3)**

Rationale: The boundaries have been clearly defined both within the legal framework as well as within the System Plan. All mooring sites are available on chart maps including those within the WRMP. The network itself is well defined and approved at the highest levels. Each area within the proposed system of protected areas has been assigned a management category using the information gathered from the stakeholders and the assessment of conservation value attached to the area. For instance, in areas where pre-existing uses included fishing or diving, a management category of protected landscape/seascape may have been prescribed so that multiple uses may be managed along with the protection of the natural resource. Therefore, each site within the protected areas system has been zoned for management category.

### **8. Bio-physical Monitoring (Tier 1 )**

Rationale: A thorough marine survey of the substrate was conducted in September 2004, as part of an Overseas Territories Environment Programme (OTEP) Marine Project. However, bio-physical monitoring has not been done on a regular basis despite the inclusion of this activity in the Annual Work Plan prepared by NPT. Additional personnel, training and coordination with existing programs (i.e. Reef Check) were indicated as needs to support bio-physical monitoring activities.

### **9. Socio-economic Monitoring (Tier 3 )**

Rationale: Regular patrol and surveillance results in extensive regular reporting on use dynamics of the NPT areas that include type of user, compliance, use of permits, and activities

taking place at the sites. The MPA, the Wreck of the Rhone provides economic benefits to the local population through chartering and diving intricately involved and linked to the management of the MPA. A Social and Economic Impact Study was carried out in 1997 for the Wreck of the Rhone to “to assess the current and potential economic and social benefits of the Wreck of the Rhone Marine Park (referred to as “WRMP” from now on), in an effort to provide recommendations to the Territory in ways to enhance these benefits.” (Woodfield, 1997). This study focused on visitor information only. There is also some socio-economic information (# of boats, who uses areas) with the DPU but more information is needed. Socio-economic information has not been collected regarding knowledge, attitudes, and perceptions of local stakeholders regarding the site.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: An assessment of protected area management at both the system and site levels has not been undertaken to date. An initial assessment in 2004 resulted in the development of the project “Assessment and Improved Management of New and Existing Marine Protected Areas in the British Virgin Islands”, implemented as part of the OTEP Project. The staff were involved in a NOAA-led workshop that emphasized use of “How is your MPA Doing?” to develop site level indicators of success but the evaluation was never actually completed. The NPS is interested in carrying out an Effectiveness Evaluation at the system level (considering RAPPAM or possibly METT style protected area system evaluations) however not enough time has passed since the plan was written to be in a position to effectively evaluate the MPA.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: It is unclear at this time, how stakeholders were consulted during the designation process for the Wreck of the Rhone Marine Park in 1980. However, the System Plan was developed through a stakeholder based consultative process, including, but not limited to fishermen, dive operators, charter companies, governmental agencies, and tourism sector. These partners were invited to a series of public meetings where their input was sought on the proposed system of protected areas. Several maps of the proposed network of protected areas were presented for comment. Existing uses of the marine environment across the Territory were documented by the stakeholders on the physical maps presented at the various meetings. The input received from all stakeholders was entered in an unfiltered manner into a map which documented existing resource uses up to the year 2006.

#### **12. Financing (Tier 3)**

Rationale: Approximately two-thirds of NPT’s management budget is supported by the established mooring system implemented in the British Virgin Islands. The funds from the mooring system are predicted to be sustainable over the long term. The NPT has provided assistance in the form of mentorship with some countries to help develop a similar model for funding. However, planned increase in cruise tourism, the increasing threats from natural disasters, and the vulnerability of the sites in the protected areas system will increase significantly in the medium term. There is some concern that this financing system cannot be sustained in the long-term, and they would like to see some legislative support for 20+ years of building revenue.

#### **13. Outreach and Education (Tier 3)**

Rationale: There is a daily interaction with stakeholders on a one-to-one basis. Education and outreach programs have been implemented consistently, including PSAs, and largely target

issues surrounding anchor damage. Target audiences include general public, children, visitors and related industry. Improvements could be made to outreach programs to influence target audiences. For example, there is a need to target education and outreach materials to decision makers, legislators and the judicial sector

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: A formal mechanism has not been established; however, there are very few issues that have arisen over time. In general, the fishing community contacts the Conservation and Fisheries Department, and the diving community contacts the National Parks Trust.

#### **15. Climate Change Resilience (Tier 3)**

Rationale: While site specific actions to address climate change impacts have not been identified, the systems plan was designed to increase resilience of coral reef resources to the effects of climate change. The site management plan will include actions necessary to avoid or minimize impacts and spread risk due to climate change. There is a significant initiative by Conservation and Fisheries Department (CFD) to develop climate change strategies.

#### **16. Alternative Livelihoods (Tier 2)**

Rationale: This Protected areas support the local community in many ways, such as providing livelihoods and the indirect provision of services related to the protected area. These areas play an important role in protecting natural resources that are critical for the productivity of commercial species, such as fish, and the protection of landscapes and seascapes that represent the Territory's natural heritage. The NPT has expressed that there is little need for alternative livelihoods and therefore no programs have been implemented that specifically provide options for alternative livelihoods.

#### **17. Fisheries Management (Tier 1)**

Rationale: No site-specific fisheries management assessment has been conducted.

#### **18. Integrated Coastal Management (Tier 2)**

Rationale: The linkage between protected areas and other development strategies, such as land use planning and tourism, continue to be developed between the protected areas system and the land development sectors. Discussions have been initiated with institutions in the tourism sector to address issues related to site use and marketing. Other initiatives need to be strengthened and broadened to include other sectors such as agriculture.

#### **19. Sustainable Tourism (Tier 2)**

Rationale: Carrying capacity assessments – There are concerns that some sites are being overused, while others are adversely impacted from activities taking place outside the boundaries of the sites. The need to undertake carrying capacity assessments of the site particularly in respect of tourism, has been articulated. However, there has been no agreement on methodology to be used, scope of the assessment, or timetable for implementation. The NPT and Tourist Board will work together to develop a programme, and select appropriate methodologies, for carrying capacity assessments in the most heavily used protected areas of which the WRMP is one of these sites.

#### **20. Organizational Management (Tier 3)**

Rationale: The NPT and CFD have benefited from capacity building activities in 2004-2005, primarily training in survey of marine benthic habitats. The addition of greater responsibilities to the NPT, primarily management of the “recreational” mooring buoy system and the management of historic sites, has resulted in the need for a wider range of skill sets in the staff, as well as increased staffing levels. There is quite a bit of human-resources development for staff.

#### **21. Partnerships/Coordination (Tier 3)**

Rationale: The NPT works with a number of other institutions in the discharge of its duties. The collaborative activities range from research to public awareness and the partners are both internal and external institutions, and include customs and tourism agencies. There is the potential for those partnerships to be broadened and become more formalized in a number of cases. The NPT will pursue the continued development of partnership arrangements with public, private, and civil society institutions. As part of that process, it is planned that an annual Protected Areas Forum will be held. The annual Protected Areas Forum will be the mechanism wherein the protected areas management institutions report to the partner institutions and stakeholders concerning the state of protected areas in the BVI for the past year. The process will be coordinated by the NPT, who will ensure that a combined report from all the management institutions is circulated prior to the actual event. The Forum will usually take the form of a one-day conference, in which the management institutions report to the stakeholders, as well as receive feedback on ongoing and planned initiatives. The report (proceedings) of the Forum will be circulated to the participants, and made available to the general public. One specific area of interest for further coordination was with the Reef Check program. Currently data is collected but it not analyzed and provided back to the NPT to support decision making.

#### **22. Economic Valuation (No)**

Rationale: There has not been a recent economic valuation conducted for the Wreck of the Rhone. A Social and Economic Impact Study was carried out in 1997 for the Wreck of the Rhone to “to assess the current and potential economic and social benefits of the Wreck of the Rhone Marine Park, in an effort to provide recommendations to the Territory in ways to enhance these benefits.” (Woodfield, 1997). While this information can still provide some interesting baseline data about visitor use and spending for the site, it is now rather outdated. The importance of environment-based tourism is easily quantified within the BVI as it is one of the leading industries within the economy. A valuation study would be useful to inform the refinement of the management plan, assist in outreach to policy makers and to help bolster the rationale for the Trust’s role in the process.

#### **23. Rapid Response Protocol/Team (Yes)**

Rationale: There is an organized National Response Team headed by the Conservation and Fisheries Department.

#### **24. Ecosystem Based Management (Yes)**

Rationale: The System Plan creates or refines National Parks, Marine Parks, Fisheries Protected Areas, Fisheries Priority Areas, Protected Landscapes or Seascapes and Multiple Management Areas. As the diversity of areas created implies, the Plan defines a system of Protected Areas which will meet a multiplicity of needs whether they are for strict protection, recreation, fishing or a combination of any of these activities. The System Plan rationalises the establishment of a resilient network of areas which support, not only protection of critical habitats such as coral

reefs, but also seagrass beds, salt ponds, dry Caribbean forests and mangroves: resources, the protection of which have long been overlooked. The expanded plan (2006) was developed using MARXAM and EBA principles for both the marine and terrestrial components of the plan.

## **25. Community Support (High)**

## **26. Government Support (High)**

Rationale: It was the Government that was driving the expansion of the PA's

### **Management Capacity Priority Needs**

1. System Wide MPA Effectiveness Assessment
2. Biophysical Monitoring+ some socio-economic training to help with zoning of areas with biological importance
3. Enforcement (Health and Safety Operations)

### **Priority Capacity Building Approaches**

1. Training (Enforcement and Biophysical Monitoring)
2. Technical Support (GIS support for staff georeferencing, data logging, some one-on-one support for applying spatial analysis to determine hotspots of use patterns, where to direct staff and personnel)
3. Learning exchanges

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

### **References**

Gardner, Lloyd, Smith Abbott, Joseph and Woodfield-Pascoe, Nancy. 2008. *British Virgin Islands Protected Areas System Plan 2007-2017*. BVI National Parks Trust. Tortola. January 8, 2008.

The Government of the Virgin Islands (2006) *National Parks Act*.

The Government of the Virgin Islands (2008) *National Parks Trust Regulations*.

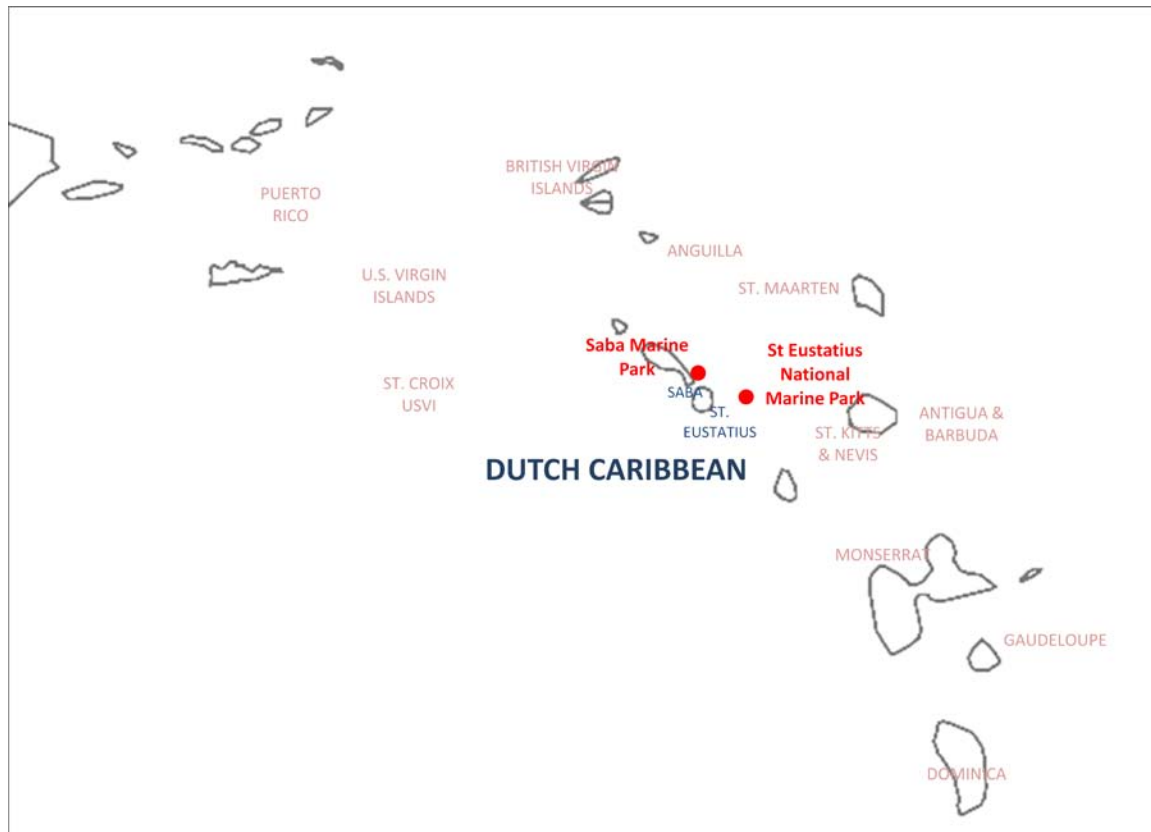
Woodfield-Pascoe, Nancy. 1997. *The Wreck of the Rhone Marine Park, British Virgin Islands: A Social and Economic Impact Study*, for CANARI.

## Dutch Caribbean - Saba and St Eustatius

**Dates of Interviews:** April 7, 2011 (St. Eustatius) and April 15, 2011 (Saba)

**Interviewer:** Meghan Gombos (via telephone)

**Agencies/Organizations Interviewed:** St Eustatius National Parks Foundation, Saba Marine National Park, Dutch Caribbean Nature Alliance (consultant provided written comments)



## Saba Marine Park

**Name:** Saba Marine Park (SMP)

**Country:** The Netherlands

**Year Established:** 1987

**Size:** The Marine Park comprises about 1300 hectares (13 km<sup>2</sup>) of coral reef and sea floor around the entire island of Saba from the high-water tide mark to a depth of 60 meters.

**Management Agency:** Saba Conservation Foundation (SCF) – this is a non-governmental organization that manages the park through a letter of agreement with the government of the Netherlands Antilles. The Saba Conservation Foundation manages the Park and human uses of it.

**Site Resources:** The topography and natural diversity around Saba is unique and pristine. The Marine Park consists of seamounts, pinnacles, and coral reef communities, all of which provide a broad range of marine habitats. These habitats in the Park offer protection for a wide an abundance of fish and marine life. Generally, the reef systems of Saba have not experienced the same amount of human impacts and degradations as much of the Caribbean (Schultz et. al. 1999)

**Site Uses:** Recreation, Fishing, Industry (e.g. shipping)

**Threats:** Sedimentation, Disease

**Site Contact:** Kai Wulf (Manager), Saba Conservation Foundation phone: 599-416-3295 email: [sabapark.manager@gmail.com](mailto:sabapark.manager@gmail.com)



Figure 22 Map of Saba Marine Park. © David J. Kooistra, Saba National Marine Park, 2003.

Question	Relevance of Site Objective to Designation Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	Preservation of “the natural resources of that environment for both commercial, as well as educational, recreational and scientific purposes” (Schultz et. al. 1999)

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	



CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning		x	
3	Ecological Network Development	x		
4	Governance			x
5	On-site management		x	
6	Enforcement		x	
7	Boundaries			x
8	Biophysical Monitoring *	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation			x
11	Stakeholder Engagement			x
12	Financing *	x		
13	Outreach and Education			x
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change	x		
16	Alternative Livelihoods	x		
17	Fisheries Management	x		
18	Integrated Coastal Management		x	
19	MPA Sustainable tourism			x
20	Organizational Management *		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management			x
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support	x		

\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 2)

Rationale: A management plan was developed in 1999 and was based on limits of acceptable change. However this plan is out of date and is not currently being used to guide daily management activities. The main challenge in updating this plan has been with staff time to make revisions. However, the Dutch Caribbean Nature Alliance (DCNA) provides support to the site management and is planning to facilitate the development of a new plan in the near future.

### 3. Ecological Networking (Tier 1)

Rationale: While the SMP was designed to be part of an MPA network among the Dutch Caribbean countries, it was not designed based on ecological principles such as connectivity, and representation. Therefore, it does belong to a “network” of sites, some of which might be ecologically linked by default (e.g. Saba, St. Eustatius and St. Martin); however, the ecological benefits of this network are unknown. Additionally, the network is coordinated across Dutch Caribbean sites and there are site management benefits from working together with these other MPAs (e.g. lessons on lionfish management). Therefore, although the site is at tier one from an ecological network perspective, it does have coordination strengths that are representative at a higher tier.

### 4. Governance (Tier 3)

Rationale: The site was established through the Saba Marine Environment Ordinance - AB1987, No. 10. The Ordinance establishes a zoning plan, and park regulations for all zones of the park. The ordinance prohibits nearly all spear fishing, taking of coral, anchoring in coral and dumping waste. It also provides for licensing of tour operators and a visitor fee system. In 1991 yachting fees and increases to the existing visitor fees were passed through an amendment of the Ordinance (<http://www.cep.unep.org/pubs/Techreports/tr36en/countries/netheran.html>). Although the MPA is legally established, there are insufficient rules and regulations to support proper management of the site. \*

\* For more information about this priority topic for capacity building, please contact CaMPAM coordinator or site contacts.

### 5. On-Site Management (Tier 2)

Rationale: The Saba Conservation Foundation currently has five full time staff. The organization is mandated to manage both terrestrial and marine parks. Staff positions include a Manager, one Marine Ranger (normally there are two but currently one is focused on outreach and education because this is a priority), one administrative assistant, and one trail ranger (focused primarily on terrestrial sites). Because the Park encompasses the entire island, the office is considered to be on-site. However, the staff are stretched thin to cover core activities and responsibilities for both terrestrial and marine environments. Therefore, management has noted that there is not sufficient staff to actively manage all the marine area including the six no-take reserve zones in the park. Specifically, site management noted a need for at least one more marine park ranger.

### 6. Enforcement (Tier 2)

Rationale: While there is enforcement of the site, there is currently only one park ranger. This precludes a consistent presence on the water. Rangers are also responsible to support monitoring, visitor outreach, and carry out on-going infrastructure maintenance (e.g. mooring buoys). At this time, the Saba Conservation Foundation found that education of school children was a priority for management. Therefore, one of the two park rangers is currently focused on carrying out educational activities rather than on-site enforcement with the consequence that due to the lack of funds for additional staffing, site management has been pressured to reallocate staff time for education rather than enforcement. Additionally, finding qualified staff on island to fill enforcement positions can be challenging. Trained personnel often move off island where salaries are higher.

### **7. Boundaries (Tier 3)**

Rationale: The boundary of the marine park is clearly defined as a 60m depth contour around the island. The boundaries have also been geo-referenced and maps are available. Due to the depth of this boundary, there are no boundary markers around the site. It has also been noted that boundary markers can be deceiving, as people tend to draw an imaginary line between markers, which does not necessarily reflect the actual bounds. There are also several zones in the park including zones for the six no-take marine reserves. While there are no boundary markers, site management felt that the boundaries are well understood within the small island and the main stakeholders (i.e. dive operators and fishermen). There is also an effort to provide this information to visitors, as they have to come to the office to register and pay a park fee. Finally, there are mooring buoys within the marine reserves, which indicate the zones for the reserves. Site management noted that the boundaries of the marine reserves should be reassessed to understand ecological value.

### **8. Bio-physical Monitoring (Tier 1)**

Rationale: The monitoring that occurs at the Saba Marine National Park happens sporadically or if there is a specific situation that requires an assessment. This information would then be used for decision-making. However, monitoring to assess progress toward management objectives does not occur on a regular and consistent basis. This was noted as a priority need for site management. The main challenge in carrying out regular monitoring is staff capacity. In the past there have been efforts to conduct monitoring but these programs have ended because there is not staff capacity to continue these efforts. There are only sporadic snapshots of bio-physical information for the site (e.g. fish counts from the mid-90's) and this information could be used to provide some baseline information for future monitoring. Monitoring by volunteers has also been tried but site managers expressed the challenge in collecting useful information through volunteers and the extensive time it takes to train them to collect data.

Recently the Saba Conservation Foundation attended a meeting among Dutch Caribbean islands to discuss how to best coordinate efforts. At this meeting they decided that for all the sites, bio-physical monitoring was a priority and sharing resources could provide tremendous benefit to individual sites. The result of this meeting was to establish a "Monitoring Task Force" among the islands. Staff from individual sites would travel to a host site where they would help carry out a modified AGRRA monitoring protocol for that site. The sites would take turns in supporting one another so that all sites are able to have bio-physical information collected on an annual basis. This group planned to get together in 2011 to decide when and how this task force will be implemented. This idea of a "roving monitoring" program is innovative as it can provide the capacity needed to overcome the challenge of limited staffing in many site programs. Additionally, a small investment of funds to support travel among islands can be much cheaper than hiring full time monitoring staff for each site. This approach could possibly be used as a model to address this on-going challenge for many sites in the Caribbean and could also be used to support socio-economic monitoring.

### **9. Socio-economic Monitoring (Tier 1)**

Rationale: Information on dive site use is being collected for the park. However there have not been any assessments carried out to understand knowledge, attitudes, and perceptions of the site management efforts for Saba. The Saba Conservation Foundation has undergone SocMon

training but has not had sufficient staff to carry out a monitoring program. It is noted that this information will be critical if any changes to policies are to be sought.

#### **10. MPA Effectiveness Evaluation (Tier 3)**

Rationale: The Dutch Caribbean Nature Alliance (DCNA) carries out a Management Success Project annually which assesses the management framework of the site and feeds directly into management planning, management plan review and annual reports. This project is designed to measure the management effectiveness of each park management organization in the Dutch Caribbean. The management success project has developed a tool for collecting data using objective indicators to measure 'success' across a broad spectrum of protected area management tasks and activities. However, information is not being collected on bio-physical or socio-economic factors. Site management noted an interest in being able to include data on these factors into these annual reports to help understand conservation effectiveness of the MPA. Including these additional indicators of success can help both site management and board members understand the overall effectiveness of the MPA in meeting its goals and objectives.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: The board of the Saba Conservation Foundation is made up of various stakeholders; however, these members were not selected to specifically represent the various stakeholder groups on the island. There is currently little stakeholder involvement in management activity other than board representation and dive operators who provide support for enforcement of the site. There is an effort to have more meetings with fishermen and get them involved in management discussions. Additionally, a new site in Saba that is undergoing management planning is including fishermen in the process; so, the process is evolving and could affect the SMP when they undergo a new planning process. Site management noted the lack of local understanding of stakeholder engagement processes at this time and the need for a good model such as St. Lucia. However, given the small size of the island and the progress that is being made, site management did not identify this as something that needed to be changed at this time.

#### **12. Financing (Tier 1)**

Rationale: Funding for site management comes solely from user fees. Marine park fees include dive and snorkel fees, and yacht fees. The local government provides funds for a trail manager, who is mainly focused on the terrestrial sites. The government also provide sporadic funds for various infrastructure components like cement blocks for mooring buoys but this is not consistent. Finally, a trust fund has been established through the DCNA but unfortunately this has performed badly through the global economic crisis. As such, sustainable financing is a priority for the site because current funding can only maintain essential administration but not management activities. Additionally, site management noted the challenge in finding funds to match to grants, a requirement to obtain grant funds that is becoming more common .

#### **13. Outreach and Education (Tier 3)**

Rationale: There is currently one full time staff focused on providing outreach and education. The main focus is school children but there are also efforts to reach the broader public. Outreach materials have been developed and/or revised from other programs to support the site efforts. Visitors are also required to visit the Saba Conservation Foundation office upon arriving to obtain marine park permits. This provides staff the opportunity to provide information about the site and regulations. There is also an effort to streamline outreach

materials and programs for all National Parks of Holland. SMP will be part of this pilot activity, which may provide additional support for site outreach efforts.

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Site management noted that local stakeholders are aware that issues can be addressed through the Saba Conservation Foundation Office and they, therefore, utilize the office to address problems.

#### **15. Climate Change Resilience (Tier 1)**

Rationale: Whereas two of the SMP staff were trained in resilience principles and actions, SMP has lacked the staff capacity in numbers and time to implement what they learned. Site management noted that with limited staff capacity, this is not a priority at this time.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: While it was noted that an assessment was carried out in 1994, site management is not aware of the results of this work. Managers noted the importance of collecting this information as Saba has historically been a fishing community and therefore understands possible negative impacts of site management, and further understands that opportunities for alternative livelihoods would be essential for local buy-in. Site management also noted a potential problem with over-fishing and an interest in more licenses being sought for fishing. In this regard, a socio-economic assessment would be important of fully understand this area and manage accordingly.

#### **17. Fisheries Management (Tier 1)**

Rationale: There have been no assessments of the fisheries for the Saba Marine National Park. A lack of staff capacity (both in numbers and skill) is the main challenge to carrying out this work. There is a strong interest in obtaining this information along with other bio-physical information including catch data.

#### **18. Integrated Coastal Management (Tier 2)**

Rationale: While the SCF manages terrestrial areas on Saba, these areas are undeveloped and do not impact marine systems. The SCF has no jurisdiction over other terrestrial areas that impact the marine reserves and have limited coordination with these agencies. There is no spatial plan for the island, which has been noted as a main challenge. The government of Holland may provide support to carry out a threat assessment and develop a spatial plan for the island. This could improve coordination and integrated coastal management.

#### **19. Sustainable Tourism (Tier 3)**

Rationale: The 1999 management plan for the site was developed based on limits of acceptable change. Therefore SCF considers the management of the site to be based on sustainable tourism principles. However, without adequate monitoring of the indicators identified in the limits of acceptable change (in the plan), these guidelines cannot be followed. There is also an assumption that there is not much room for growth of tourism given the lack of beaches, and marinas on the island.

#### **20. Organizational Management (Tier 2)**

Rationale: While the current staff of the SCF have adequate skills to manage the site, they are limited in numbers. Additional staff is considered a priority. Specifically, enforcement staff and

a position that could develop maps through GIS software were noted as priority positions that need to be funded.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: The SCF works with various organizations and stakeholder groups for a variety of topics (e.g. outreach, cetacean monitoring). These organizations include local, regional, and international organizations. This includes 28 stakeholder groups which are informally coordinated and 13 of which are fully coordinated.

#### **22. Economic Valuation (No)**

Rationale: The site has not carried out an economic valuation but is very interested in having one completed to use as a tool for lobbying support. Site management mentioned a simple tool created for this purpose through the World Resources Institute that they would like to use.

#### **23. Rapid Response Protocol/Team (Yes)**

Rationale: The SCF is the responsible agency that expected to respond to incidents such as bleaching, invasive species and ship groundings. There are emergency plans in place but they are not formalized.

#### **24. Ecosystem Based Management (No)**

Rationale: There is not a current management plan in place to take ecosystem-based management principles into consideration.

#### **25. Community Support (MEDIUM)**

Rationale: There is high support from some stakeholders, mainly those who are expatriates living in Saba. However, local support is low as it is perceived that local stakeholders are too busy looking for opportunities to support their livelihoods rather than conservation.

#### **26. Government Support (HIGH)**

Rationale: The local government support is high as both commissioners are in full support. They do have to balance economic interests, however.

### **Management Capacity Priority Needs**

- 1. Sustainable Financing**
- 2. Organizational Management** –key roles mentioned are enforcement staff and a position that can create GIS files and maps to be used to educate policy makers through visual media.
- 3. Monitoring** – management expressed a need to establish baselines of information to inform management over time. This includes both bio-physical factors (e.g. fisheries) as well as social factors.

### **Priority Capacity Building Approaches**

- 1.** More staff
- 2.** Training – same weight as LE's
- 3.** Learning exchanges

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

### References

Schultz E.G., McCool S.F., and Kooistra, D. (1999) *Management Plan Saba Marine Park*, Saba Conservation Foundation The Bottom Saba, Netherlands Antilles.

Dutch Caribbean Nature Alliance (2011) *Management Success Data Report January - December 2010 Saba National Marine Park, Saba Terrestrial Park and Trails*. Unpublished DCNA report.

## St Eustatius National Marine Park

**Name:** St Eustatius National Marine Park also known as Statia Marine Park

**Country:** The Netherlands

**Year Established:** 1996

**Size:** 27.5 km<sup>2</sup> Statia Marine Park encompasses the entire coastline of St Eustatius from the high water mark to the 30 meter depth contour. The distance of the Marine Park boundary from shore varies between 1 and 3km depending on the slope of the sea bottom.

**Management Agency:** St Eustatius National Parks Foundation (STENAPA) - a local nongovernmental. STENAPA is legally mandated by the Island Government to manage all the island's protected areas.

**Site Resources:** The marine park contains biologically diverse coral reefs, seagrass beds, sandy bottom, and open ocean communities. The park surrounds the island (encompassing the entire coast) and extends from the high water mark out to a depth of 30 meters (100 ft). The total area of the park is 27.5 km<sup>2</sup>. Within the Marine Park, there are two actively managed reserves where anchoring and fishing are not permitted in order to protect the pristine coral reef. There are 3 types of coral reef within the marine park. Many of the reefs have developed on the remains of an extinct volcano (the Boven area) and a dormant volcano (the Quill area). The types of substrate corals have colonized range from bombs and lava blocks to solidified lava flows shaped like 'fingers'. In the Southern Reserve, a distinctive spur and groove zone (a series of alternating rocky fingers and sandy channels) has formed. The third reef type has formed on the remains of wrecks, both old and new, dating from the 1700s to 2004. The coral reefs of the Marine Park also boast a high biodiversity and coral cover. A wide array of tropical reef creatures reside in and around these reefs as well. Among these species are: Angelfish, Butterflyfish, Flying Gurnard, Moray Eels, Spotted Drums, Frogfish, Sea Horses, Octopus, Lobster, Rays, Sharks, and Turtles.

**Site Uses:** Recreation, Fishing, Industry (e.g. Shipping)

**Threats:** Development, Fishing, Poaching, Pollution and Anchor damage from Commercial Shipping, Diving/Snorkeling, and Pollution

**Site Contact:** Kate Walker, Director of National Parks, St Eustatius National Parks Foundation  
phone: 599 318 2884, email: [manager@statiapark.org](mailto:manager@statiapark.org)





Figure 23 Map of St. Eustatius Marine Park with Buoys (MacRae D.R. and Esteban, N. 2007)

Question	Relevance of Site Objective to Designation Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	To manage and conserve natural, cultural and historical marine resources of St. Eustatius for sustainable use with continued stakeholder participation, for the benefit of current and future generations.

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	<b>Ecological Network Development</b>		x	
4	Governance			x
5	On-site management			x
6	Enforcement		x	

7	Boundaries			x
8	Biophysical Monitoring			x
9	<b>Socioeconomic Monitoring</b>		x	
10	MPA Effectiveness Evaluation		x	
11	Stakeholder Engagement			x
12	Financing		x	
13	Outreach and Education			x
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change	x		
16	Alternative Livelihoods		x	
17	Fisheries Management		x	
18	Integrated Coastal Management			x
19	<b>MPA Sustainable tourism</b>		x	
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management			x
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		x	
26	Government Support		x	

## 2. Management Planning (Tier 3)

Rationale: There is an approved management plan that was written in 2007. This plan outlines clear goals and objectives of the site to be used to monitor effectiveness over time. Site management recognizes that the plan is in need of revision. However, there were specific activities identified in the plan that were appropriate to be carried out by the Fisheries and Agriculture Department which has only recently been developed on the island. Therefore, some of the plan activities will now be carried out by Fisheries rather than STENAPA (e.g. working with fishermen). Day to day activities are still guided by the existing document and support the goals and objectives. There is a strong focus on developing a sustainable financing plan as called for in the management plan.

## 3. Ecological Networking (Tier 2)

Rationale: The Statia Marine Park was designed to be part of an ecological network across countries in the Caribbean that were part of the Dutch Caribbean (previously the Netherlands Antilles). However, these sites are not coordinated with sites in these other island jurisdictions.

There is a strong interest in fostering stronger coordination and linkages with these site including those in St Maarten (French and Dutch sides), St Kitts and Nevis, and Saba.

#### **4. Governance (Tier 3)**

Rationale: The Statia Marine Park was placed in legal designation under the St. Eustatius Marine Environment Ordinance AB1996, No. 03 which defines the 2 marine reserves within the park and provides STENAPA with the authority to make rules and regulations for various activities in the Park. It is through this ordinance that STENAPA has managed the marine reserves as no-take areas and regulated activities such as fishing, mooring, anchoring, and jet skis.

#### **5. On-Site Management (Tier 3)**

Rationale: Because the Marine Park encompasses the entire perimeter of St. Eustatius, the STENAPA office is essentially on site. There is a full-time site manager and six programmatic personnel assigned to site management. Additionally there are several interns and international volunteers who regularly work at the site.

#### **6. Enforcement (Tier 2)**

Rationale: The rules and regulations for the site are legally defined by the Marine Environment Ordinance. However, rangers who have legal police powers to enforce regulations at STENAPA are limited. Two of staff with these powers recently left STENAPA so there is currently a gap relative to these skills. STENAPA works directly with the police department to get support for enforcement when needed but the police force is also small and busy. Therefore, at this time enforcement is inconsistent at the site. STENAPA puts more effort in trying to manage potential illegal activity before it happens through outreach and surveillance. They are also looking to get more staff trained to have police powers but it is unclear how long this training will take (possibly up to six months).

#### **7. Boundaries (Tier 3)**

Rationale: The Marine Park extends around the perimeter of the island and therefore marker buoys are not needed. However, there are marker buoys to define the boundaries of the two no-take marine reserves in the Park. Dive moorings are also provided in the reserves to prevent people from anchoring in areas of high coral reef abundance. Outreach products are available to define the boundaries and zones of the Marine Park as well.

#### **8. Bio-physical Monitoring (Tier 3)**

Rationale: Biological monitoring is conducted by STENAPA on an annual basis. The main focus of this work is on the marine reserves and the park on the Caribbean side of the island; the Atlantic side is too rough for regular monitoring. A variety of information is collected using the Coral Watch, DCNA Bird Monitoring, Reef Check, Sediment analysis, Fisheries Assessment, and Turtle Monitoring protocols.

#### **9. Socio-economic Monitoring (Tier 2)**

Rationale: There are some on-going socio-economic assessments that are conducted which include recreational use information. Additionally an economic valuation was carried out for one of the marine reserves. In the 2007 a willingness to pay study was also carried out by STENAPA staff, to estimate the monetary value of a dive experience. No information has been collected on knowledge, attitudes, and perceptions of stakeholder. Site management has

identified this work as a priority to influence decision makers. However funding and available staff time was identified as the main obstacle to completing this work.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: There is extensive biological information collected at the site that is analyzed to assess site effectiveness and to adapt management activities. Additionally, the Dutch Caribbean Nature Alliance (DCNA) carries out a Management Success Project annually which assesses the governance and management framework of the site and feeds directly into management planning, management plan review, and annual reports. This project is designed to measure the management effectiveness of each of the park management organizations in the Dutch Caribbean. The management success project has developed a tool for collecting data using objective indicators to measure 'success' across a broad spectrum of protected area management tasks and activities. However, information is not being collected on socio-economic factors other than that originating from regular discussions with stakeholders. Site management noted that stakeholder discussions provide informal input and understanding of site effectiveness from a social standpoint. Further effectiveness evaluation work is not a priority at this time.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: Stakeholders have been involved throughout the planning process in particular with the determining the location and developing the rules for the reserves. The island of St. Eustatius is very small and the STENAPA staff are in touch with stakeholders on a regular basis through informal meetings. Additionally, stakeholders have participated in management activities in the past, specifically when there are issues that could use the knowledge and skills of specific stakeholder groups. For example, fishermen and divers have been asked to help implement a lionfish action plan to identify and eradicate the invasive species.

#### **12. Financing (Tier 2)**

Rationale: Some funding is made available to STENAPA on a regular basis but it is not necessarily enough to sustain the level of management needed to be fully effective. Currently, funding is generated from mooring and dive fees, as well as grants and government subsidies. Dive fees and mooring fees provide some funding but tourism is not extensive in the area so these combined funds are not sufficient for effective management. The local government also provides a subsidy that covers the base staffing for STENAPA. These funds, combined with grants and support from the DCNA, are enough for core activities to be carried out. However, there is a need for more funds to fully implement management activities. STENAPA management is focusing on implementing a mechanism that collects fees from tanker ships and those additional revenues would provide the additional level of funds required to sustainably fund STENAPA. Further negotiations are needed to implement this fee but management felt they were close to coming to an agreement.

#### **13. Outreach and Education (Tier 3)**

Rationale: Several outreach and education activities take place through STENAPA. These include a junior ranger program and activities in schools to engage youth. Additionally, there are orientations on the Marine Park for visiting dive boats. A visitor's center was opened in 2007 which provides information on the Marine Park. Mini guides and signage have been printed and are also available on the STENAPA website. The website provides guidelines for a

range of activities in the Park. The management plan also includes a communications plan for the site.

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: As mentioned previously, St Eustatius is a small island and therefore no formal conflict resolution mechanism has been implemented. However, STENAPA management were confident that stakeholders are aware that the STENAPA office and staff are available as a mechanism to raise concerns and resolve conflicts. STENAPA is very open and very visible for this reason.

#### **15. Climate Change Resilience (Tier 1)**

Rationale: The site was established in 1996 and climate change was not considered when designing the site. The areas that have been placed under the highest protection are those comprised of healthy reef; other habitats are not necessarily represented (e.g. seagrass) or protected. STENAPA does not manage specifically for climate change but mentioned that their monitoring program would capture the impacts of climate change such as bleaching. They further noted a limitation in scientific knowledge and staff time as the largest barriers to doing more to address climate change.

#### **16. Alternative Livelihoods (Tier 2)**

Rationale: No formal assessment was carried out to understand the possible negative impacts to stakeholders with the designation of the Marine Park, and in particular the no take marine reserves. However, stakeholders were engaged in the planning process and considerations were made for fishermen who were displaced from using the area of the reserves. Additionally, site management made an effort to establish artificial reefs specifically for lobster fishermen to provide alternative fishing sites.

#### **17. Fisheries Management (Tier 2)**

Rationale: There has recently been a Fisheries and Agriculture Department created for the island of St. Eustatius and they have begun to take over specific roles related to fisheries for the island. A fisheries cooperative has been established and they are developing a fisheries management plan which will incorporate fisheries in the park. , this plan is nearing completion as of April, 2011.

#### **18. Integrated Coastal Management (Tier 3)**

Rationale: With the small size of St. Eustatius, there is good coordination among agencies through informal partnerships. STENAPA manages terrestrial parks as well as the marine park. The newly formed Fisheries and Agriculture department is also a close partner as is the local planning board which regulates development. All of these agencies are closely linked and work collaboratively to address land based issues that could impact the park resources.

#### **19. Sustainable Tourism (Tier 2)**

Rationale: At this time, visitor data is being collected to understand visitor numbers and use. While tourism has been relatively low compared to some other Caribbean islands, sustainable tourism is a core aim of STENAPA and the MPA and tourism numbers are expected to increase in the future. Additionally, dive operations need to be permitted and visitors must go through a permitted local operator. While numbers at this time do not necessarily require a fully-

developed sustainable tourism plan, site management identified a plan as a priority in order to prepare for future tourism growth.

## **20. Organizational Management (Tier 2)**

Rationale: The management of the marine park is carried out by the Parks Manager and seven paid staff. In addition, there are four interns and up to eight international volunteers. STENAPA is mandated to manage both land and marine areas and noted that this was a bare minimum of staff needed to carry out core activities. These staff are highly skilled and trained but spread thin across several duties. Therefore STENAPA identified more staff as needed to implement other activities considered essential for effective management.

## **21. Partnerships/Coordination (Tier 2)**

Rationale: While partnerships are not formalized, there are strong relationships among STENAPA, other management agencies, and stakeholder groups.

## **22. Economic Valuation (Yes)**

Rationale: An economic valuation report was completed in 2010 and has been used as a lobbying tool to foster support for the marine park management.

## **23. Rapid Response Protocol/Team (Yes)**

Rationale: A formalized response team is not in place but STENAPA staff are prepared to respond to emergency events such as oil spills and invasive species outbreaks.

## **24. Ecosystem Based Management (No)**

Rationale: As the site was established in 1996, ecosystem-based management principles were not considered in the design of the marine park. For example, seagrass beds are not incorporated into special conservation zones and are only now being considered for further protections. However, there was extensive stakeholder input in site management planning so human dimensions were considered.

## **25. Community Support (MEDIUM)**

Rationale: STENAPA has high visibility on the island and most residents know about the park and the organization. Most people support the site because they recognize the unique beauty of the area and want to maintain its health. There are some stakeholders, however, that have been impacted by site regulations and do not support the site.

## **26. Government Support (MEDIUM)**

Rationale: Local government has financially subsidized the management of the site. While small, these funds are dependable. Recent changes in the government structure of what was previously the Netherlands Antilles has made it unclear how much support will be provided through the Dutch government. St Eustatius is now a Dutch municipality along with Saba and Bonaire. Other islands that were previously part of the Netherlands Antilles (e.g. St. Maarten) have become independent countries. Vocal support is high for the site but financial support thus far does not exist.

### **Management Capacity Priorities**

4. Ecological network development (across countries)

5. Sustainable tourism
6. Socio-economic monitoring

**Priority Capacity Building Approaches**

4. Training
5. Learning exchanges
6. Tech support

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

**References**

MacRae, D.R. and Esteban N. (2007), *St. Eustatius Marine Park Management Plan*. Coastal Zone Management (UK) and St Eustatius National Parks Foundation (STENAPA).

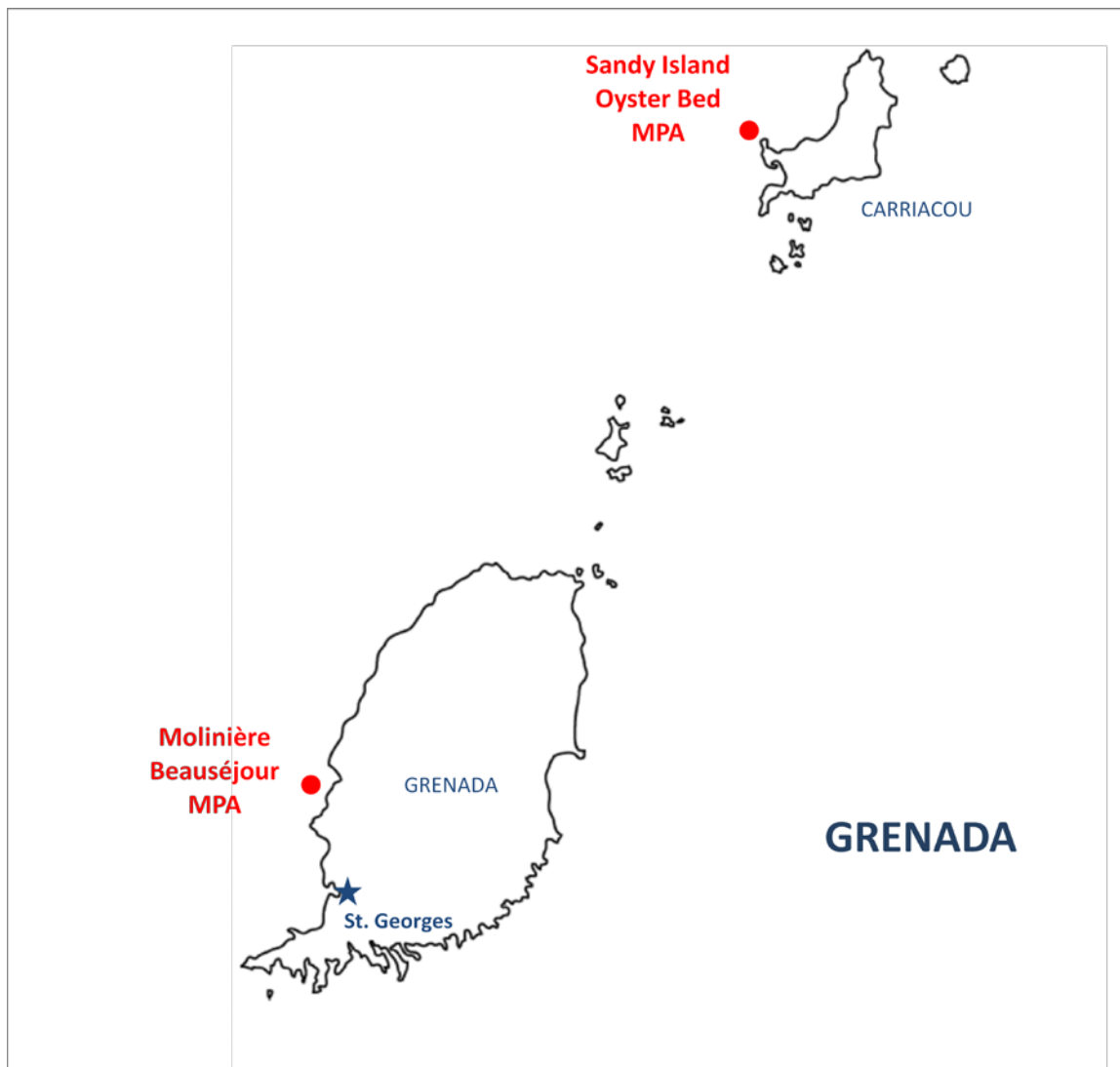
Dutch Caribbean Nature Alliance (2011) *Management Success Data Report January – December 2010, St. Eustatius The Quill National Park, Boven and Botanical Garden, St Eustatius National Marine Park*. Unpublished DCNA report.

## Grenada

**Dates of Interviews:** January 25-29, 2011

**Interviewer:** Alex Arrivillaga and Meghan Gombos

**Agencies/Organizations Interviewed:** Fisheries Division, Grenada Ministry of Agriculture, Forestry & Fisheries, Molinière-Beausejour MPA, and Sandy Island/Oyster Bed MPA, Sustainable Grenadines Inc.





## Molinière/Beauséjour Marine Protected Area

**Name:** Molinière/Beauséjour Marine Protected Area (MBMPA)

**Country:** Grenada

**Year Established:** 2001

**Size:** .6 km<sup>2</sup>

**Management Agency:** Fisheries Division, Ministry of Agriculture, Forestry and Fisheries

**Site Resources:** Approximately two-thirds of the Molinière-Beauséjour MPA surface area consists of coral reef. There is also a seagrass bed within the site however this area is now dominated by an exotic invasive species, *Halophila stipulacea*. Studies looking at resources in the site in 1988 report “outstanding and consisting of a series of coral reefs and sea fans beds with a prevalence of lobsters, soft and hard corals”. However data from this report is not available and therefore it is impossible to use this information as baseline. Recent studies have shown degradation of coral reef resources as a result of algal overgrowth. (Grenada Ministry of Agriculture, Forestry & Fisheries, 2010)

**Site Uses:** The primary users of the site are recreational users (both local and tourists). Snorkeling is the predominant activity in the site. Commercial fishing activities also occur in the fishing priority areas of the site.

**Threats:** Primary threats include illegal and selective fishing (e.g. spearfishing), land based development and sediment and nutrient pollution, and climate change.

**Site Contact:** Roland Baldeo (MPA Coordinator, Fisheries Division) phone: (473) 440-2708 email: [rolandbaldeo@hotmail.com](mailto:rolandbaldeo@hotmail.com) and Steve Nimrod (Chair of MBMPA Stakeholder Committee) [SNimrod@sgu.edu](mailto:SNimrod@sgu.edu)

**Other Contacts:** Sustainable Grenadines Inc. (SusGren) is a local transboundary NGO that works collaboratively with MPAs in this region to foster improved management capacity. SusGren has recently facilitated the development of a formalized Grenadines Network of MPAs (i.e. TCMP, SIOBMPA, and MBMPA) in January 2011. The agreement signed among these sites fosters collaboration between the MPAs and their partner organization, and information sharing on all aspects of MPA management. SusGren has also launched a unique initiative to carry out multi-national Marine Spatial Planning in the region with the aim of developing a multi-use zoning plan for the entire Grenadines. Based on these efforts, SusGren provides an excellent venue for collaborative partnerships among governments and NGOs, and shared capacity-building activities among the MPAs of the Grenadines.

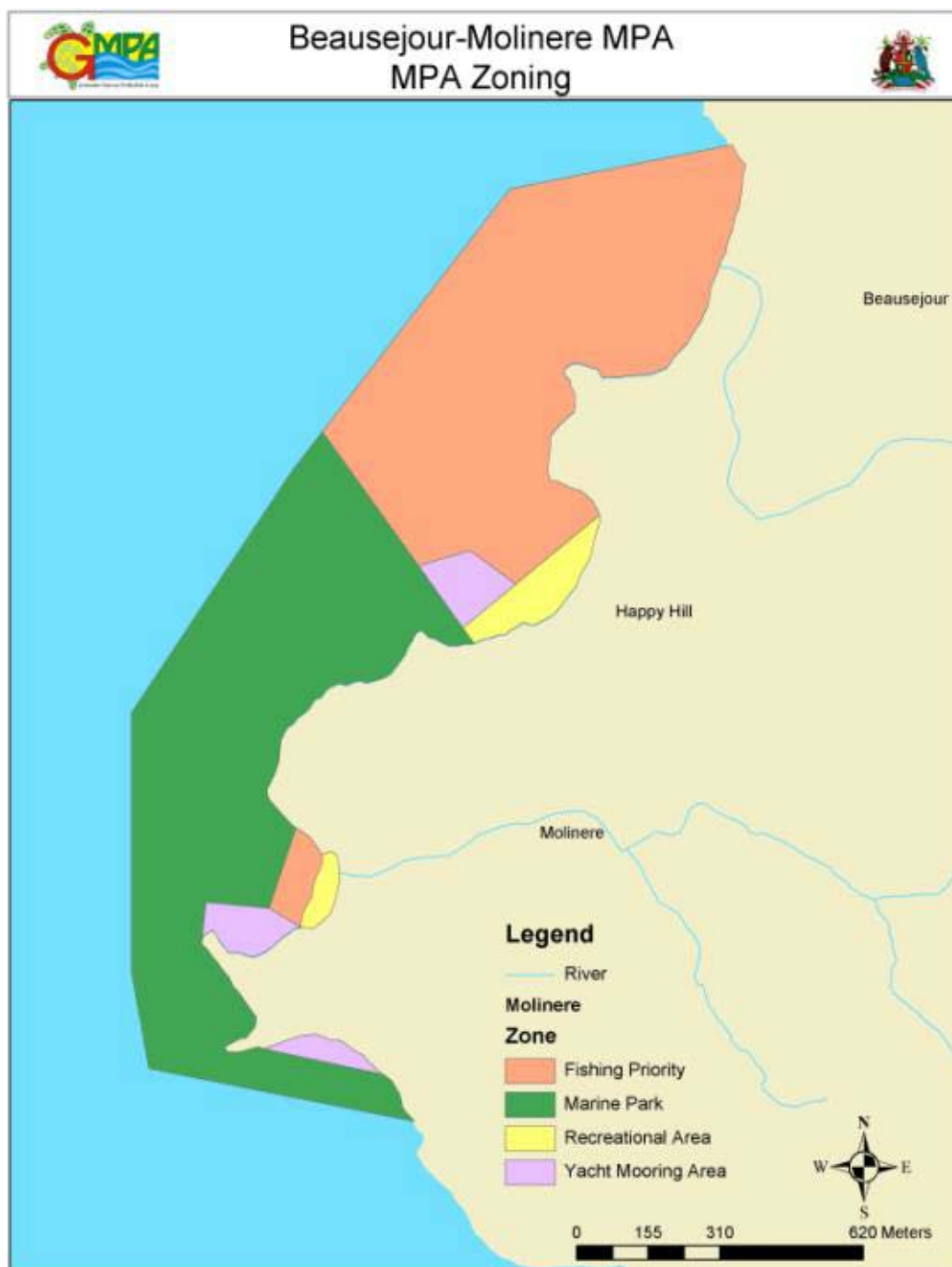


Figure 24 Zoning Map for Molinière/Beauséjour Marine Protected Area

Question	Relevance of Site Objective to Designation Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	<ol style="list-style-type: none"> <li>1. To address user conflict among recreational users and fishers</li> <li>2. To protect important natural resources such as coral reefs and seagrass</li> </ol>

	beds.
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Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	Ecological Network Development	x		
4	Governance		x	
5	<b>On-site management*</b>		x	
6	<b>Enforcement*</b>		x	
7	Boundaries		x	
8	<b>Biophysical Monitoring*</b>		x	
9	Socioeconomic Monitoring		x	
10	MPA Effectiveness Evaluation		x	
11	Stakeholder Engagement			x
12	Financing	x		
13	Outreach and Education	x		
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change		x	
16	Alternative Livelihoods		x	
17	Fisheries Management			x
18	Integrated Coastal Management		x	
19	MPA Sustainable tourism		x	
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation			x
23	Emergency Response	x		
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support		x	

\* denotes identified priorities for capacity building

## **2. Management Planning (Tier 3)**

Rationale: The site has not been actively managed until recently when it was re-launched in September of 2010. Prior to the re-launch, there were extensive biological and socio-economic assessments and stakeholder consultations carried out to support the management planning process. The management plan included a new zoning and regulation framework as well as a more stakeholder-based governance structure. As of September 2010, there has been active management of the site and implementation of the management plan has begun. The Molinière/Beauséjour Marine Protected Area Management plan was completed and approved in 2010. The plan is written in two parts. Part A provides a description and background information of the site and compiles extensive information from previous and recent assessments and documents. Part B provides the management framework developed through the planning process including issues, objectives, and actions. This plan is currently being implemented in various stages. The management body would like to carry out an audit of the plan to better understand what has been completed thus far, and what activities are still incomplete and are a priority for site management.

## **3. Ecological Networking (Tier 1)**

Rationale: This site is part of a network of three MPAs within Grenada; however, it was not designed to support goals of an ecological network. Key research to understand connectivity (e.g. currents) and other essential elements of network design are lacking. There is speculation that the Grand Annes area might be ecologically linked to Molinière/Beauséjour but this has not been studied. Both human and financial resources are needed to better understand the ecological attributes of the area and to improve future network design.

## **4. Governance (Tier 2)**

Rationale: The Molinière/Beauséjour Marine Protected Area was officially declared in 2001 under the Fisheries (Marine Protected Area) Order (SRO NO 77 of 2001) and Fisheries (Marine Protected Area) Regulations (SRO No 78 of 2001). The rules and regulations were then developed in the management plan in 2010 were drafted after the establishment of the legal mechanism.<sup>5</sup> The legal designation does not allow for co-management of the site, which the current management plan proposes. Through the planning process, some of the laws have been reviewed and recommendations have been made on appropriate changes needed to support new rules and regulations. However, there is still need for a legal review of the laws, rules and regulation to determine how best to modify these to fit the new plan. Legal resources are needed to carry this out.

## **5. On-Site Management (Tier 2)**

Rationale: The site moved from tier one to tier two over the past year by hiring on two wardens in September 2010. There is still not a full-time site manager, however, and this is a priority position for to be filled. Funding is needed to fill this position but it is believed that a person with the appropriate skills is available on island.

## **6. Enforcement (Tier 2)**

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<sup>5</sup> Some information about this is sensitive and will not be shared publically. For more information about this topic for capacity building, please contact CaMPAM coordinator or site contacts.

Rationale: The site went from tier one to tier two within the past year by hiring on two site wardens in September 2010. Wardens have a wide range of responsibilities including enforcement of regulations, outreach and education to users and stakeholders, maintenance of site infrastructure (e.g. boat and mooring buoys), and biological monitoring. The Grenada Board of Tourism provided a boat to the MPA in 2009. While the enforcement of the site has been recent, it has also been consistent. There are also plans to bring on new wardens in the near future. Site management has expressed an interest in a legal review of the rules and regulations to enhance support for enforcement of the site.<sup>6</sup> Additionally, the wardens have expressed an interest in further enforcement training; they underwent brief training upon starting the position but would like more thorough training on all aspects of enforcement procedures.

## **7. Boundaries (Tier 2)**

Rationale: The original site zoning scheme proved to be complex and unrealistic for enforcement and outreach. In 2006 a simpler zoning and boundary scheme was developed and was further refined through the management planning process that included various evaluations and stakeholder review. The plan defines clear boundaries of the site and establishes specific zones and regulations for various uses. However, a legal review of the zones and regulations is needed. There is also an interest and need for an outreach program and materials (e.g. brochures, posters, signage) to help stakeholders understand boundaries, zones, and regulations.

## **8. Bio-physical Monitoring (Tier 2)**

Rationale: Some biophysical assessments have occurred as part of past research efforts. In addition, recent planning efforts are aimed at collating existing research and collecting critical biophysical and socio-economic information to be used to inform the planning process. Some of this information included water quality testing and various coral reef assessments. Several organizations carried out assessments within the Molinière/Beauséjour area that can be used to provide baseline information. The management plan identifies key indicators to be monitored over time that are directly correlated to management objectives. Additional knowledge gaps in biophysical information that may be addressed through monitoring or possibly through directed research are also identified. “How’s your MPA Doing” was used to develop the monitoring methodology for some of the previous assessments. Personnel (or partners), equipment, and some training are needed to continue this monitoring over time.

## **9. Socio-economic Monitoring (Tier 2)**

Rationale: As with the biophysical monitoring, there have been a variety of assessments carried out that were used to inform the recent management planning process. Surveys took place in 2006 and have been recently re-conducted in 2010 to compare results and/or establish baseline information. Survey information collected included surveys of fishers from the local communities, knowledge, attitude perceptions, user information, as well as willingness to pay. The management plan identifies key indicators to be monitored over time that are directly correlated to management objectives. Additional knowledge gaps in socio-economic

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<sup>6</sup> Some information about this is sensitive and will not be shared publically. For more information about this priority topic for capacity building, please contact CaMPAM coordinator or site contacts.

information that may be addressed through monitoring or possibly through directed research are identified. The monitoring protocol identified in the plan is SocMon Caribbean but it is unclear if that is the approach that is intended to be used for further efforts. Additionally, warden's duties include some monitoring. This monitoring is mostly related to collecting information on occurrence of various uses and activities in the site. Future monitoring is dependent on having personnel or partners to carry out the survey instrument.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: The management plan identifies key indicators to be monitored over time that are directly correlated to management objectives and therefore can be used to measure MPA effectiveness. Wardens will also be collecting information that will be stored in a "report database" of issues they encounter. This will be used to monitor effectiveness in compliance of site regulations over time. There is interest in developing a simplified evaluation checklist, directly linked to their monitoring indicators to help evaluate the progress of site management and its impacts.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: The management planning procedure involved stakeholders throughout the whole process. Additionally, a stakeholder committee was formed to represent the various user groups and interests of the MPA. Stakeholder representatives continue to sit on steering committees to guide planning and implementation of site management. The current legislation does not allow for official co-management of the site but the management plan calls for more direct decision making at the stakeholder committee level rather than national MPA committee level. Legal backing is needed to support this recommendation for co-management of the site.

#### **12. Financing (Tier 1)**

Rationale: Funding for the site is not reliable. Many activities carried out to support the development of the management plan were funded through a project by COTS/USAID. While there are existing funds for the wardens and fuel for the boat, government funding is not sustainable. The management plan calls for the need to develop a finance plan to identify costs of site management as well as opportunities for sustainably financing the site. User fees have been identified as one mechanism to support financing of the site. Finance plans and strategies from Tobago Cays Marine Park and Sandy Island Oyster Bed MPA were identified as good examples.

#### **13. Outreach and Education (Tier 1)**

Rationale: Outreach and Education efforts have not been continuous. During the re-launch in 2010, there were efforts to carry out public awareness. Additionally, part of the warden's duties are to provide users with basic information regarding the site. A communications plan is also provided in the management plan but is not being fully implemented and is only done through isolated efforts rather than through a consistent and strategic approach. Funding for personnel and outreach materials that target various audiences are needed to enable the site to move into the next tier.

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Stakeholders who have a problem generally report their concerns to the wardens or Fisheries Department. Each situation is handled differently depending on the issue at hand and appropriate approach as deemed by the Fisheries office. However, most stakeholders are aware

that the Fisheries Department is the mechanism through which their concerns should be addressed.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: Climate change resilience is something that the site management is beginning to work on and incorporate into the management plan. They recently drafted a bleaching response plan for the island. Additionally, while they did not design the site with climate change resilience in mind, they realized that several objectives of the site will meet climate change resilience objectives. To further progress toward incorporating climate change resilience into management, political will would be required to be able to change certain aspects such as expanding boundaries, and developing alternative livelihoods. There is a need for some political commitment to facilitate research and design to include climate change principles.

#### **16. Alternative Livelihoods (Tier 2)**

Rationale: As part of the management planning process, the site facilitated socio-economic assessments that identified how key stakeholders would be impacted by management activities. However, alternative livelihood programs opportunities have not been identified and/or developed yet. The identification of suitable alternative livelihood opportunities, i training in these opportunities, as well as funding to support a program were identified as needs.

#### **17. Fisheries Management (Tier 3)**

Rationale: Fisheries-use studies were carried out at the site prior to management planning. Additionally, the zoning and regulations of the site were developed with consideration of fishing uses and resource management. Destructive fishing methods are not allowed, and some areas allow only certain methods of fishing that do not damage resources. It is unclear if biological assessments of fisheries populations were used to develop regulations.

#### **18. Integrated Coastal Management (Tier 2)**

Rationale: Adjacent land-based threats to the site are present. Agencies responsible for addressing those threats have assessed some of the them and there is agreement that these threats should be addressed. However, while cooperation and coordination is occurring, implementation of activities to abate land-based threats is not occurring.

#### **19. Sustainable Tourism (Tier 2)**

Rationale: Human use of the area has been assessed and wardens currently monitor use of the area. The zoning scheme outlined in the management plan has taken into consideration recreational use by tourists as well as natural resource protection. However, there has also been an identified need for more personnel and research to understand this balance – in particular limits of acceptable change – to be able to further plan tourism activities. Additionally, stakeholders are involved in helping to define appropriate practices (e.g. time limits for moorings) that will help reduce user conflicts.

#### **20. Organizational Management (Tier 2)**

Rationale: The site is limited in numbers of personnel but not in their abilities. The current priority is for a site manager and also more wardens to enable seven day patrolling of the area. While there is currently limited personnel, they apply the method of working “smarter not harder” to help carry out the best management as possible. For example, wardens patrol on a random schedule so as to not be predictable. Funding for further personnel is needed but skilled applicants are believed to be available pending funds.

**21. Partnerships/Coordination (Tier 2)**

Rationale: While technically the stakeholder committee is not formalized, they operate as if they were. Currently, the committee is an informal partnership but it is waiting to be formalized by the government. The committee is operating in an advisory capacity at this time but working towards a more formal agreement to enable more decision-making authority on the ground. The stakeholder committee is made up of governmental and non-governmental entities who have a vested interest in management of the area. Political support is needed to formalize this committee to co-manage the site.

**22. Economic Valuation (No)**

Rationale: Information has been collected that would contribute to an economic valuation but a study has not been completed. They are interested in this information specifically to support business planning for estimating potential revenues. Additionally, they would like to use the results from an economic valuation study as a tool to bargain and negotiate support from government to invest in the MPA.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: A rapid-response plan has recently been developed and various agencies are being notified of their role. Monitoring programs will also be part of this protocol.

**24. Ecosystem Based Management (Yes)**

Rationale: The understanding of the whole ecosystem was considered when developing the management plan including land and sea interactions as well as human dimensions. These were all included when developing the zoning and regulations for the site.

**25. Community Support (Medium)**

Rationale: According to socio-economic assessments, the support for the site is at a moderate level. This could be improved with further outreach and education.

**26. Government Support (Medium)**

Rationale: Government support is strong from a policy standpoint. However, funding is low.

**Management Capacity Priority Needs**

1. **On-site Management** – specifically the MPA is in need of a full time site manager with an over-arching understanding of MPA management and best practices. Skills in grant writing and fundraising were also identified as critical. It is possible that an on-site manager could help to fulfill this need.
2. **Enforcement** – general enforcement training is needed to cover all aspects of each warden's duties including conflict resolution, legal aspects of enforcement, and approaching stakeholders.
3. **Biophysical Monitoring** - the need for a good monitoring team that is readily available is also a priority. There is a need for both personnel and training. Specific skills needed are diving, transect survey methodology, species id, and data management and analysis.

**Priority Capacity Building Approaches**



1. More staff
2. Technical Support
3. Learning Exchanges

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

### References

Grenada Ministry of Agriculture, Forestry & Fisheries (2010) *Molinière-Beauséjour Marine Protected Area, Grenada Management Plan*. Unpublished MPA planning document.

## Sandy Island - Oyster Bed Marine Protected Area

**Name:** Sandy Island - Oyster Bed Marine Protected Area (SIOBMPA)

**Country:** Grenada, on the island of Carriacou.

**Size:** 787 hectares (7.87 km<sup>2</sup>) on the southwest of Carriacou, stretching along the west coast from the Tyrrel Bay mangroves northward to the airport road in Lauriston, and encompasses Point Cistern, L'Esterre Bay and the Lauriston Point mangroves. The boundary also extends seaward beyond Sandy Island, Mabouya Island, and the Sister Rocks.

**Management Agency:** SIOBMPA Co-management Board, composed of Carriacou Environmental Committee, Carriacou Historical Society Inc., Ministry of Carriacou and Petit Martinique Affairs, Grenada Ports Authority (Carriacou Office), Fisheries Division –Ministry of Agriculture, Forestry and Fisheries, Royal Grenada Police Force (Northern District), Grenada Board of Tourism (Carriacou Office), Grenada Scuba Diving Association – Carriacou, Carriacou and Petit Martinique Water Taxi Association, Carriacou Fisherfolk representative, and Carriacou Fisheries Officer.

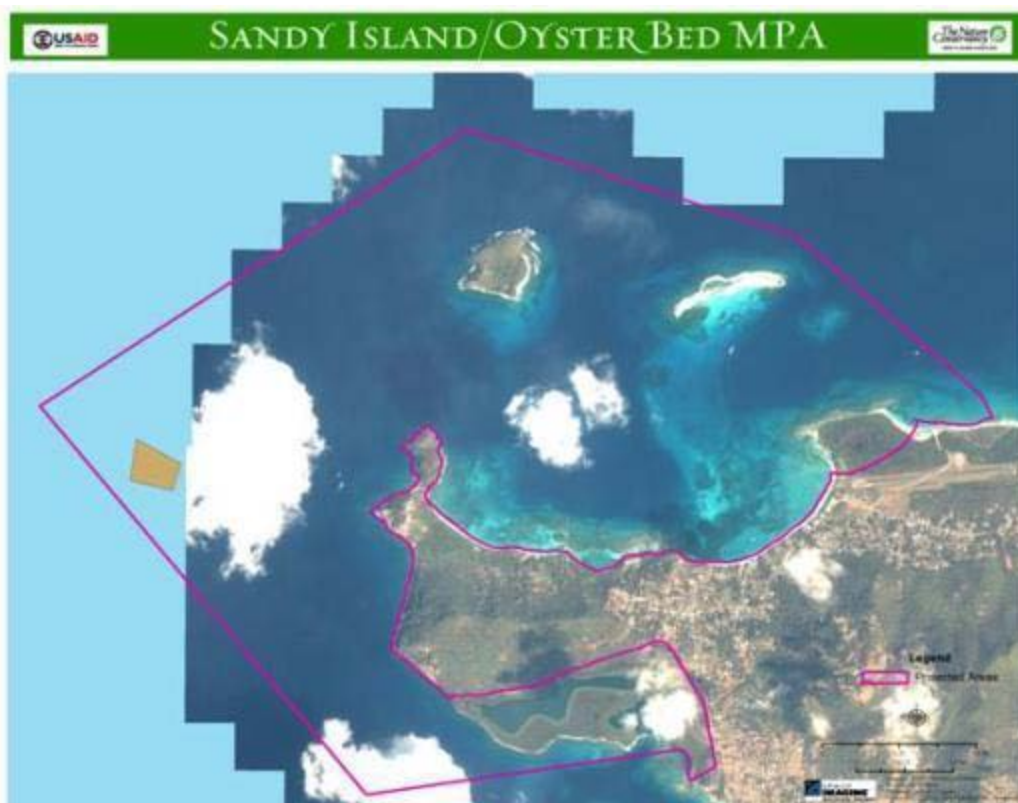
**Site Resources:** The area within the SIOBMPA has extensive reefs, mangroves and seagrass beds. The mangroves are renowned as the habitat for the mangrove oyster, and serve as nursery grounds for several species of fish. The mangroves of Tyrrel Bay are especially important to local boat owners who use the area to secure their boats during tropical storms. Sandy Island is a cultural landmark for the people of Carriacou. Other resources are reef fishes, sea turtles, and offshore islands.

**Site Uses:** The primary activities occurring within the park include recreational diving, recreational use, water taxi/charter craft usage, anchoring, pot (i.e. trap) fishing, spear fishing, and seine fishing.

**Threats:** Primary threats include over-fishing, inappropriate development, clearing and dredging.

**Site Contact:** Roland Baldeo (MPA Coordinator) Fisheries Division) phone: (473) 440-2708 email: [rolandbaldeo@hotmail.com](mailto:rolandbaldeo@hotmail.com).

**Other Contacts:** Sustainable Grenadines Inc. (SusGren) is a local transboundary NGO that works collaboratively with MPAs in this region to foster improved management capacity. SusGren has recently facilitated the development of a formalized Grenadines Network of MPAs (i.e. TCMP, SIOBMPA, and MBMPA) in January 2011. The agreement signed among these sites fosters collaboration between the MPAs and their partner organization, and information sharing on all aspects of MPA management. SusGren has also launched a unique initiative to carry out multi-national Marine Spatial Planning in the region with the aim of developing a multi-use zoning plan for the entire Grenadines. Based on these efforts, SusGren provides an excellent venue for collaborative partnerships among governments and NGOs, and shared capacity building activities among the MPAs of the Grenadines.



**Figure 25 Map of Sandy Island Oyster Bed Marine Protected Area.**

Question	Purpose
	<ol style="list-style-type: none"> <li>1. Conserve the coastal and marine ecosystems through effective management for current and future generations.</li> <li>2. Ensure that all stakeholders/communities are empowered and fully engaged in the management of the park.</li> <li>3. Ensure that SIOBMPA is an integral part of a marine protected areas network in the Grenadines, the Caribbean and more broadly, the world.</li> <li>4. Increase socio-economic benefits to the community of Carriacou and the wider Caribbean while preserving the cultural value of the SIOBMPA.</li> <li>5. Increase awareness and knowledge about the resources of the SIOBMPA.</li> </ol>

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning		x	

3	Ecological Network Development	x		
4	Governance		x	
5	On-site management		x	
6	Enforcement		x	
7	Boundaries		x	
8	<b>Biophysical Monitoring*</b>	x		
9	<b>Socioeconomic Monitoring*</b>	x		
10	MPA Effectiveness Evaluation	x		
11	Stakeholder Engagement			x
12	Financing	x		
13	Outreach and Education		x	
14	Conflict Resolution Mechanism		x	
15	Resilience to Climate Change			x
16	Alternative Livelihoods		x	
17	<b>Fisheries Management*</b>	x		
18	Integrated Coastal Management	x		
19	MPA Sustainable tourism			x
20	Organizational Management	x		
21	Partnerships/Coordination		x	
	<b>Assessment Area</b>	<b>YES</b>	<b>NO</b>	
22	Economic Valuation	x		
23	Emergency Response			x
24	Ecosystem Based Management	x		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		x	
26	Government Support	x		

\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 2)

Rationale: A management plan was written for SIOBMPA in 2007 that outlines immediate and long-term management goals and activities, threats, and conservation strategies. Zoning and financial sustainability are also addressed. The plan is not being followed completely because of time limitations, and day to day distractions. Many of the activities that were identified like designation were completed, but funding is needed for better implementation. Other needs to promote implementation include training in MPA management and best management practices. There is also a need for a centralized office and a person in charge to concentrate data and information.

## 3. Ecological Networking (Tier 1)

Rationale: SIOBMPA is part of the National MPA network, but coordination is limited.

#### **4. Governance (Tier 2)**

Rationale: SIOBMPA has rules on some fishing activities but more defined rules are needed for boating. Beach activities and other recreational activities need to be clearly defined. For example, there are problems with the anchoring zone being too shallow.

In general, regulations are not very detailed. The management plan has general guidelines regarding spear fishing and pot fishing, anchoring, motorized personal watercraft (jet skis), recreational non-extractive activities, seine fishing, dive moorings, turtle harvesting, coral and sand, and vehicles on the beach. Nevertheless, there is a need for a resource person or organization to do a revision and produce more detailed regulations.

#### **5. On-Site Management (Tier 2)**

Rationale: Management of SIOBMPA started last year. There are three wardens and a fisheries extension officer who helps to manage the MPA, but there is no full time manager. There is some community oversight

SIOBMPA needs the funds to hire a manager and officer. There are limited human resources on the island who could be hired but they might need MPA training.

#### **6. Enforcement (Tier 2)**

Rationale: There are wardens patrolling. There is presence, but not vigorous patrolling and enforcement. The wardens have not been trained in enforcement. The personnel have legal authority in the MPA but lack the capacity. Wardens can make arrests and confiscate contraband, but are not allowed to carry weapons.

Capacity needs include training of enforcement officers, and equipment – good boats, binoculars, etc. There is a need to pursue the ability of wardens to carry weapons because of foreign boats illegally fishing in SIOBMPA. Currently, when armed enforcement is needed, the Coast Guard has to be called.

#### **7. Boundaries (Tier 2)**

Rationale: The boundaries and zones within the site have been defined. Zoning is generally outlined in the management plan, but a more detailed zoning scheme is being considered. There are demarcation buoys for the outer boundary, and mooring buoys are also in place. A new anchoring area is being considered as a new zone. Demarcation is an on-going process, but time is needed to complete the process.

#### **8. Bio-physical Monitoring (Tier 1)**

Rationale: An AGRRA was completed in 2006 so there is baseline information for the site. Additionally, in 2010 a survey was completed at the mooring sites. On-going bio-physical monitoring has not started due mainly to lack of capacity. There is need for capacity building and equipment. Seeking the support of diving shops for monitoring is being considered.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: The management board drafted a survey for an assessment, but funding is limited for socio-economic monitoring. There is need for funding to hire someone to do the monitoring,

analyze the results, and compile them into a report. Outsourcing or just getting assistance via resource organizations are potential options.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: There is no standardized evaluation method being used at the site to assess MPA effectiveness. Also, given the challenges in staffing to carry out bio-physical and socio-economic monitoring, it would be challenging for the site to regularly evaluate effectiveness of conservation measures.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: The community is very involved in management through the stakeholder co-management board. Community and stakeholders are involved in the decision-making. Stakeholders were involved in the preparation of the management plan through stakeholder meetings.

SIOBMPA is willing to mentor other sites, as they have already helped Moliniere in this regard.

#### **12. Financing (Tier 1)**

Rationale: There is government funding for wardens, but in general there is not enough funding for the site needs. Current funding is minimal but reliable. Mooring fees are currently collected at the site.

Once SIOBMPA becomes a marine park it will receive more funding through vendor fees, more attractions, and more users. There is need to define how to develop the whole park structure to attract more people. Having more mooring buoys and trails will make it more attractive.

#### **13. Outreach and Education (Tier2 )**

Rationale: There are some outreach and education activities that occur for the SIOBMPA, with public schools and fishermen as target audiences. Before launching the MPA, all schools through Carriacou were visited. After the MPA was launched, all the schools were engaged. Nevertheless, outreach and education is not on-going. Managers would like to work in tandem with the schools and have teachers trained who can pass knowledge gained on to the students.

While there are some brochures, posters, and interpretive signs, additional Educational materials and the development of a library with outreach materials (videos, brochures, posters, etc.) is needed. There is also a need for training of teachers, and the creation of an “MPA club” with different activities (have t-shirts, plant trees, etc.).

#### **14. Conflict Resolution Mechanism (Tier 2)**

Rationale: There is a stakeholder board in place which is involved in management and works as a mechanism to resolve issues among resource users. Nevertheless, not all stakeholders understand how the board works and the mechanism structure. Education is needed to make people aware of rules and the stakeholder’s board.

#### **15. Climate Change Resilience (Tier 3)**

Rationale: Climate change issues such as to how to mitigate CC, reduce threats and protect mangroves, and use and over-use, are important and were considered when developing the management plan. One of reasons for the creation of the MPA was erosion on Sandy Island due

to severe weather that impacted staghorn coral. A study showed that coral was being lost due to the erosion of the seabed. Developing resilience to climate change was considered as a mechanism to protect corals. Specific strategies to reduce impacts from climate change over time are included such as creation of a no-wake zone and planting trees to restore beaches.

#### **16. Alternative Livelihoods (Tier 2)**

Rationale: No formal assessment was conducted, but there is some consideration for alternative livelihoods in the management plan. The awareness of the potential impact of MPA regulations over resource users is perceived. Alternative livelihood opportunities still need to be fully developed. However, The Nature Conservancy developed a finance plan for SIOBMPA that outlines potential activities related to alternative livelihoods. Additionally, there has recently been a fisher exchange to Dominica on use of Fish Aggregating Devices funded by UNEP through GCFI.

#### **17. Fisheries Management (Tier 1)**

Rationale: An assessment of the fisheries has not been conducted for SIOBMPA. Capacity is lacking and personnel's training is needed.

#### **18. Integrated Coastal Management (Tier 1)**

Rationale: Awareness of the importance of integrated coastal management is in place. There is also involvement from the ministries. Nevertheless, even though awareness of the connection between upland and coastal areas exists, no formal efforts for coordination are in place. When the plan was in the beginning phase, there were a couple of specialists who looked at integrated coastal management. Some current issues include the existence of a marina adjacent to the SIOBMPA, and development near the marina is affecting the salt flat, oyster bed, and mangroves. Marina developers are looking for more salt flats to develop and use. There are no sewer systems or septic tanks in place, and when it rains, the area becomes very nutrient ridden affecting the oysters and the mangroves. All grey water goes to the sea from the developed area.

#### **19. Sustainable Tourism (Tier 3)**

Rationale: There are two tourism development plans in place, a national one and another for Carriacou. Conditions for sustainable tourism are known and were included in the management plan. Emphasis has always been on sustainable development. The National Sustainable Tourism Plan and the Carriacou Integrated Environmental plan describe fairly completely the opportunities for sustainability. Several studies along that line have been conducted. Carriacou is the only part of the Grenada that has had a full sustainable tourism study conducted. Implementation of the plan is needed. However, there is also an initiative to implement a free trade zone with a port being planned for Carriacou that could negate much of this work.

#### **20. Organizational Management (Tier 1)**

Rationale: This is a new MPA. Local personnel need to be in place and then receive training.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: Informal partnerships with many stakeholders are in place at SIOBMPA. There is a co-management agreement, and many local NGO's are present on the board. Some development in this area is needed in order to have a formal group that can be coordinated to carry out

activities. The main challenge is time and having the personnel to actually do the coordination. To move to a higher tier, there is need for a formal plan for the coordination process.

## **22. Economic Valuation (Yes)**

Rationale: An economic valuation of resources was conducted by TNC. The study was useful for public awareness and to develop alternative livelihood opportunities for the people.

## **23. Rapid Response Protocol/Team (No)**

Rationale: No rapid response team or protocols are in place. There is concern for potential oil spills and its impacts as there are numerous small spills that occur on regular basis in Tyrrel bay.

## **24. Ecosystem Based Management (Yes)**

Rationale: Ecosystem-based management was used in the preparation of the management plan. Many ecosystems and habitat types were included as conservation targets, such as coral reefs, mangroves, seagrass beds, sandy beaches, and offshore islands. Reef fish and sea turtles were also considered. Even social aspects were included through several stakeholder meetings that were held to provide input into the plan development.

## **25. Community Support (Medium)**

Rationale: Community support is medium to high. There is no resistance from the community in general, even though some resistance comes from the fishermen. There is a lot of awareness about benefits of the MPA, so community support will increase even more in the future.

## **26. Government Support (High)**

Rationale: There was a management plan completed in 2007 that was not implemented at the time but has recently had many activities implemented. When the new MPA coordinator came on board, support increased. When the Act was established in 2002, a budget was assigned but due to change in government personnel, the support dropped. Fisheries Department secured the support from politicians and now things are improving and there has been much progress including mooring buoys, markers, outreach materials, official designation, the formation of a co-management committee, hiring of wardens, obtaining a boat, and training.

### **Management Capacity Priority Needs**

- 1. Bio-physical monitoring training**
- 2. Socioeconomic monitoring**
- 3. Fisheries Assessment**

### **Priority Capacity Building Approaches**

- 1. Training**
- 4. Learning exchanges**
- 5. More staff**

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.



### References

The Nature Conservancy and Grenada Fisheries Division (2007) *Sandy Island/Oyster Bed Marine Protected Area Management Plan*. Unpublished MPA planning document.

## Honduras

**Dates of Interviews:** March 22 to 25, 2011 and May 10<sup>th</sup> (Cayos Cochinos)

**Interviewer:** Alex Arrivillaga

**Agencies/Organizations Interviewed:** Bay Islands Conservation Association-Roatan, Bay Islands Conservation Association -Utila, Roatan Marine Park, Fundación Hondureña para los Arrecifes de Coral.



## Monumento Natural Marino Archipiélago Cayos Cochinos

**Name:** Monumento Natural Marino Archipiélago Cayos Cochinos

**Country:** Honduras

**Size:** 489.25 km<sup>2</sup>

**Management Agency:** Honduran Institute for Forest Conservation and Development, Protected Areas and Wildlife (Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre, ICF) in co-management with Fundación Hondureña para la protección y conservación de los Cayos Cochinos.

**Site Resources:** coral reefs, seagrasses, algae, mangroves, reef fishes, lobster and conch, islands with terrestrial vegetation, sandy keys, turtle nesting sites, sea birds, snakes and amphibians,

**Site Uses:** fishing, navigation, tourism.

**Threats:** invasive species like casuarinas, noni, and rats are considered threats to the protected area in general. Other threats include hurricanes, coral bleaching and diseases, decrease in herbivore abundance, algae proliferation.

**Site contact:** Adrian Oviedo, (Director Ejecutivo), Fundación Hondureña para la protección y conservación de los Cayos Cochinos, Tel. (504) 4422670 / 4434075, email: [aeoviedo@psinet.hn](mailto:aeoviedo@psinet.hn)

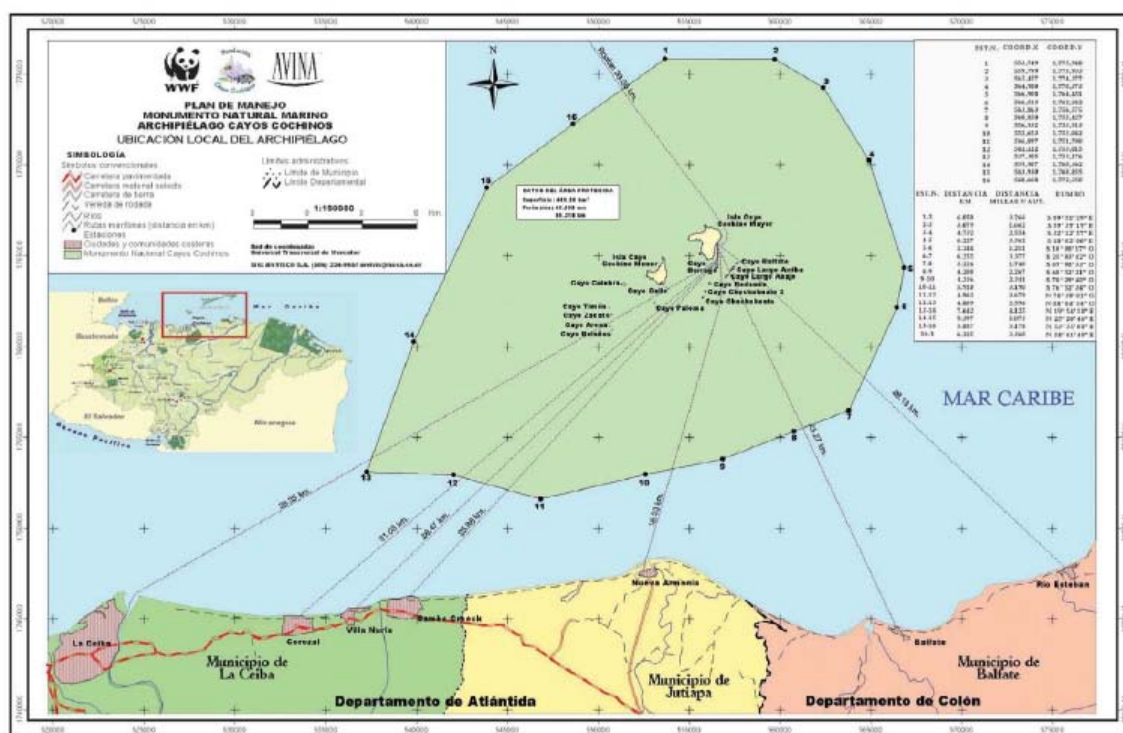


Figure 26 Map of Monumento Natural Marino Archipiélago Cayos Cochinos

Question	Purpose
	a) Maintain Cayos Cochinos archipelago ecosystems as a representative sample

	<p>of coral reefs of the Caribbean Sea and Special Mesoamerican Barrier Reef System, as well as the associated island ecosystems, tropical forests, mangroves, sandy and rocky beaches, and the species that inhabit them.</p> <p>b) Protect examples of communities, natural ecosystems, and landscape to protect the unique diversity and representative in the region.</p> <p>c) Maintain and manage the genetic material as an element of natural communities which act as nurseries to avoid species loss in the natural protected area, especially those important for artisanal, scientific and sport fishing, and performed in the area, as well as the industrial fishing practiced outside it.</p> <p>d) Provide means and opportunities for education, research and monitoring, for ecological and cultural processes.</p> <p>e) Provide opportunities for recreation and low-impact ecotourism according to their potential, their limits of acceptable change and resources so that they serve as a model ecotourism harmonizing with the cultural and natural characteristics of the protected area.</p> <p>f) Generate the necessary information to demonstrate the effects and impacts to the ecological balance of natural protected area and areas of influence, in order to support management decisions.</p> <p>g) Allow for the normal development of the traditions and lifestyles of ethnic groups living within the protected area, respecting their traditions and local ecological knowledge, and all assets that contribute to the achievement of new development initiatives for these groups, provided they do not contravene the provisions of the law.</p> <p>h) Develop liaison mechanisms, aimed at promoting the incorporation of the communities located within the protected area and areas of influence and other stakeholders, to help boost the dynamics of sustainable development.</p>
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Question	Purpose	Yes	No
1b	Same as above.	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development		X	
4	Governance			X
5	On-site management			X
6	Enforcement			X
7	Boundaries			X
8	Biophysical Monitoring		X	
9	<b>Socioeconomic Monitoring*</b>	X		X
10	MPA Effectiveness Evaluation		X	
11	Stakeholder Engagement			X
12	Financing			X

13	Outreach and Education			X
14	Conflict Resolution Mechanism			X
15	Resilience to Climate Change		X	
16	Alternative Livelihoods			X
17	<b>Fisheries Management*</b>		X	
18	<b>Integrated Coastal Management *</b>		X	
19	MPA Sustainable tourism			X
20	Organizational Management		X	
21	Partnerships/Coordination			X
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation	X		
23	Emergency Response	X		
24	Ecosystem Based Management	X		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		X	
26	Government Support		X	

\*denotes identified priorities for capacity building.

## 2. Management Planning (Tier 3)

Rationale: the second approved management plan is being implemented.

## 3. Ecological Networking (Tier 2)

Rationale: site is member of the regional network REHDES (Red Ecologista Hondureña para el Desarrollo Sostenible), and of the Mesoamerican Barrier Reef. Site is also member of the national system of protected area SINAP, of which it is a priority area.

## 4. Governance (Tier 3)

Rationale: the approved management plan and the site declaration decree are official laws. There are rules and regulations contained in the management plan that cover all activities within the MPA.

## 5. On-Site Management (Tier 3)

Rationale: there is a full-time site manager and there is also programmatic personnel assigned to the site. Community members do not participate directly in management but they have a seat on the Committee for the restoration, protection, and sustainable management of the MPA.

## 6. Enforcement (Tier 3)

Rationale: law enforcement does not depend on the co manager alone. There is permanent enforcement of the law in the site even though arrests do not result in convictions.

**7. Boundaries (Tier 3)**

Rationale: there are demarcation buoys in the southern border of the MPA where most of the stakeholders and neighboring communities operate. Out of the 25 demarcation buoys, only 10 are in place. Boundaries are marked mostly where they are needed. There are also mooring buoys for sailboats and dive boats. The information on the location of boundaries is provided via the MPA website and also through the merchant marine service.

**8. Bio-physical Monitoring (Tier 2)**

Rationale: most of the monitoring efforts are conducted through the scientific tourism program, therefore only selected information is used. The management plan does not have numerical goals or objectives for biological conservation targets. Some of the methods used include carrying capacity assessment, level of accepted change, AGRRA, Reef Check, MBRS Synoptic Monitoring System, and terrestrial monitoring methods for the endemic boa.

**9. Socio-economic Monitoring (Tier 1)**

Rationale: socioeconomic assessment of specific topics is conducted in coordination with Operation Wallacea. For example the community level of satisfaction with the MPA has been assessed. The SocMon methods are used; however, management effectiveness evaluations include a socioeconomic component that monitors performance. Socioeconomic monitoring is the first priority for capacity building at Cayos Cochinos. This capacity area could improve with adequate technical support.

**10. MPA Effectiveness Evaluation (Tier 3)**

Rationale: ICF has measured MPA effectiveness for five years using the PROARCA/ICF methods. The results from these evaluations are used to focus management in areas that need improvement.

**11. Stakeholder Engagement (Tier 2)**

Rationale: there are three levels of stakeholder participation. First, there is the Cayos Cochinos Inter-institutional Commission, where ministers, land owners, the Cayos Cochinos Foundation (CCF), and three community leaders participate (fishermen, ethnic groups, and general community). Second, there is a community negotiating commission where the CCF and the communities meet every three months to discuss problems. Third, there is day to day contact between the MPA management and the communities, through the public use person.

**12. Financing (Tier )**

Rationale: sources of funding for the MPA include entrance fees, scientific tourism, and fees paid by reality shows filmed at the MPA. Of these three, entrance fees are the only long term source of funds. The other two sources were affected by the recent political crisis in the country.

**13. Outreach and Education (Tier 3)**

Rationale: the new management plan includes an outreach and education plan for the MPA. Moreover, a RARE Pride campaign will begin shortly in the MPA, with an audience of fishermen and formal and informal education. RARE campaigns are done through social-marketing approaches to change behavior around specific threats to a resource.

**14. Conflict Resolution Mechanism (Tier 3)**

Rationale: there are several mechanisms for conflict resolution in place. The community commission is the most efficient mechanism. There are also legal mechanisms through the environmental public prosecutor.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: knowledge of reef resilience to climate change has been acquired through TNC and NOAA. Management actions to build resilience included the increase of the MPA area to include important resilient sites (e.g. additional areas taking into consideration and connectivity with mainland).

and connectivity with mainland habitat types.

#### **16. Alternative Livelihoods (Tier 3)**

Rationale: a socio-economic assessment of the impacts of the MPA on resource users was completed. Based on the findings of this assessment, alternative livelihood opportunities were developed. Some of the alternatives implemented are focused on tourism both inside the MPA and in neighboring communities including hotels, restaurants, handicrafts workshops.

#### **17. Fisheries Management (Tier 2)**

Rationale: a fisheries assessment was conducted and a fisheries management plan was developed. The plan still has to be implemented. Fisheries assessment used the ecosystem based approach to fisheries. Fisheries management training is the second most important capacity need for Cayos Cochinos. Adequate financing is needed to increase this capacity.

#### **18. Integrated Coastal Management (Tier 2)**

Rationale: Coastal threats in adjacent watersheds have been assessed. Main threats coming from watersheds include sedimentation and agrochemical pollution. Terrestrial conservation on the mainland is the responsibility of the Nombre de Dios and Pico Bonito Foundation with whom there is coordination. However, this organization lacks the strength to properly address the threats.

#### **19. Sustainable Tourism (Tier 3)**

Rationale: tourism activities are managed and conducted according to the sustainable tourism plan included in the official management plan for Cayos Cochinos.

#### **20. Organizational Management (Tier 2)**

Rationale: MPA personnel are limited in terms of numbers due to the financial and political crises. Currently there is a 20% shortage in the MPA personnel. People with the right capabilities are available but the funding to hire them is lacking.

#### **21. Partnerships/Coordination (Tier 3)**

Rationale: There is a formally coordinated group of organizations involved in the conservation of the area. A formal co-management agreement exists with ICF. Formal MoUS have been signed with the Ministry of Agriculture and Animal Husbandry (SAG), the Honduran Navy, Operation Wallacea, and others. Coordination with communities is through the commission.

#### **22. Economic Valuation (Yes)**

Rationale: economic valuation has been conducted for coral reefs and for the endemic pink boa. This type of information is valuable to assess fines for damages to the reef.

### **23. Rapid Response Protocol/Team (Yes)**

Rationale: rapid response protocols exist for coral bleaching and invasive lionfish. The Permanent Contingencies Committee (COPECO) coordinates emergencies like hurricanes for evacuating Cayos Cochinos when needed.

### **24. Ecosystem Based Management (Yes)**

Rationale: ecosystem-based management principles have been considered in the management planning of the Cayos Cochinos. For example, the expansion of the MPA area to include the mainland shoreline in the buffer zone is an effort to protect important nursery areas. The protection of fish spawning aggregations is another example of ecosystem-based management.

### **25. Community Support (Medium)**

Rationale: local communities provide excellent support in management planning but are not involved as yet in management implementation.

### **26. Government Support (Medium)**

Rationale: good support is received from the Honduran Navy, but support from ICF and SAG-DiGEPECA could improve.

## **Management Capacity Priority Needs**

1. Socioeconomic monitoring
2. Fisheries management
3. Integrated coastal management

## **Priority Capacity Building Approaches**

1. Technical support
2. Other – financial support
3. Learning exchanges

## **References**

*Declaratoria del Monumento Natural Marino Archipiélago Cayos Cochinos, Honduras*. La Gaceta, Republica de Honduras, 11 de noviembre 2003. No. 30,236.

[http://www.cayoscochinos.org/pdf/Cayos\\_Cochinos\\_Ley\\_A.pdf](http://www.cayoscochinos.org/pdf/Cayos_Cochinos_Ley_A.pdf)

The Nature Conservancy and Fundación Cayos Cochinos (2008) *Plan de manejo del Monumento Natural Marino Archipiélago Cayos Cochinos, Honduras*. 2008-2012.

<http://www.cayoscochinos.org/pdf/plan%20de%20manejo%20publicado.pdf>



## Zona de Protección Especial Marina Sandy Bay - West End

**Name:** Zona de Protección Especial Marina Sandy Bay - West End

**Country:** Honduras

**Size:** 941 hectares (9.41 km<sup>2</sup>) on the Western end of Roatan Island.

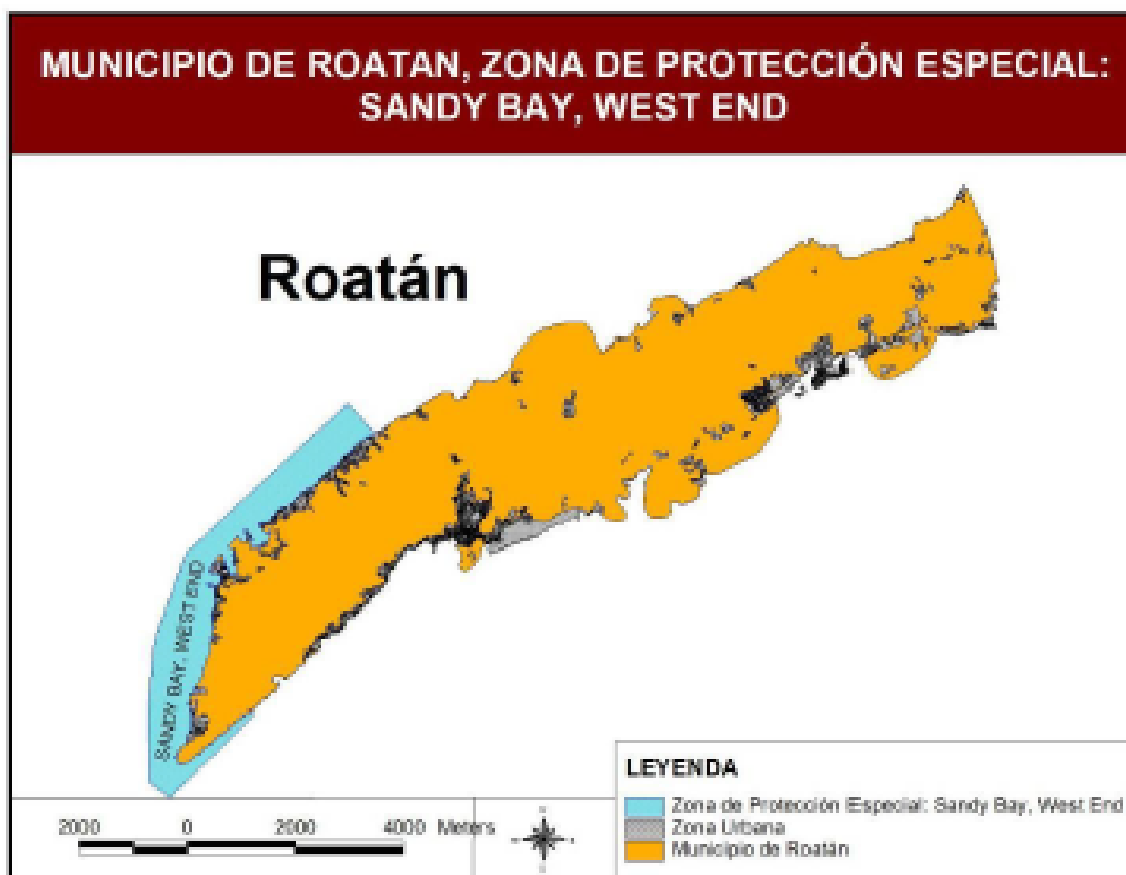
**Management Agency:** Honduran Institute for Forest Conservation and Development, Protected Areas and Wildlife (Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre, ICF) in co management with the Bay Islands Conservation Association (BICA – Roatan) and a MOU with the Roatan Marine Park (RMP).

**Site Resources:** seagrasses, seaweeds, fringing and barrier reefs, sandy beaches, fossil emerged reef (iron shore), reef fishes, mangroves, and bays.

**Site Uses:** tourism, navigation, artisanal fishing.

**Threats:** coastal development, illegal fishing, unsustainable tourism practices.

Site Contact: Irma Brady, Executive Director, Bay Islands Conservation Association (BICA-Roatán); Tel. (504) 2445-3117; email: [bicarootan@yahoo.com](mailto:bicarootan@yahoo.com). Grazzia Matamoros, Executive Director, Roatán Marine Park (RMP), Tel. (504) 2445-4206; email: [grazzia.matamoros@roatanmarinepark.net](mailto:grazzia.matamoros@roatanmarinepark.net).



**Figure 27 Map of Zona de Protección Especial Marina Sandy Bay - West End**

Question	Purpose
	The primary purpose is biodiversity conservation through active participation of central and local governments, private enterprise, ethnic groups and NGOs in management activities.

Question	Purpose	Yes	No
1b	<p>Protect natural and scenic areas of interest and national and international significance for scientific, educational, recreational and tourist purposes.</p> <p>Protect in perpetuity in a natural state as possible, representative examples of physiographic regions, biotic communities, genetic resources and species to provide diversity and ecological stability.</p> <p>Manage the use of the area by visitors for educational, cultural and recreational levels, such that the area is kept as close to its natural state.</p> <p>Eliminate and prevent future exploitation or occupation that runs counter to the management objectives.</p>	X	

	Maintain respect for the ecological attributes, geomorphologic, aesthetic or sacred that led to the designation of the site as a Special Protection Area. Take into account the needs of traditional / local populations including the use of resources in subsistence activities, provided the activities do not affect management objectives.		
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CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning		X	
3	Ecological Network Development		X	
4	Governance		X	
5	On-site management			X
6	Enforcement		X	
7	Boundaries			X
8	Biophysical Monitoring	X		
9	Socioeconomic Monitoring	X		
10	MPA Effectiveness Evaluation		X	
11	Stakeholder Engagement		X	
12	<b>Financing*</b>		X	
13	Outreach and Education			X
14	Conflict Resolution Mechanism	X		
15	Resilience to Climate Change		X	
16	<b>Alternative Livelihoods*</b>		X	
17	Fisheries Management	X		
18	<b>Integrated Coastal Management*</b>		X	
19	MPA Sustainable tourism		X	
20	Organizational Management		X	
21	Partnerships/Coordination		X	
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation	X		
23	Emergency Response			X
24	Ecosystem Based Management	X		
ENABLING ENVIRONMENT				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		X	
26	Government Support		X	

\*Denotes identified priorities for capacity building.

**2. Management Planning (Tier 2)**

Rationale: there is a draft management plan that has not been officially approved as yet. Not having an officially approved management plan limits law enforcement.

**3. Ecological Networking (Tier 2)**

Rationale: the MPA is not designed to support a network. There is an umbrella organization, the Red Ecologista Hondureña para el Desarrollo Sostenible, REHDES, which coordinates actions for MPAs in the northern coast of Honduras.

**4. Governance (Tier 2)**

Rationale: there are several official rules and regulations, including the fisheries law, municipal 'ordenanzas', mangrove protection law, and others that have identified specific items and actions regarding artificial beaches, dredging, and iron shore protection.

**5. On-Site Management (Tier3 )**

Rationale: BICA is a local community organization in charge of site management.

The RMP has full-time personnel in charge of developing management activities. Personnel and board members include local leaders from West End and Sandy Bay.

**6. Enforcement (Tier 2)**

Rationale: BICA cannot enforce the law but can only report violations. Law enforcement in Honduras has a very complex structure with general prosecutor (district attorney) and courts. Even though violations are reported during patrolling, prosecution rarely reaches a court.

The RMP patrols the MPA with the National Police, who enforce existing rules and regulations. Unfortunately, some of the regulations are not very clear or are biased. For example Article 53 of Fishing Law states that the use of harpoons, nets, gaffs, spears, etc. is strictly prohibited in the hunting of turtles, leaving open the question if turtles can be hunted in other ways. On the other hand, Article 29 of the Executive Agreement Number 002-2004 clearly states it is forbidden to hunt and/or trade any flora or fauna species that are endangered, especially black coral and sea turtles; this includes every sub-product or handcraft made out of them.

**7. Boundaries (Tier 3)**

Rationale: All boundaries are demarcated in maps but not all are marked with buoys. Mooring buoys for sailboats and for dive boats are available. Demarcation buoys are ready to be installed in many areas.

**8. Bio-physical Monitoring (Tier 1)**

Rationale: There is no ongoing biophysical monitoring program in place. In the past, some assessments have been conducted by Programa de Manejo Ambiental de Islas de la Bahía (PMAIB) and Healthy Reefs. The site at West End Wall has been assessed several times in the past and could with some reinforcement serve as the basis of a monitoring program in the MPA. A monitoring program is schedule to start next year.

**9. Socio-economic Monitoring (Tier 1)**

Rationale: There is no socioeconomic monitoring program in place, even though several independent assessments have been conducted.

**10. MPA Effectiveness Evaluation (Tier2 )**

Rationale: effectiveness has been assessed in the past a few times by ICF (formerly COHDEFOR) and TNC. GEF tracking tools have been used in the past.

**11. Stakeholder Engagement (Tier 2)**

Rationale: there is an acceptable level of stakeholder participation in management planning and implementation although these can be improved. Stakeholder involvement in the park management includes fishermen, patronatos, dive shops and water taxis, hotels and realtors.

**12. Financing (Tier 2)**

Rationale: The current level of funding is not adequate. Current GEF funding is in place. ICF provides technical support and the central government has funding but it generally is focused on areas with more pressing needs. The RMP implements some sustainable funding mechanisms such as the voluntary user fee charged to divers by dive shops, merchandise sales at the eco store located in West End and booths at both cruise ship docks, donations, and memberships. However, income depends on tourism and generation of funds is always a challenge during low season. Financing was identified in this assessment as the number one priority for capacity building for the MPA. Training in financial management is desirable for this site.

**13. Outreach and Education (Tier 3)**

Rationale: an environmental education program has been in place since 1992 with a focus is on elementary schools. Through the Coral Reef Leadership Network, the RMP has identified and trained leaders who provide training on conservation, sustainable tourism and good environmental marine recreational practices. Education and outreach programs target different stakeholders including dive shops, tour guides, water taxi captains and land taxi drivers, teachers, patronato leaders, among others.

**14. Conflict Resolution Mechanism (Tier 1)**

Rationale: there are no conflict resolution mechanisms in place and the area experiences numerous and diverse conflicts. In West Bay there are conflicts during cruise ship days, weekends, holidays, or primarily high visitation days. Management Plan approval is necessary so that a zoning scheme can be designed and implemented. Roatan Marine Park often mediates when new conflicts, such as the use of parasails and underwater scooters, arise. West Bay is an area with high density of use, due to the municipality approving many permits, as they represent an income to the municipality.

**15. Climate Change Resilience (Tier 2)**

Rationale: co managers are familiar with resilience concepts through a TNC sponsored workshop. The Honduran government has a national policy for climate change that focuses on forest and infrastructure. Most of the actions focus on mitigation and adaptation such as reducing forest clearing and land movements during the rainy season. There is also a coral bleaching monitoring program in place, the Mesoamerican Coral Reef Watch Program.

**16. Alternative Livelihoods (Tier 2)**

Rationale: Development of alternative livelihoods is recognized as important but no assessment of specific needs has been conducted. A few start-up funds have been provided to the most needed groups, such as fishermen and housewives for the development of tourism microenterprises. The Roatan Marine Park has provided scholarships for dive master training.

Alternative livelihoods were identified as the second most important priority for capacity building in this site. Both training and start-up capital grants/loans are needed.

#### **17. Fisheries Management (Tier 1)**

Rationale: a fisheries assessment was conducted in 1999-2002 by the GEF funded PMAIB Project. Fishing is an economically important activity. Fishing in the area is important for subsistence fishermen and for sport fishing. Fishing in Roatan is permitted only with the use of hook and line. A fisheries management plan for this MPA is needed.

#### **18. Integrated Coastal Management (Tier 2)**

Rationale: the identification of priority watersheds, conservation levels, and sources of water has been documented. There are a total of 12 watersheds draining into the MPA. The municipalities and the Ministry of Environment (SERNA) are responsible for watershed management, but coordination is limited. An integrated coastal-zone management plan is needed for this site.

#### **19. Sustainable Tourism (Tier 2)**

Rationale: In Honduras there is a National Strategy for Tourism that identifies the northern Honduran coast and the Bay Islands as priority. There are rules from 2004 (Acuerdo 002-2004) that regulates construction in the coastal zone. Mooring buoys for dive boats were installed by the dive shops and the RMP provides maintenance.

#### **20. Organizational Management (Tier 2)**

Rationale: current MPA personnel are limited. At least 12 park rangers are needed but there are currently only 6. Both BICA and RMP have an executive director for the MPA. BICA's executive director is the NGO director responsible for the MPA management.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: The new wildlife and forestry law mandates the creation of local and regional community consultation councils. These councils are not in place, as the law is relatively new.

#### **22. Economic Valuation (Yes)**

Rationale: An economic valuation of the resources was conducted in 2002. The information from the valuation was useful to put a value on the resource conservation. This information is also useful for outreach and education regarding the value of the MPA.

#### **23. Rapid Response Protocol/Team (No)**

Rationale: Even though the invasive lionfish is being addressed, there are no protocols in place to address the invasion. A strategy for management of the lionfish invasion is needed.

#### **24. Ecosystem Based Management (Yes)**

Rationale: ecosystem base management is being applied in regards to the integration between watershed and reefs.

#### **25. Community Support (High)**

Rationale: certain areas and topics have more community support than others. For example, environmental education, buoy maintenance, and reforestation and beach cleanups have good community support. In West Bay, on the contrary, local businesses provide limited support.

**26. Government Support (Medium)**

Rationale: government financial and technical support, as well as enforcement could be stronger.

**Management Capacity Priority Needs**

1. Financing
2. Integrated Coastal Management
3. Alternative livelihoods

**Priority Capacity Building Approaches**

1. Training
2. Technical assistance
3. Learning exchanges

**References**

*Ley Especial de las Áreas Protegidas de las Islas de la Bahía*. La Gaceta, Republica de Honduras, 26 de julio 2010. No. 32,273.

Decreto No. 98-2007. *Ley Forestal, Áreas Protegidas y Vida Silvestre*. La Gaceta, Republica de Honduras, 26 de febrero 2008. No. 31,544.

## Zona de Protección Especial Marina Turtle Harbour – Rock Harbour

**Name:** Zona de Protección Especial Marina Turtle Harbour – Rock Harbour (ZPEMTH-RH)

**Country:** Honduras

**Size:** 812 hectares (8.12 km<sup>2</sup>), located in the North Central area of the island of Utila,

**Management Agency:** Honduran Institute for Forest Conservation and Development, Protected Areas and Wildlife (Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre, ICF) in co-management with Bay Island Conservation Association, Utila Chapter (BICA – Utila).

**Site Resources:** coral reefs, mangroves, and seagrasses. The marine section includes the coastal marine area composed of beaches, emerged reefs (iron shore), the Bays of Turtle Harbour and Rock Harbour, of coral reefs ecosystems, seagrass and associated fauna. Site also includes turtle nesting, feeding, and resting areas.

**Site Uses:** Tourism and fishing.

**Threats:** coastal land sale and development, mangrove clearing, fishing.

**Site Contact:** Patricia Steffan, Bay Islands Conservation Association (BICA-Utila), Tel. (504) 2425-3260, email: [patricia.steffan@bicautila.org](mailto:patricia.steffan@bicautila.org)

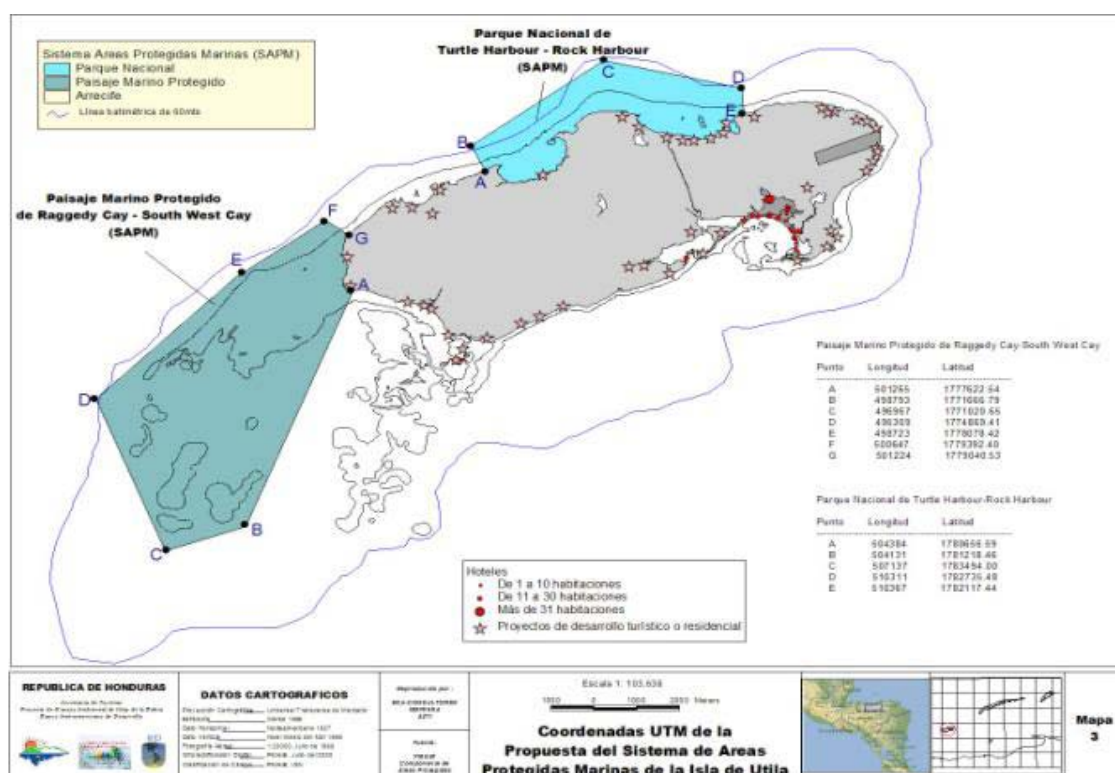


Figure 28 Map of Zona de Protección Especial Marina Turtle Harbour – Rock Harbour



Question	Purpose
	The primary purpose is biodiversity conservation through active participation of central and local governments, private enterprise, ethnic groups and NGOs in management activities.

Question	Purpose	Yes	No
1b	<p>Protect natural and scenic areas of interest and national and international significance for scientific, educational, recreational and tourism purposes.</p> <p>Protect in perpetuity in a natural state as possible, representative examples of physiographic regions, biotic communities, genetic resources and species to provide diversity and ecological stability.</p> <p>Manage the use by visitors to the area for educational, cultural and recreational services to such levels that will keep the area as close to its natural state.</p> <p>Eliminate and prevent future exploitation or occupation that is contrary to management objectives.</p> <p>Maintain respect for the ecological attributes, geomorphologic, aesthetic or sacred that led to the designation as a protected area.</p> <p>Take into account the needs of local / indigenous communities including the use of resources in livelihood activities provided the activities do not affect management objectives.</p>	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning		X	
3	Ecological Network Development	X		
4	Governance	X		
5	On-site management			X
6	Enforcement		X	
7	Boundaries		X	
8	Biophysical Monitoring	X		
9	<b>Socioeconomic Monitoring*</b>	X		
10	MPA Effectiveness Evaluation	X		
11	Stakeholder Engagement	X		
12	<b>Financing*</b>		X	
13	Outreach and Education			X
14	Conflict Resolution Mechanism	X		
15	Resilience to Climate Change		X	
16	Alternative Livelihoods	X		
17	<b>Fisheries Management*</b>	X		
18	Integrated Coastal Management	X		

19	MPA Sustainable tourism	X		
20	Organizational Management		X	
21	Partnerships/Coordination		X	
	<b>Assessment Area</b>	<b>YES</b>	<b>NO</b>	
22	Economic Valuation			X
23	Emergency Response	X		
24	Ecosystem Based Management	X		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		X	
26	Government Support	X		

\*Denotes identified priorities for capacity building.

## 2. Management Planning (Tier 2)

Rationale: a management plan was prepared by PMAIB in 2007 but has not been officially approved. The management plan has not been shared with the communities. The central government agency for protected areas (ICF) has to prepare a management plan for the Bay Islands Marine Park that includes ZPEMTH-RH and all other MPAs in the three island area. Until that management plan is developed, approved, and shared with the stakeholders, management activities are limited. To move to a higher tier it is necessary to consolidate agreements, the implementation of regulations, and increase the sustainability of the organization in order to to engage in protection and management.

## 3. Ecological Networking (Tier 1)

Rationale: site is a member of the Mesoamerican Reef Fund (MAR Fund) but has little communication and interaction with other network members. Management is positively disposed towards the opportunity to be part of a network, but it is nonetheless necessary to recognize the need and benefits that membership would provide. ZPEMTH-RH maintains contacts with organizations operating within the Mesoamerican Reef. The creation of a formal network, established by MAR Fund, could help coordinate efforts.

## 4. Governance (Tier1 )

Rationale: there are few official regulations in place. One specific municipal regulation prohibits all types of fishing in Turtle Harbour. For rules and regulations to be in place, a management plan needs to be developed and approved by the government. The area was initially declared as a Wildlife Refuge and Marine Reserve in 1992 by the municipality. Soon thereafter it was declared Marine National Park by Executive Accord 005-97, which provided zoning for Utila. More recently, the Special Law for Bay Island Protected Areas, Legislative Decree 75-2010 acknowledges the borders of the specially protected areas and of the Turtle Harbour Wildlife Refuge.

## 5. On-Site Management (Tier 3)

Rationale: there is a full-time manager for the MPA and programmatic personnel in the areas of administration, environmental education, technical assistance as well as three park rangers.. A total of seven staff are currently employed. Currently, no community oversight is in place; however, a Community Advisory Council for Protected Areas and Wildlife, COLAP, is developing. More funding is needed to hire full staff.

#### **6. Enforcement (Tier 2)**

Rationale: MPA management enforces the laws and regulations but follow-up is under the jurisdiction of a separate institution. Taking into account the environmental laws, there are regulations that can be applied at the MPA level and within the area of economic development. The application of the law lies with the NGOs and the preventive police when they can accompany the rangers. Funding in order to increase policing is needed. Another option would be to turn rangers into municipal wardens that are able to confiscate contraband and capture violators in case of illegal activities.

#### **7. Boundaries (Tier 2)**

Rationale: even though the decree clearly identifies the boundaries, there are no demarcation buoys in the park. Funding is needed for buoy installation and to communicate boundaries to stakeholders.

#### **8. Bio-physical Monitoring (Tier 1)**

Rationale: a biophysical monitoring plan is being developed and previous assessments have been conducted by Operation Wallacea on mangroves and coral reefs using the Reef Check protocols. A regional team conducted an AGRRA assessment in 2006. At the national level, ICF is developing monitoring protocols for sea turtles. In the case of coral reefs, the AGRRA methodology is being adopted at the national level. In regards to mangroves and seagrasses, the MBRS methodology, outlined in the manual of methods for monitoring program, is used. As for turtle monitoring, a standard protocol for monitoring and collecting data is under development. For fish aggregations, the protocol for monitoring reef fish aggregations by the MBRS project is being implemented.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: A few censuses have been conducted but no monitoring is in place for socioeconomic indicators. Both the municipality and the central government collect data but the data are not available. BICA has conducted fishermen censuses and interviews with divers, but these are isolated efforts.

#### **10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: no assessments of MPA effectiveness have been conducted. A monitoring tool is available which was developed by the MBRS project.

#### **11. Stakeholder Engagement (Tier 1)**

Rationale: no official stakeholder engagement mechanism is in place. There are no fishermen associations and the dive centers association is not operative. The Honduran Law for protected areas creates Advisory Councils (Consejos Consultivos) at the national, state, municipal and community levels. These councils are not yet functional. Another opening for stakeholder engagement is the National System for Environmental Impact Assessment (SENAIA), which can

call for community consultation when a project is proposed that can affect the resources or the population.

#### **12. Financing (Tier 2)**

Rationale: A sustainable finance plan was developed for this MPA. Some financial support is available. User fees are not a good option for this MPA due to the government structure in regards to collection and distribution of funds from protected areas use. The upcoming MAR Fund funding could cover up to 85% of the financial needs of the MPA.

#### **13. Outreach and Education (Tier 3)**

Rationale: Outreach and education focuses on schools, fishermen's children, teachers, and adults. Outreach materials include posters with closed season information, and TV programs.

#### **14. Conflict Resolution Mechanism (Tier 1)**

Rationale: a couple of organizations serve as conflict resolution mechanisms, such as the tourism chamber and the dive shops association, but the frequency of their meetings is limited. Not many conflicts occur in the area. The municipal environmental management unit (UMA) is sought out more than BICA for conflict resolution. There are no set conflict resolution mechanisms but conflicts are resolved, as in the case of the Whale Shark tourism.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: MPA management is aware of the reef resilience concept through readings and lectures, as well as through documentaries. A nearby site, Raggedy Caye, was selected for protection due to its resilience to coral bleaching. Also, at Blackish Point, a grouper spawning aggregation was found.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: only a preliminary assessment has been conducted and it did not evaluated the impact of MPA rules on livelihoods .

#### **17. Fisheries Management (Tier1 )**

Rationale: a fishermen census was conducted by the PMAIB project but no complete assessment of the status of the fisheries has been completed. No fisheries management plan is in place. Fishing is forbidden at Turtle Harbour but is allowed in Rock Harbour.

#### **18. Integrated Coastal Management (Tier 1)**

Rationale: Coastal threats have not been assessed. The only efforts in this regard were conducted by PMAIB, when maps of pollution sources were prepared.

#### **19. Sustainable Tourism (Tier 1)**

Rationale: few tourism assessments have been conducted. A record of boats arriving in Turtle Harbour is maintained, but no data is collected for Rock Harbour. Some sustainable tourism activities will be implemented this year, but there is no sustainable tourism plan.

#### **20. Organizational Management (Tier 2)**

Rationale: MPA personnel are limited. Identified personnel needs include a social / community facilitator, a boat captain, and two park rangers.

**21. Partnerships/Coordination (Tier 2)**

Rationale: Formal partnerships exist with the other organizations that support MPA management activities, including the Iguana Station (Fundacion Islas de la Bahia, FIB), the Municipality of Utila and ICF. There is Informal coordination with the Utila Center for Marine Ecology (UCME), the Whale Shark Research Center, the Preventive Police, the Roatan Marine Park, BICA Roatan and the Honduran Fisheries Directorate (DIGEPESCA).

**22. Economic Valuation (No)**

Rationale: an economic valuation of resources has not been conducted but is considered useful. Benefits from conducting an economic valuation include the promotion of the protection of the area and participation of volunteers. It could also increase visitors' willingness to pay and can be use in promoting conservation of the area as well as BICA.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: response to invasive species has concentrated on lionfish. These efforts are coordinated by UCME and the Roatan Marine Park. A crime scene investigation (CSI) training course for ship groundings was conducted.

**24. Ecosystem Based Management (Yes)**

Rationale: efforts related to ecosystem-based management have concentrated on the identification and protection of resilient sites and spawning aggregation sites.

**25. Community Support (Medium)**

Rationale: when asked to participate, community members show a low to medium response level. There is low interest in participation. The people attending meetings are pretty much always the same, and are already convinced of the importance of the area. After a short hiatus, BICA Utila reopened in mid 2009 and has since managed to increase community support.

**26. Government Support (Medium)**

Rationale: support from government agencies is medium to high. The central government and the municipal agency for environmental management provide high levels of support.

**Management Capacity Priority Needs**

1. Financing
2. Fisheries management
3. Socioeconomic monitoring

**Priority Capacity Building Approaches**

1. Technical support
2. Learning exchanges
3. More staff

**References**

Programa de Manejo Ambiental de las Islas de la Bahía, Honduras, PMAIB (2009) *Propuesta de Plan de Manejo: Zona de Protección Especial de Turtle Harbour – Rock Harbour 3/7 (A ser manejada bajo los criterios de un Parque Nacional). Período 2008 – 2012*. Programa de Manejo Ambiental de las Islas de la Bahía, Honduras. Presentado al: Departamento de Áreas Protegidas, DAP, Instituto Nacional de Conservación Áreas protegidas y Vida Silvestre, ICF. Tegucigalpa, M.D.C. Enero 2009

Decreto No. 98-2007. *Ley Forestal, Áreas Protegidas y Vida Silvestre*. La Gaceta, Republica de Honduras, 26 de febrero 2008. No. 31,544.

*Ley Especial de las Áreas Protegidas de las Islas de la Bahía*. La Gaceta, Republica de Honduras, 26 de julio 2010. No. 32,273.

## Mexico

**Dates of Interviews:** March 14 to 18, 2011. May 25, 2011 (Yum Balam)

**Interviewer:** Alex Arrivillaga

**Agencies/Organizations Interviewed:** Comisión Nacional de Áreas Naturales Protegidas, CONAP.



## Parque Nacional Arrecife Alacranes

**Name:** Parque Nacional Arrecife Alacranes (PNAA)

**Country:** México

**Size:** 333,768 hectares (3337.68 km<sup>2</sup>)

**Management Agency:** Comisión Nacional de Áreas Naturales Protegidas, CONANP.

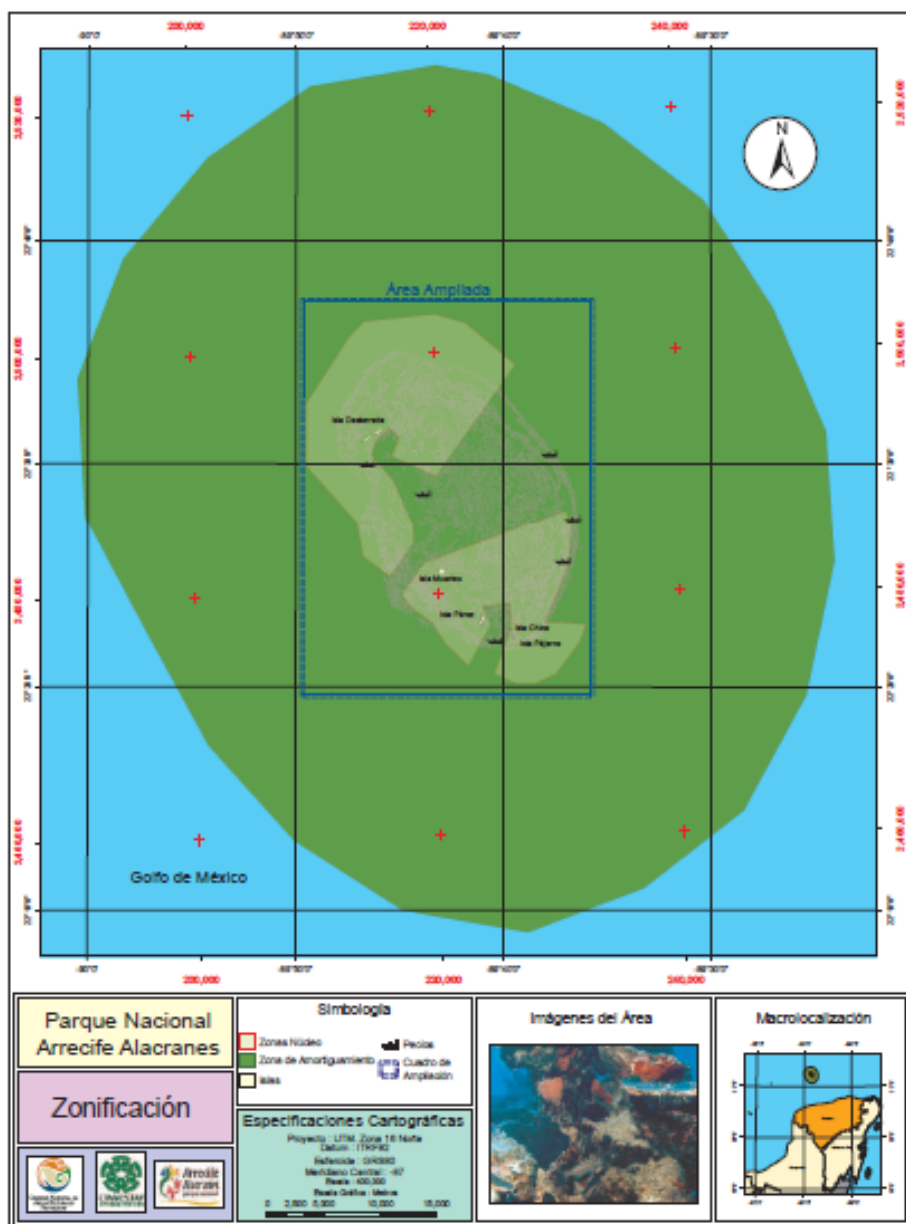
**Site Resources:** Arrecife Alacranes is the largest reef in the Mexican Gulf of Mexico. The site has sandy beaches that harbor 116 species of resident and migratory birds, including some endangered species. Vegetation includes dune plants and mangroves. Coral reefs support 34 species of corals, 136 fish species, 24 shark species, sea turtles and mollusks.

**Site Uses:** lobster and finfish fisheries, tourism, lighthouse.

**Threats:** invasive exotic species including casuarinas, cats, rats and cactuses. Overfishing, illegal fishing, and aquatic tourism practices.

**Site contact:** Rene Humberto Kantun Palma (Director), CONANP, Tel. 999 926 00 77, email: [rkantun@conanp.gob.mx](mailto:rkantun@conanp.gob.mx)





**Figure 29. Map of Parque Nacional Arrecife Alacranes**

Question	Purpose		
	Ecosystem conservation, restoration and protection through sustainable management and the participation of government and stakeholders.		
Question	Purpose	Yes	No
1b	<ul style="list-style-type: none"> <li>• Allow continuity of biological and evolutionary processes within island and marine ecosystems of the National Park.</li> <li>• Conserve natural resources of the national park, with emphasis on endemic, threatened, endangered, and special protection species, and those of current and potential economic importance,</li> </ul>	X	

	<p>as well as protect communities and ecosystems.</p> <ul style="list-style-type: none"> <li>• Keep the island and ocean land and seascape and its natural elements for enjoyment, recreation, development and raising the quality of life social groups and visitors and for future generations.</li> <li>• Promote the conservation of marine biodiversity and biological productivity inside the park, allowing continuity of species interactions.</li> <li>• Promote the advancement of research to broaden and deepen park knowledge and help management methods and alternative sustainable use of resources.</li> <li>• Create, save and disseminate knowledge, practices and technologies or new methods to allow the preservation and sustainable use of the area.</li> <li>• Protection of historical monuments are in the area (buildings and ship wrecks) as important national and local culture.</li> </ul>		
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CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development		X	
4	Governance			X
5	On-site management		X	
6	<b>Enforcement*</b>		X	
7	Boundaries			X
8	<b>Biophysical Monitoring*</b>		X	
9	Socioeconomic Monitoring	X		
10	MPA Effectiveness Evaluation		X	
11	Stakeholder Engagement		X	
12	Financing	X		
13	Outreach and Education	X		
14	Conflict Resolution Mechanism			X
15	Resilience to Climate Change	X		
16	Alternative Livelihoods	X		
17	<b>Fisheries Management*</b>	X		
18	Integrated Coastal Management		N/A	
19	MPA Sustainable tourism		X	
20	Organizational Management		X	
21	Partnerships/Coordination			X
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation	X		
23	Emergency Response	X		

24	Ecosystem Based Management	X		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		X	
26	Government Support		X	

\*Denotes identified priorities for capacity building.

## **2. Management Planning (Tier 3)**

Rationale: A management Program is in place and activities are being implemented. The current management program needs updating. The site also needs more personnel and infrastructure.

## **3. Ecological Networking (Tier 2)**

Rationale: The site is part of Man and Biosphere (MAB – UNESCO) network. Site is also a Ramsar Site and is also recognized as an Important Bird Area (IBA) (AICAS Area de Importancia para la Conservacion de las Aves). Human and financial resources are needed to move to tier 3.

## **4. Governance (Tier 3)**

Rationale: The Management Program regulates all of the most important activities in the park. Other than the rules and regulations contained in Management Program, there are lobster fisheries concessions to cooperatives, and special permits for tour guides and for site visitation.

## **5. On-Site Management (Tier 2)**

Rationale: The site is located 140 km (70 NM) from mainland and takes 3 hours to reach by boat. The park personnel are only present onsite seasonally, from April to September due to weather conditions. Currently there are 5 people working in PNAA, but they also manage another MPA, Ria Celestun Biosphere Reserve. There is also a permanent naval detachment onsite, and a lighthouse keeper. At least five more personnel are needed.

## **6. Enforcement (Tier 2)**

Rationale: The enforcement of rules and regulations in Mexico is the responsibility of PROFEPA (Procuraduria Federal de Proteccion al Ambiente). PROFEPA is in charge of both green (conservation) and grey (pollution) issues, and they are limited in their ability to effectively enforce both issues. Law enforcement was identified in this assessment as the most important capacity need for Arrecife Alacranes. This capacity should be focused towards PROFEPA's personnel.

## **7. Boundaries (Tier 3)**

Rationale: Both digital and printed maps of the site are available. A nautical chart, with the location of the MPA and its zoning scheme, is available for mariners. At the site, there are signs and demarcation buoys, as well as mooring buoys.

## **8. Bio-physical Monitoring (Tier 2)**

Rationale: Current bio-physical monitoring includes sea turtles, birds, benthos, and physical and chemical water parameters. Other monitoring includes lionfish and the presence of rats on the islands. For biological monitoring, the MBRS Synoptic Monitoring protocols are used. Sea turtles are monitored using CONANP methods. Biophysical monitoring was identified in this assessment

as the second most important capacity building need for this site. This capacity could be built through hiring personnel with that capacity.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: Only one socioeconomic assessment has been conducted in the area.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: The CONANP main office has an office in charge of evaluation and follow up (Dirección de Evaluación y Monitoreo) that monitors implementation of the Annual Work Plan.

#### **11. Stakeholder Engagement (Tier 2)**

Rationale: Stakeholder involvement is mostly through the Advisory Committee. The committee has participation from academia, the federal government, local NGOs, divers associations, and fishing cooperatives.

#### **12. Financing (Tier 1)**

Rationale: Financing comes exclusively from the federal government. The current budget covers 15 to 20% of the park's financial needs, which is supplemented with the support from NGOs. There is also a program that provides temporary employment for fishermen. Park entrance fees are collected, as in most of Mexico's MPAs, and the funds are administered by CONANP.

#### **13. Outreach and Education (Tier 1)**

Rationale: There are no personnel to implement outreach and education activities. One of the few activities implemented is the National Conservation Week. Target audiences include the general public, tourists, fishermen, and tour guides.

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Mechanism for conflict resolution in a case involving oil exploration was a public consultation. Nevertheless, capacity building in conflict resolution is identified as desirable for Alacranes in this assessment.

#### **15. Climate Change Resilience (Tier 1)**

Rationale: CONANP has a strategy for climate change in protected areas that has not been implemented yet. There is potential for capacity building related to this subject.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: There was a socioeconomic study that was conducted of Arrecife Alacranes stakeholders but no economic valuation of park on people's income has been conducted. One of the most important impacts of park rules was on conch fishing. A training on recreational diving will be implemented in the near future.

#### **17. Fisheries Management (Tier 1)**

Rationale: Information on Arrecife Alacranes fisheries is limited to academic papers. Most of the research is not useful for management. Of particular importance would be an assessment of the conch population to support either the continuation of the closed fishery or its reopening. Fisheries management was identified as the third most important capacity need for Arrecife Alacranes. This capacity could be built through technical support.

**18. Integrated Coastal Management (N/A)**

Rationale: Site is located 140 km (70 NM) from nearest mainland.

**19. Sustainable Tourism (Tier 2)**

Rationale: The tourism plan is incomplete. Tourism is only starting now with the use of speed boats that can visit the site; their clients camp out on Isla Perez. There is a park entrance fee .

**20. Organizational Management (Tier 2)**

Rationale: Current level of personnel available is lower than needed. There is a Park Director, a Sub Director, one technician, and two park rangers.

**21. Partnerships/Coordination (Tier 3)**

Rationale: All partnerships are coordinated through the Advisory Committee.

**22. Economic Valuation (Yes)**

Rationale: Information on the economic value of park resources would be useful to increase support for the conservation of the site. It would also put in perspective the feasibility and convenience of certain activities and infrastructure, like oil exploration and production.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: Some emergency and invasive protocols are in place (e.g., control of lionfish). Most of the activities are just a reaction to the presence and/or an emergency.

**24. Ecosystem Based Management (No)****25. Community Support (Medium)**

Rationale: Even though many stakeholders support the management of the area, the support is not unanimous.

**26. Government Support (Medium)**

Rationale: Political will is necessary to increase this indicator. Human and financial resources also need to improve.

**Management Capacity Priority Needs**

1. Enforcement
2. Bio-physical monitoring
3. Fisheries management

**Priority Capacity Building Approaches**

1. More staff
2. Training
3. Technical support

### References

Dirección General de Manejo para la Conservación, Comisión Nacional de Áreas Naturales Protegidas CONANP(2006). *Programa de Conservación y Manejo Parque Nacional Arrecife Alacranes, Mexico*.

[http://www.conanp.gob.mx/que\\_hacemos/programa\\_manejo.php](http://www.conanp.gob.mx/que_hacemos/programa_manejo.php)

175

	national park.
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Question	Purpose	Yes	No
1b	<p>Harmonize sustainable use and harvest of the national park natural resources and its protection for the benefit of the community.</p> <p>Facilitate dialog among community stakeholders to achieve participation in management actions through the Advisory Committee.</p> <p>Establish the necessary basis for inter-institutional coordination to reinforce management, sustainable use, and enforcement of the park's coastal resources.</p> <p>Protect coral reefs in the southern Quintana Roo state, in particular the unique reef structure 'La Poza' and the 'Rio Huach' lagoon system, under a integrated coastal management principle.</p>	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development	X		
4	Governance			X
5	On-site management			X
6	Enforcement		X	
7	Boundaries			X
8	Biophysical Monitoring			X
9	Socioeconomic Monitoring	X		
10	<b>MPA Effectiveness Evaluation*</b>	X		
11	Stakeholder Engagement			X
12	Financing		X	
13	Outreach and Education			X
14	Conflict Resolution Mechanism			X
15	Resilience to Climate Change		X	
16	Alternative Livelihoods			X
17	<b>Fisheries Management*</b>	X		
18	Integrated Coastal Management			X
19	MPA Sustainable tourism			X
20	Organizational Management		X	
21	Partnerships/Coordination			X
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	<b>Economic Valuation*</b>	X		
23	Emergency Response	X		



24	Ecosystem Based Management	X		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support	X		
26	Government Support		X	

\*Denotes identified priorities for capacity building.

## **2. Management Planning (Tier 3)**

Rationale: An approved management plan is currently being implemented. In Mexico management plans are called Management Programs.

## **3. Ecological Networking (Tier 1)**

Rationale: Some coordination has taken place with neighbor MPA Bacalar Chico in Belize. During the design phase, coordination with Bacalar Chico allowed for no-take areas to link between both MPAs.

## **4. Governance (Tier 3)**

Rationale: All specific activities in the park have rules and regulations. The creation of the park was the result of direct community participation.

## **5. On-Site Management (Tier 3)**

Rationale: A full-time manager is responsible for the PNAX. This person is also responsible for the management of Banco Chinchorro Biosphere Reserve. The local community is also involved in management.

## **6. Enforcement (Tier 2)**

Rationale: There are some unauthorized fishermen that have operated in the park for many years. There is currently no room for more fishermen to join the fishery in the park. Enforcement of environmental regulations in Mexico requires the participation of more than one government agency. Both FAO Programa de Seguridad Alimentaria en México (SAGARPA) and Comisión Nacional de Acuacultura y Pesca (CONAPESCA) have to participate for fisheries regulations enforcement. The park manager can stop illegal or unauthorized activities but cannot set fines for violations.

## **7. Boundaries (Tier 3)**

Rationale: Demarcation buoys are in place, but some confusion exists due to the political boundaries between Mexico and Belize.

## **8. Bio-physical Monitoring (Tier 3)**

Rationale: Several biophysical monitoring efforts are ongoing in the park. The MBRS Synoptic Monitoring protocol is used. The AGRRA and fisheries monitoring are also in place.

## **9. Socio-economic Monitoring (Tier 1)**

Rationale: Independent assessments including SocMon have been conducted by university researchers. Several historical studies have been conducted and are included in the management program document.

**10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: Even though some management effectiveness assessments have been conducted, no permanent monitoring is in place. Effectiveness evaluation is the third most important capacity need for Xcalak. The preferred method for capacity building is through training in effectiveness evaluation.

**11. Stakeholder Engagement (Tier 3)**

Rationale: Both the tourism and fishery sector stakeholders participated actively in the preparation of the management program. Stakeholders have participated in some activities including beach clean-ups, ecosystem restoration activities, and monitoring. Tourism stakeholders are more active in the implementation of management actions than the fishery sector.

**12. Financing (Tier 2)**

Rationale: Financial resources are limited.

**13. Outreach and Education (Tier 3)**

Rationale: There is one person in charge of outreach and education, to cover both Xcalak and Banco Chinchorro. The target audience includes communities, schools from elementary to university, and the general public both in Xcalak and nearby. There is an educational tourism program bringing students from Chetumal to visit the park and learn about conservation. Also an exchange program is in place with Bacalar Chico Marine Reserve in neighboring Belize.

**14. Conflict Resolution Mechanism (Tier 3)**

Rationale: The Advisory Committee acts as a conflict resolution mechanism. Participatory meetings are used to resolve conflicts. The park will benefit if a professional conflict-resolution methodology is developed.

**15. Climate Change Resilience (Tier 2)**

Rationale: A national CONANP program is in place, focusing mostly on preventing impacts.

**16. Alternative Livelihoods (Tier 3)**

Rationale: The park declaration was initiated originally by the Andres Quintana Roo Fishing Cooperative and the Xcalak community. A livelihood study was conducted initially with the official declaration of the park. The study found park regulations will have no impact on community livelihoods and therefore the need for alternatives did not exist.

**17. Fisheries Management (Tier 1)**

Rationale: A fisheries assessment is just beginning in Xcalak. A fisheries management plan is not developed yet. This is the second most important capacity need identified for Xcalak. The preferred capacity building method to cover this need is through more personnel.

**18. Integrated Coastal Management (Tier 3)**

Rationale: A threats analysis for upland sources has been conducted. Main sources of pollution come from Rio Hondo and the border. There is a watershed management plan in place and coordination exists between responsible agencies and the park management. There are beach cleanup efforts.

**19. Sustainable Tourism (Tier 3)**

Rationale: Tourism activities are conducted according to the tourism development plan. The local tourism cooperative is certified and has set standards.

**20. Organizational Management (Tier 2)**

Rationale: The number of personnel currently working in the park is insufficient. Even though there are people with the necessary capacity available, funding prevents hiring more personnel.

**21. Partnerships/Coordination (Tier 3)**

Rationale: The Advisory Committee is a formally coordinated group of the most important agencies. The committee participates in management and coordination.

**22. Economic Valuation (Yes)**

Rationale: An economic valuation of the resources has not been conducted in Xcalak National Park. This valuation is seen as something desirable to help with fundraising, to gain state and municipal support, and to control marinas and cruise ships. Economic valuation of the resources is the most important capacity need identified in this assessment of Xcalak. The preferred method to build this capacity is through technical support.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: There are rapid response plans for hurricanes, ship groundings, and oil and chemical spills.

**24. Ecosystem Based Management (Yes)**

Rationale: Ecosystem-based management principles were used in preparation of the program and in management. For example, in 'La Poza', the fisheries resource is monitored and the information is used to define management actions such as zoning plans. Also, the condition of the reef is assessed for management planning. Tourism cooperative members participated in ecosystem based monitoring training.

**25. Community Support (High)**

Rationale: From the beginning of the MPA creation the community has provided full support. Even though the participation has had its ups and downs, the community commitment is with the reef and not with the manager.

**26. Government Support (Medium)**

Rationale: Municipal support for the management is low. Some projects have better support but there is very little continuity. Central government support is higher.

### **Management Capacity Priorities**

1. Economic valuation and monitoring
2. Fisheries management
3. MPA effectiveness evaluation

### Priority Capacity Building Approaches

1. Technical support
2. More staff
3. Training

### References

Dirección General de Manejo para la Conservación, Comisión Nacional de Áreas Naturales Protegidas CONANP (2004) *Programa de Manejo Parque Nacional Arrecifes de Xcalak*, México.  
[http://www.conanp.gob.mx/que\\_hacemos/programa\\_manejo.php](http://www.conanp.gob.mx/que_hacemos/programa_manejo.php)

## Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc

**Name:** Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc (PNCOIMPCPN).

**Country:** Mexico

**Size:** 8,673 hectares (86.73 km<sup>2</sup>), in three polygons Costa Occidental de Isla Mujeres with 2,795 ha, Punta Cancún with 3,301 ha, and Punta Nizuc with 2,576 ha. The site is located in the Yucatan Peninsula, on the NE corner of the Quintana Roo state. Site does not include any land portions, only marine areas.

**Management Agency:** Comision Nacional de Areas Naturales Protegidas, CONANP.

**Site Resources:** coral reefs (patch and fringing reefs), mangroves, seagrasses, aquatic birds.

**Site Uses:** tourism is the most important use of the area. Other activities include fisheries, and commercial shipping.

**Threats:** hurricanes, boat groundings, water pollution and sewage, unsustainable tourism practices, illegal fishing.

**Site contact:** Jaime Gonzalez Cano (Director), CONANP, Tel. 52-998-887-22-84; email:

[jgonzalez@conanp.gob.mx](mailto:jgonzalez@conanp.gob.mx)



Figure 31 Map of Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc

Question	Purpose
	Safeguard the natural environment, its biodiversity and cultural heritage, in line with the sustainable use of natural resources and the social development of the local residents.

Question	Purpose	Yes	No
1b	Develop strategies and propose actions to promote the protection and conservation of natural resources and the restoration of areas that require it. Propose and establish the basis for inter-agency coordination to strengthen the actions of operation, protection, monitoring, and resource management. Propose and establish the basis of consultation with various stakeholders. Achieve compatibility between the sustainable use of the park natural resources and their protection.	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			X
3	Ecological Network Development			X
4	Governance			X
5	On-site management			X
6	<b>Enforcement*</b>		X	
7	Boundaries			X
8	Biophysical Monitoring			X
9	<b>Socioeconomic Monitoring*</b>	X		
10	<b>MPA Effectiveness Evaluation*</b>		X	
11	Stakeholder Engagement			X
12	Financing		X	
13	Outreach and Education			X
14	Conflict Resolution Mechanism			X
15	Resilience to Climate Change		X	
16	Alternative Livelihoods			X
17	Fisheries Management	X		
18	Integrated Coastal Management			X
19	MPA Sustainable tourism			X
20	Organizational Management			X
21	Partnerships/Coordination			X
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>

22	Economic Valuation	X		
23	Emergency Response	X		
24	Ecosystem Based Management	X		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		X	
26	Government Support	X		

\*Denotes identified priorities for capacity building.

## **2. Management Planning (Tier 3)**

Rationale: The Park has a management program that is being implemented. Moreover, the park has served as an implementation testing site for new plans and mechanisms that are applied in other MPAs. The park was established 15 years ago, and the management program was developed three years later.

## **3. Ecological Networking (Tier 3)**

Rationale: The site is part of the Yucatan Peninsula Region of the CONANP network and site management is coordinated with the other MPAs in the region. The site is also part of the Mesoamerican Barrier Reef System. Closest coordination is with neighboring Isla Contoy and Puerto Morelos MPAs.

## **4. Governance (Tier 3)**

Rationale: All activities in the park are regulated by the management program. The program includes a table for sanctions and fines for violations of park rules and regulations.

## **5. On-Site Management (Tier 3)**

Rationale: Park staff includes the Director and sub Director, Programs Coordinator, park rangers and boat captains.

## **6. Enforcement (Tier 2)**

Rationale: Enforcement of rules and regulations is inconsistent. Park management has no power to enforce the law alone but through PROFEPA. Enforcement is the top priority capacity need for this MPA. To improve enforcement, coordination with CONAPESCA and PROFEPA should be closer.

## **7. Boundaries (Tier 3)**

Rationale: All park boundaries are clearly marked and tour guides are aware of the rules and regulations of the different zones.

## **8. Bio-physical Monitoring (Tier 3)**

Rationale: Monitoring approaches use the line intercept method (Loya 1972) for benthic organisms. Fish monitoring is through a site modified AGRRA method.

## **9. Socio-economic Monitoring (Tier 1)**

Rationale: No socioeconomic monitoring in place. This topic was identified as the third most important capacity need for this MPA. Periodic socioeconomic assessments are conducted but no monitoring is in place.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: Effectiveness is evaluated by a central office. Evaluation is not consistent and is centered on the annual work plan implementation. MPA effectiveness evaluation is the second most important capacity need in this MPA.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: stakeholders include recreational activities guides, hotels, fishing cooperatives, academia, and government authorities. Local communities participate actively in park activities, primarily as tour guides.

#### **12. Financing (Tier 2)**

Rationale: the sustainable finance mechanism currently in place is a park entrance fee. The financial support comes from the government, but funding sometimes is assigned late in the year.

#### **13. Outreach and Education (Tier 3)**

Rationale: An outreach and education program is in place. A temporary employment program that involves community members serves as supplementary income and also as an outreach activity.

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: conflict resolution mechanisms are in place and are being used by stakeholders. The park Advisory Committee serves this function.

#### **15. Climate Change Resilience (Tier 2)**

Rationale: there is a national climate change strategy for protected areas that guides these efforts. The underwater sculpture project also help build reef resilience by distracting visitor pressure from other reef sites. Coral nurseries are also developed in the park.

#### **16. Alternative Livelihoods (Tier 2)**

Rationale: a preliminary socioeconomic assessment of livelihood revealed high potential for tourism. The principal alternative livelihood opportunity is within the sustainable tourism sector.

#### **17. Fisheries Management (Tier 1)**

Rationale: commercial fisheries in the park are minimal. No fisheries assessments have been conducted to date and no fisheries management plan is in place. Fishing permits are issued by CONAPESCA, and fishing is authorized in Punta Cancun and Punta Nizuc only and exclusively by members of the Puerto Morelos community.

#### **18. Integrated Coastal Management (Tier 3)**

Rationale: the coastal area surrounding the park is heavily impacted by mass tourism development. The site closely coordinates with municipal authorities in regards to pollution from upland sources. There are reports from Isla Mujeres and Cancun of houses and hotels not connected to the sewage network system. There is a 10 year long study looking at water



pollution that identifies red spots. These findings are forwarded to PROFEPA and the National Water Commission (CAN, Comision Nacional del Agua).

#### **19. Sustainable Tourism (Tier 3)**

Rationale: all tourism activities are conducted according to the tourism management plan contained in the park's Management Program. The park receives close to one million visitors per year.

#### **20. Organizational Management (Tier 3)**

Rationale: Capacity has been assessed and the staff is adequate. PMA needs two additional rangers.

#### **21. Partnerships/Coordination (Tier 3)**

Rationale: The Advisory Committee coordinates the agencies involved in the park's conservation efforts. The Committee meets three times a year.

#### **22. Economic Valuation (Yes)**

Rationale: Economic valuations have been conducted and used to assess payment for damages from ship groundings. The information from economic valuation is useful to assess fines from human impact to the park's resources.

#### **23. Rapid Response Protocol/Team (Yes)**

Rationale: Invasion of lionfish is being assessed. Oil and chemical spill control is coordinated with the Mexican Navy. Hurricane response protocols are also in place.

#### **24. Ecosystem-Based Management (Yes)**

Rationale: Ecosystem-based management has involved the identification and protection of reef fish spawning aggregation sites. A grouper aggregation site was discovered in Punta Nizuc.

#### **25. Community Support (Medium)**

Rationale: community support could improve. A recent project for an underwater sculpture park (MUSA, Museo Subacuatico de Arte) is a good example of collaboration between community and park management.

#### **26. Government Support (High)**

Rationale: Political support for the park has always been high. Human and financial resources need to improve.

### **Management Capacity Priority Needs**

1. Enforcement
2. MPA effectiveness evaluation
3. Socio-economic monitoring

### **Priority Capacity Building Approaches**

1. Technical support

2. Training
3. More staff

### References

Instituto Nacional de Ecología, INE (1998) *Programa de Manejo Parque Marino Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc, México*. Coordinación de Publicaciones y Participación Social del INE, Instituto Nacional de Ecología.

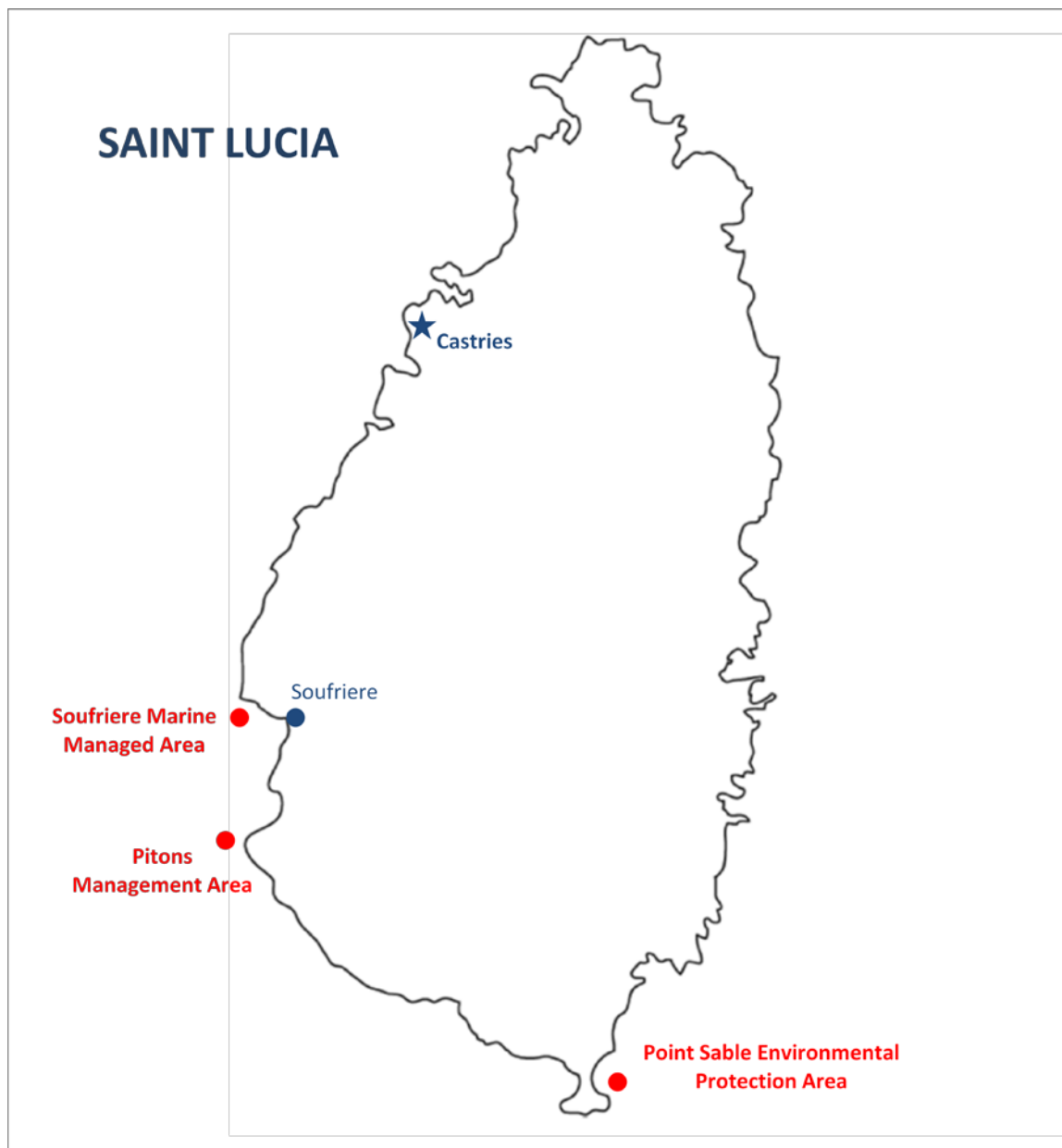
[http://www.conanp.gob.mx/que\\_hacemos/programa\\_manejo.php](http://www.conanp.gob.mx/que_hacemos/programa_manejo.php)

## St. Lucia

**Dates of Interviews:** January 31 – February 4, 2011

**Interviewer:** Alex Arrivillaga and Meghan Gombos

**Agencies/Organizations Interviewed:** St. Lucia National Trust, Soufriere Marine Management Association; the St. Lucia Ministry of Physical Development, Environment, and Housing; and the St. Lucia Forestry Department.



## Pitons Management Area

**Name:** Pitons Management Area (PMA)

**Country:** Saint Lucia

**Size:** 29.09 km<sup>2</sup>, located on the southwest coast of Saint Lucia, near the coastal town of Soufriere.

**Management Agency:** Forestry Department, Ministry of Agriculture, Forestry and Fisheries.

**Site Resources:** outstanding natural beauty, spectacular geological features and highly productive biological ecosystems. The land component represents generally mountainous topography with lushly forested terrain (sub-tropical wet and tropical moist forest, with areas of tropical dry forest near the coast), while the marine coastal belt is one of steep submarine shelf, supporting areas of well-developed fringing reef. Marine reserve zone (part of SMMA) comprises reefs at Petit Piton and Gros Piton. PMA is an Environmental Protection Area and a World Heritage Site.

**Site Uses:** The area in and around the Pitons, including the Sulphur Springs, continues to be of significant cultural and symbolic value to Saint Lucia, featuring most prominently as a national symbol on advertising and promotional materials.

**Threats:** The impacts of hurricanes and other severe weather events can include large scale and focused disturbance to critical habitats and ecosystems and may affect succession dynamics within plant and animal communities. The main man-induced threats to biodiversity comprise deforestation for fuel wood and timber, and a growing presence of small-scale agriculture, including the rearing of goats, cows and pigs, in various locations. Impacts on the marine component of the area include biological and physical impacts from inappropriate fishing practices, as well as unauthorized sand mining, hard stabilization of the shoreline, beach nourishment, and construction of tourism-related infrastructure within the coastal zone.

Site Contact: Henix Joseph (Manager), Pitons Management Area, phone: (758) 457-1636, email:

[henixj@gmail.com](mailto:henixj@gmail.com)

### No Map Available

Question	Purpose
	<p>The goal of the PMA is to facilitate an appropriate and coordinated approach to management of the site, by creating formal linkages among management and planning agencies and other interest groups, so as to ensure that the integrity of the site in terms of its natural, historical and cultural significance is not compromised.</p> <p>To afford special protection to the flora and fauna of such areas and to protect and preserve the natural breeding grounds and habitats of aquatic life, with particular regard to flora and fauna; To allow for the natural regeneration of aquatic life in areas where such life has been depleted; To promote scientific study and research in respect of such areas.</p>

Question	Purpose	Yes	No
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1b	Are the MPA management plan objectives in line with the site designation purpose?	x	
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CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	<b>Ecological Network Development*</b>		x	
4	Governance			x
5	<b>On-site management*</b>			x
6	Enforcement		x	
7	Boundaries	x land		x marine
8	Biophysical Monitoring		x	
9	Socioeconomic Monitoring			x
10	MPA Effectiveness Evaluation			x
11	Stakeholder Engagement			x
12	<b>Financing*</b>	x		
13	Outreach and Education		x	
14	Conflict Resolution Mechanism		x	
15	Resilience to Climate Change			x
16	Alternative Livelihoods	x		
17	Fisheries Management	n/a		
18	Integrated Coastal Management			x
19	MPA Sustainable tourism			x
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	<b>Assessment Area</b>	<b>YES</b>	<b>NO</b>	
22	Economic Valuation			x
23	Emergency Response	x		
24	Ecosystem Based Management			x
ENABLING ENVIRONMENT				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support	x		
26	Government Support	x		

\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 3)

Rationale: Management plan has been approved by the Cabinet of Ministers; therefore it is a legal document. The management plan was done by a marine biologist prior to achieving World

Heritage status. After 5 years or so, some things have changed so some focus has changed, so the plan still has to be reviewed to see if it still meets the objectives of the PMA. We have revised management of the site based on changes at the site level and also government changes. Development regulations can change but principal guidelines (outreach, stakeholder engagement) remain the same in the plan. PMA is going through an interim period. A statutory agency is planned.

### **3. Ecological Networking (Tier 2)**

Rationale: We work very closely with SMMA and National Trust. A lot of our activities are coordinated with SMMA and SNT. Because of international designation, SMMA is able to get funding for activities that PMA cannot since it is a governmental agency. PMA and SMMA coordinate regularly.

### **4. Governance (Tier 3)**

Rationale: The site is legally established and there are clearly defined laws of what you can and cannot do in the various zones. These are similar to the SMMA. Clear laws are mostly based on the Fisheries Act. Marine Rangers have powers of arrest but also liaise with marine unit. Land uses are regulated. You must get permission to develop in certain areas. Special areas are zoned for different activities on land too. There are cocoa plantations in the PMA, as well as some subsistence farming. Farmers must get permission about the type of pesticides, or fertilizers they use. Also, they must get permission about bringing in foreign species. These are national level regulations.

### **5. On-Site Management (Tier 3)**

Rationale: PMA has a full-time site manager who periodically goes on site to see what is happening. Marine component oversight is done primarily by SMMA as they have the capacity, but PMA communicates with SMMA when concerns arise. There is also an office assistant and a secretary, but no wardens. According to the management plan, PMA needs to have rangers on the ground on a regular basis.

### **6. Enforcement (Tier 2)**

Rationale: Rules and regulations are in place but there is no capacity to have consistent enforcement on the ground. Political interference is often a nuisance. PMA has a lot of concerned citizens that act as eyes and ears on the ground. Persons are very passionate about the World Heritage Site status, even if PMA does not have a physical presence. Physical development of enforcement and oversight is done through the Ministry's planning and building officers. They are in charge when illegal development happens, which occurs on rare occasions. The biggest problems are large developers, but PMA has a legal unit in the ministry that can issue a stop notice.

### **7. Boundaries (Tier 1 for land; Tier 3 for marine)**

Rationale: Tier 3 for marine component because SMMA has clear boundaries, but Tier 1 for land component because PMA has no clear boundaries on land. Boundaries should pass along personal property boundaries, not across.

### **8. Bio-physical Monitoring (Tier 2)**

Rationale: Monitoring is done by SMMA. There are existing data and those data were analyzed in a recent workshop took. Results have raised many concerns, as the passage of hurricanes

complicated things enormously. Water quality monitoring has raised concerns for E.coli and Streptococcus. In some areas the levels were above those recommended for swimming.

#### **9. Socio-economic Monitoring (Tier 3)**

Rationale: Periodically there are national censuses looking at certain socioeconomic aspects. According to the census, Soufriere is the third poorest town in the country. There is need for more economic activities to alleviate poverty. Soufriere is interesting and unique, but visitors pass through without benefitting the town. One plan is to develop the waterfront with bars, restaurants, etc., to provide an opportunity for tourists to go, and also develop architecture appreciation tours. There is a little visitor harassment, mostly people with mental problems that need to get treatment. World Heritage Site (WHS) designation has placed emphasis on looking at things like this at the national level. Soufriere is a gateway community to the WHS.

#### **10. MPA Effectiveness Evaluation (Tier3 )**

Rationale: SMMA does constant monitoring and evaluation of what is happening. Whenever there is a shortfall, things are revised. It is an on-going process. Effectiveness looks mostly at user conflicts.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: There is a lot of consultation taking place with stakeholders. PMA looks for better ways to work together with stakeholders, finding the best way forward. From the land perspective, a large percentage of the land is privately owned. PMA invites landowners, developers, hoteliers, and the general public to participate in the meetings and to be represented.

#### **12. Financing (Tier 1)**

Rationale: User fees are the only financing mechanism in place. All other funding comes from the government.

#### **13. Outreach and Education (Tier 2)**

Rationale: PMA does not have a specific outreach and education person. Outreach and education activities are conducted according to the management plan, and include visits to schools to talk about what PMA does, using materials to engage students. A lot of materials such as brochures, exercise books, pens, pencils, etc., were destroyed during the recent hurricane.

#### **14. Conflict Resolution Mechanism (Tier 2)**

Rationale: When conflicts arise, there are agencies that work towards a solution to alleviate any problem. The PMA office is a way for stakeholders to discuss problems. Nevertheless, building conflict-resolution capacity is needed, especially where there is a conflict in the marine component between fishers, hotels, etc. There will potentially be a marina built in Soufriere and this may result in a conflict because it is a fishery priority area.

#### **15. Climate Change Resilience (Tier 3)**

Rationale: When an application is received for development – it goes to the ministry to provided feedback on closeness to shoreline, and other inputs such as breakwaters.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: Even though a socioeconomic assessment has not been conducted, it is known that people rely heavily on tourism. PMA is currently trying to source alternative livelihoods, looking at other options, even local tourism. Activities like copra industry, fisheries, agriculture, and construction are being considered. Soufriere has been known to lack certain skills such as carpenters, plumbers, electricians, etc. People with these skills have moved out of town, so it is being looked at to build these skills now. Alternative livelihoods fall under the purview of tourism and sustainable development.

#### **17. Fisheries Management (Tier N/A)**

Rationale: Fisheries are under SMMA.

#### **18. Integrated Coastal Management (Tier 3)**

Rationale: Threats are derived from a lot of bad farming practices, such as clearing land. Measures have been put in place to reach out to farmers to try to alleviate those problems. Coordination with forestry and farming departments is in place. Some forest management is in place on private lands and crown lands. SMMA would be the lead agency because of vested interest in marine area. Collectively, PMA and SMMA do monitoring of upland threats and make recommendations. The SMMA Board is the mechanism for coordinating collaboration.

#### **19. Sustainable Tourism (Tier 3)**

Rationale: There is a sustainable tourism plan in place and a thorough assessment has been done. Tourism activities have been coordinated. Many activities are zoned for specific use and all operators are aware of those regulations. Regulations even include areas where there should be no bathing.

#### **20. Organizational Management (Tier 2)**

Rationale: Capacity has been assessed but the staff is not adequate. PMA needs two additional persons: an assistant manager and a community liaison officer in the field.

#### **21. Partnerships/Coordination (Tier 2)**

Rationale: Actually is Tier 2 and 3. There is no MOU between PMA and SMMA that states clear roles, responsibilities, and coordination. An MOU would help clarify who is responsible for what. With other agencies there are more clear roles. PMA has a board comprised of forestry, fisheries, SRDF, etc. – a total of 13 people. Nevertheless, this board is not functional at present.

#### **22. Economic Valuation (No)**

Rationale: This has not been done at the PMA site level, but has been done nationally. When Saint Lucia is advertised, the Pitons and sulfur springs are highlighted. Information from an economic valuation would be useful in promoting the site and the island in general.

#### **23. Rapid Response Protocol/Team (Yes)**

Rationale: National emergency management organization (NEMO) covers any disaster. Depending on what system is threatened.

#### **24. Ecosystem Based Management (Yes)**

Rationale: Yes, it is included in the management plan, which looks at creating the balance between management and nature. The emphasis is on balancing conservation and human use with strong land and sea components as well.



## 25. Community Support (High)

Rationale: When a development was going to happen, there was a demonstration in Soufriere, in support of the PMA.

## 26. Government Support (High)

Rationale: Last year there was a mission to monitor the site and plead the case to have the site get on the endangered WHS list.

### Management Capacity Priority Needs

1. **Financing** – a sustainable financing plan for day to day management and self sustaining, as to not being too dependent on foreign aid.
2. **On-site Management** - Capacity building and training on management of protected areas. For day to day management of protected areas.
3. **Ecological Networking** - More networking with other areas, both regional and international.

### Priority Capacity Building Approaches

1. Training
2. Technical support
3. Higher education courses

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

### References

### References

De Beauville-Scott, S. and S. George (2003). *Pitons Area Management Plan*. Approved by The Cabinet of Ministers of Saint Lucia by Cabinet Conclusion Number 387, of 16th June, 2003.  
<http://www.slunatrust.org/userpages//PMA%20Final%20Management%20Plan.pdf>

## Point Sable Environmental Protection Area

**Name:** Point Sable Environmental Protection Area (PSEPA)

**Country:** Saint Lucia

**Size:** 1,038 hectares (10.38 km<sup>2</sup>), of land and sea

**Management Agency:** Ministry of Physical Development, Environment, and Housing, Government of Saint Lucia. Area is part of the system of protected areas. Manager is currently contracted directed by OECS, but work with the Saint Lucia National Trust. This is the demonstration site for St. Lucia for the OECS Protected Areas and Associated Livelihoods (OPAAL) project.

**Site Resources:** Microcosm of many types of ecosystems. The site is made up largely of marine elements including reef, mangrove, wetlands, dry forest, beaches, and seagrass. The Maria Islands are home to seven (7) species of reptiles, five (5) of which are endemic. Fishery resources consist of a variety of finfish, conch, sea urchin, lobster, crab, and sea moss. Sea moss farming (mariculture) takes place mainly along the northern portion of Bois Chaden Beach.

**Site Uses:** pot fishing and spear fishing, hotels, sea moss farms, windsurfing, horseback riding, seine-net fishing, turtle nesting, kayak tours, mangroves harvested for charcoal production and construction materials.

**Threats:** The critical threats include inappropriate agricultural practices, inappropriate use of agrochemicals, inappropriate livestock practices, inappropriate planting practices, feral livestock, opportunity to graze at low cost, and lack of awareness of environmental impacts. Solid waste, effluents, non-point source pollution, illegal dumping of garbage in mangroves, agricultural wastes, dumping of garbage at sea, littering, waste transported by rivers and drains, and industrial effluents. Inappropriate fishing practices, including illegal and unsustainable harvesting methods like spear fishing and gill nets are also present. Use of poisonous substances in freshwater and the use of seines and trench digging for crabs in estuaries also threaten the site. Finally, among the inappropriate extractive practices there is harvesting of seabird eggs, sand, turtles, and use of incorrect harvesting methods for mangrove, palms, conch, and sea urchins, and use of inappropriate gear.

**Site contact:** Anthony Sammie, Manager, Saint Lucia National Trust, phone: (758) 713-3235, email: [mariaisland@candw.lc](mailto:mariaisland@candw.lc)

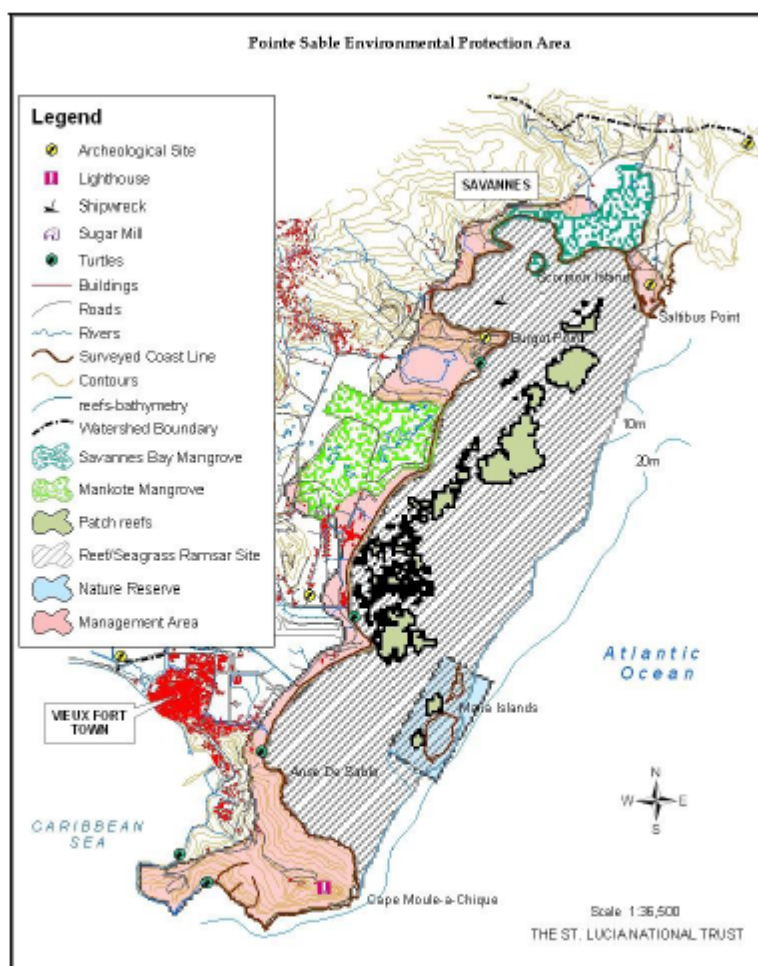


Figure 32 Map of Pointe Sable Environmental Protection Area

Question	Purpose
	The site shall be an Environmental Protection Area for the purpose of protecting the natural beauty or interest in the area. Also, under the OECS OPAAL Project guidelines, site must have the dual objectives of biodiversity protection and support for community livelihoods.

Question	Purpose	Yes	No
1b	To promote an integrated approach to management of areas within and outside the boundaries of the Pointe Sable Environmental Protection Area so as to reconcile human needs and conservation objectives and goals; (ii) To optimize the current and potential uses of natural and cultural assets in ways that benefit the local resource users and the wider population; (iii) To promote opportunities for the economic, educational, cultural and inspirational upliftment of locals and visitors; (iv) To ensure that sound conservation principles and practices	X	

	<p>are incorporated into the infrastructural and economic development initiatives within or in the vicinity of the area;</p> <p>(v) To provide an aesthetically pleasing environment that contributes to the fulfillment of the recreational needs of locals and visitors;</p> <p>(vi) To maintain the critical terrestrial, coastal, and marine habitats and ecosystems for the protection of biological diversity and the maintenance of ecological processes;</p> <p>(vii) To protect all endemic, threatened, endangered, and rare species, as well as their natural habitats;</p> <p>(viii) To provide appropriate mechanisms for the participation of resource users and local communities in the sustainable use, development, and management of resources;</p> <p>(ix) To develop a deeper understanding of, and appreciation for, the natural and cultural environment of the area, and to enhance the ability of all partners to manage the use of the resources;</p> <p>(x) To provide a site for demonstrating approaches that integrate conservation and development objectives, and build durable and equitable partnerships; and</p> <p>(xi) To lend support to the implementation of regional and international agreements to which Saint Lucia is party.</p>		
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CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning		x	
3	Ecological Network Development		x	
4	Governance		x	
5	On-site management		x	
6	Enforcement		x	
7	Boundaries	x		
8	Biophysical Monitoring	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation		x	
11	Stakeholder Engagement		x	
12	<b>Financing*</b>		x	
13	<b>Outreach and Education*</b>	x		
14	Conflict Resolution Mechanism	x		
15	Resilience to Climate Change	x		
16	<b>Alternative Livelihoods*</b>			x
17	Fisheries Management	x		
18	Integrated Coastal Management	x		
19	MPA Sustainable tourism		x	

20	Organizational Management	x		
21	Partnerships/Coordination		x	
	<b>Assessment Area</b>	<b>YES</b>	<b>NO</b>	
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management	x		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support			x
26	Government Support		x	

\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 2)

Rationale: Part of the project was to develop the plan in 2008 but it has not been officially approved. There was management activity happening before from the various agencies, such as forestry and fisheries. Each agency was managing different aspects of the site but now the idea is to pull them all together.

## 3. Ecological Networking (Tier 2)

Rationale: There is a network framework developed through the system plan, and Point Sable is part of the network. Also through the OPAAL project, the site is part of the system of networks for the region. Management of the site is not coordinated with other sites in the network. The site will probably be coordinated in the future, through the trust.

## 4. Governance (Tier 2)

Rationale: There is a management plan in place, but prior to the development of the plan, there are different bodies managing most components. There is a distinction between components in place and those actually being followed. Part of the management plan is to develop specific guidelines for the management of the different areas, and to develop an MOU with other agencies to define clear roles and responsibilities, and co-management. Hopefully, it will get approved by mid-year. An advisory committee, in addition to the coordinating agency, will be created. Right now there are separate managing activities, but not much coordination.

## 5. On-Site Management (Tier 2)

Rationale: The Saint Lucia National Trust is the implementation agency for the OPAAL demonstration site (PSEPA) for Saint Lucia management body. There is a site manager, and there is also a stakeholder's sustainable livelihoods committee. The site needs for the management plan to be approved and a decision about the implementing agency. There is a need for financing, as the site is not at the point of self-financing. There was a feasibility study looking livelihoods and financing.

## 6. Enforcement (Tier 2)

Rationale: The site is not enforcing the rules well. Rules are enforced by various agencies. The Fisheries Department is responsible for all marine activities, including fishing, mangroves and

coral reefs. There is a need to pay attention to fish, coral, mangroves, windsurfing, kite-surfing, fishing, kayaking, and boating. The Fisheries Department has two wardens assigned to the area.

### **7. Boundaries (Tier 1)**

Rationale: People do not know where the boundaries are. It is generally known as the coastal area between Moule-a-Chique and Pointe de Caille. The exact boundaries are unknown. The site needs to do GPS mapping. The plan refers to landmarks but not specific coordinates. Markers and buoys need to be installed by the resource personnel and units. A land surveyor is needed.

### **8. Bio-physical Monitoring (Tier 1)**

Rationale: Fisheries and forestry departments have national monitoring programs. The Caribbean Natural Resources Institute (CANARI) has done a lot of research dating back to the 80's. The management plan calls for more research in the site. Extensive geo-referencing, assessments and mapping of reefs and seagrass beds, have been done in the past. Fishing data are collected on reef fishing, including catch data. Biologists do reef checks to monitor reefs using video footage.

### **9. Socio-economic Monitoring (Tier 1)**

Rationale: The existing socioeconomic monitoring is completed through various institutions, without much coordination. The OPAAL project did a livelihood study to look at various livelihoods and what can be focused on. A socio-economic feasibility study was used to put together an alternative livelihood project for World Bank. The project identified that there should be an emphasis on agro-tourism. There is a need to develop sustainable tourism capacity.

### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: Fisheries department conducts monitoring effort from the fisheries point of view.

### **11. Stakeholder Engagement (Tier 2)**

Rationale: Community and stakeholders were involved in the consultations for the livelihoods project, and the feasibility study. Nevertheless, the general public is not that aware of the protected area. The focus has been on the livelihoods and not the general public. There is need for more stakeholder involvement.

### **12. Financing (Tier 2)**

Rationale: Existing funds through OPAAL ended in July 2011. The site is currently trying to find other sources of funds. Through the World Bank there is sustainable financing mechanism for the demonstration sites, which should start in 2 to 3 years. Also, grant funds through World Bank and other sources may be available.

### **13. Outreach and Education (Tier 1)**

Rationale: A combination of outreach and education is currently ongoing. The site had a lot of consultation, but very little is happening in practice. The OPAAL Project has an outreach project that was developed 2008. Technical and financial resources are needed to do more on-going activities. As part of the plan, a comprehensive public engagement strategy needs to be developed to include all Point Sable stakeholders.

**14. Conflict Resolution Mechanism (Tier 1)**

Rationale: There are rules and regulations in place, but it is unclear how agencies are managing conflicts. There is a need for a recreational plan that would help minimize conflicts between users, like horseback riders and beach bathers. When conflicts arise, parties argue among themselves. Conflict resolution mechanisms are available but not being used. The mechanisms need to be designed, managed, and the public must be informed. Zone need to be established.

**15. Climate Change Resilience (Tier 1)**

Rationale: There was little or no consideration for climate change in designing the site. There is still discussion about building hotels close to beaches or building hotels in the mangroves. Management needs to have consultation with resource users to let them know about how they can play their part. Agencies themselves are aware of resilience but it is more about stakeholders.

**16. Alternative Livelihoods (Tier 2)**

Rationale: Alternative livelihood opportunities at this site are in the tourism sector. The ideas for alternative livelihoods have been studied and developed through the OPAAL project but have not been implemented. There are not a lot of people living in Point Sable, and their main economic activities are farming and fishing. There are also some factory workers. Fishing is a very viable industry.

**17. Fisheries Management (Tier 2)**

Rationale: Even though a recent assessment has not been conducted, in the past resources of Point Sable, including sea moss, have been assessed. During the reef fishing season, June to December, data are collected and also reef video transects are conducted. Landings data collected include fuel consumption, area fished, and fishing gear. These data are analyzed by the fisheries department.

**18. Integrated Coastal Management (Tier 1)**

Rationale: No information is available on integrated coastal management for Point Sable.

**19. Sustainable Tourism (Tier2)**

Rationale: A feasibility study that looked at tourism options in the site has been conducted by OPAAL. Funding, and a body responsible for the implementation of the plan, are needed.

**20. Organizational Management (Tier 1)**

Rationale: Organizational Management has not been assessed as yet. The only personnel in the site is the manager for the OPAAL project. St. Lucia National Trust is going to have a southern area manager which could also manage the Point Sable.

**21. Partnerships/Coordination (Tier 2)**

Rationale: St. Lucia National Trust has a good partnership with fisheries and forestry, especially with regards to monitoring. The partnership, however is not formal, and no MOU has been signed. The management plan calls for an MOU to be in place.

**22. Economic Valuation (Yes)**

Rationale: Point Sable could use information on the economic value of resources to help with tourism and to determine how valuable the sites are. The management plan calls for the assessment of the reefs to determine the status.

### **23. Rapid Response Protocol/Team (Yes)**

Rationale: A rapid response process is national (National Emergency Management Organisation [NEMO], Marine Police, etc.) and not just for the trust. The process is in place but it is not clear who is responsible. Currently, St Lucia is developing an invasive species management plan.

### **24. Ecosystem Based Management (Yes)**

Rationale: A lot of research has been done in the past to look at the site as a whole. The focus was based on theory only, but at this point it has not been implemented.

### **25. Community Support (Low)**

Rationale: People we speak to support management of the site but there is a general lack of awareness of the site by the general public. There is need for more outreach. Maria Island is better known than Point Sable.

### **26. Government Support (Medium)**

Rationale: The site was legally designated. The National Trust was established by act of parliament and is receiving funding from the government. The Trust has one or two government members on the board. It's a membership organization.

## **Management Capacity Priority Needs**

1. Funding to implement elements of the management plan
2. Funding to implement the feasibility study for alternative livelihoods
3. Public Engagement strategy

## **Priority Capacity Building Approaches**

1. More staff
2. Training
3. Technical support

## **References**

Gardner, Lloyd (2009) *Management Plan for the Pointe Sable Environmental Protection Area, 2009-2014*. Government of Saint Lucia.



## Soufriere Marine Managed Area

**Name:** Soufriere Marine Managed Area (SMMA)

**Country:** St. Lucia

**Year Established:** 1994

**Size:** Unknown (bathymetry data is not available to define the seaward boundary defined as 75m, therefore the actual size of the site is unknown)

**Management Agency:** Soufriere Marine Management Association – an NGO with the legal authority to manage the site.

**Site Resources:** The SMMA is dominated by near shore coral reef plateaus that rapidly drop off to deep waters. The reef is covered in gorgonians, soft corals and sponges. There is also a wreck within the site that was placed by the Department of Fisheries in 1986 as an artificial reef. (<http://www.scubastlucia.com/diving.html>)

**Site Uses:** Diving, Boating, Snorkeling, Swimming, Fishing

**Threats:** The main threats to the site are coastal development, tourism activities, sand mining, climate change, and natural disasters.

**Site Contact:** Newton Eristhee, (General Manager) Soufriere Marine Management Area phone: 758 459-9500 email: [neristhee@smma.org.lc](mailto:neristhee@smma.org.lc)



Figure 33. Map of Soufriere Marine Managed Area

Question	Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	The purpose of the designation was to manage user conflict among the various interest groups in the area including divers, fishers, and swimmers.

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning*			x
3	Ecological Network Development		x	
4	Governance		x	
5	On-site management			x
6	Enforcement*		x	
7	Boundaries			x
8	Biophysical Monitoring		x	
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation		x	
11	Stakeholder Engagement			x
12	Financing*		x	
13	Outreach and Education		x	
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change			x
16	Alternative Livelihoods			x
17	Fisheries Management		x	
18	Integrated Coastal Management		x	
19	MPA Sustainable tourism	x		
20	Organizational Management		x	
21	Partnerships/Coordination			x
	Assessment Area	YES		NO
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support	x		

26	Government Support	x		
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\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 3)

Rationale: A management “agreement” was written and approved in 1994 which provided information about various aspects of management of the site including 1) institutional arrangements and responsibilities, 2) revenue sources, 3) job responsibilities and skills required for four wardens and the SMMA manager, 4) infrastructure needed (demarcation and mooring buoys, zoning signs), 5) systems for monitoring, and 6) public awareness needs. This agreement guided management activities for several years. However, at the time of designation, the site did not have a clear vision, goals, or objectives, which created conflict among users over time. In 2001, a new agreement was drafted and approved which states a shared vision, objectives of the SMMA, zones, regulations, institutional agreements, and summaries of various programs of the site (e.g. research and monitoring, outreach and awareness, financing and revenue generations). This agreement is used to guide the day-to-day management activities at the site. This document also provides the legal framework for the site management agency which is an NGO established by law to manage the SMMA.

## 3. Ecological Networking (Tier 2)

Rationale: The SMMA was designed as an ecological network with various zones. The SMMA has different marine reserves within the area that are “no take”. Prior to designation, an assessment was done to determine which areas had the most important reef structure and which are important for juvenile fish. In addition to the no take areas, there is a zone that is a sanctuary which is essentially a control site, and no activity is allowed. The site has also been identified to be part of a national network of MPAs in St. Lucia. Currently there is not much coordination with other sites and the SMMA has been the most active MPA to date. However, new sites are becoming more actively managed and there is interest in becoming more involved and coordinating with these sites.

## 4. Governance (Tier 2)

Rationale: The legal framework used to establish the SMMA in 1994 was the Fisheries Act No. 10 of 1984, which provides for the establishment of Fishing Priority Areas and Marine Reserves. However, other laws including the Parks and Beaches Commission Act No. 4 of 1983 also guide aspects of the management of the SMMA. These laws provide the foundation for the regulations of various activities and issues that occur within the various zones of the park (e.g. diving, anchoring, fishing, coral damage). Additionally in 2001, the Soufriere Marine Management Association was established under the Companies Act of St. Lucia 1996 as a not for profit company, for the purpose of management of the SMMA and to establish generic by-laws for the site. The association also operates as the local management authority for the Fisheries Department and enforces fisheries regulations. While it’s possible to establish by-laws for the site, there are no legal by-laws that have been approved thus far to govern use and users of the SMMA. There are only by-laws to govern the Board of Directors. As such, any fees collected from violations within the site go into the Fisheries Department rather than back into the Association. For this reason managers mentioned an interest and need for developing site by-laws.

## 5. On-Site Management (Tier 3)

Rationale: The Association has a staff that are on-site at the SMMA on a regular basis. This includes four rangers, one project officer/ranger, a general manager, and a part time accountant. Additionally there is a Board that oversees the management of the SMMA and is made up of representatives from various stakeholder groups. However, the SMMA has also been asked by the St. Lucia government to manage an adjacent site that is almost equal in size as the SMMA. As such, the SMMA has recently become stretched thin (in equipment and personnel) in covering both sites to carry out enforcement, awareness, and collection of user fees, and staff numbers are no longer enough to provide on-site management effectively.

## **6. Enforcement (Tier 2)**

Rationale: There are currently four wardens at the SMMA which managers expressed is not enough to cover the areas of responsibility consistently. Additional wardens are needed and technical support is needed to develop an enforcement program that is consistent and rigorous. Funding for a boat and personnel are needed to improve this program. Site management expressed an interest in hiring a technical assistant (to become mentor) for the wardens who could work with the site to provide training and develop an enforcement program. One particular challenge with enforcement is that the Association is operating under the Fisheries Act and the site itself does not have by-laws. As such, the wardens do not have authority to fine operators who don't pay user fees. The Association is interested in legal technical support to help draft by-laws specifically for the site.

## **7. Boundaries (Tier 3)**

Rationale: The boundaries for the site are clearly defined in the "Agreement to Manage" document including various zones that have specific regulations. All of the zones are clearly marked by both on-shore signage and marker buoys in the water. The seaward boundaries for the SMMA are at 75m however. There is no bathymetry data for this site however so the extent of this seaward area is unknown and not marked. Site managers expressed an interest in obtaining this information to help with site management. Management noted the on-going challenge with funding the maintenance of the buoys.

## **8. Bio-physical Monitoring (Tier 2)**

Rationale: There have been bio-physical assessment activities that have occurred in the site but an on-going program has not been implemented that feeds into adaptive management. Sediment trap information is recorded every two weeks to understand the amount of sediment coming into the area from nearby rivers. Data from this regular monitoring has not been analyzed however. Water quality is also being tested for recreational purposes. Piggery waste has been noted as a big problem, which is currently being addressed through support from a GEF grant. The University of the West Indies has also provided support for monitoring but this has not provided on-going consistent monitoring activity. Additionally, the Fisheries Department has done periodic Reef Check monitoring every six months but the data collected is not sufficient to answer management questions and information is not readily available to the SMMA. Local divers also provide some on-going informal assessments and report any concerns they notice on the reef such as bleaching to the Association. An on-going monitoring of the site including data analysis was noted as a high interest for the SMMA. The Association also noted an interest in collecting "carrying capacity information.

## **9. Socio-economic Monitoring (Tier 1)**

Rationale: During the development of the SMMA, stakeholder engagement was high and socio-economic considerations were crucial to the planning process. During this time, participatory mapping was carried out with various stakeholder groups to “assess” which areas were most important for which purpose. However, beyond the development of the site, little socio-economic monitoring has occurred to understand the dynamics of current stakeholders and the management effectiveness of supporting socio-economic goals of the site. Additionally, studies such as “willingness to pay” information is of interest to the Association to better inform the user fee structure. In 2007 SocMon survey was carried out but the data was not fully analyzed and the survey did not meet management needs. Therefore it was noted that a new assessment that is more linked to the specific objectives and management interest of the SMMA is very important and needed and should be done regularly (i.e. every few years). Staff capacity to do this is limited.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: The Association noted a need for the development and implementation of an on-going evaluation program to understand MPA effectiveness. As mentioned previously, various assessments have been carried out in the past sixteen years but none have been aimed specifically at understanding the success of the site at meeting its biological and socio-economic goals. The SMMA has been noted as a model site in the region, and a priority for the Association is to be able to evaluate effectiveness regularly and establish a framework to ensure that the site is successful into the future. Currently funds have limited the ability of the Association to hire on someone to carry out this work and site managers noted this as a priority for capacity building.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: The SMMA has been recognized as a model MPA in the region primarily due to the highly participatory process that was used to develop the site. Based on user conflict the process was initiated to include all stakeholder groups in defining the zones of the area to best meet each group's need while also protecting biological resources of the area. As such, the site was developed through extensive stakeholder consultation and collaboration including the development of a Board that is made up of various stakeholder groups (governmental and non-governmental). The Board continues to represent various stakeholder interests and sets policies for the SMMA. As the site has evolved, new stakeholder groups have begun using the area (e.g. day-trips from Cruise Ships). As such, the Association and the Board are trying to determine the best way to address these users. This is particularly important in determining how to collect fees from these new groups.

#### **12. Financing (Tier 2)**

Rationale: The site has very clear structure for user fees including diving/snorkeling and mooring fees. Almost all funding for the site management is derived from user fees, with an additional amount that comes from project grants which do not cover operational costs. Revenue is highly dependent on tourism which has been negatively impacted with the recent economic downturn. Additionally, it is often dependent on dive operators to collect fees and provide them to the SMMA. It is unclear if all fees are collected and/or reported this way. The Association is interested in possibly restructuring the user fee mechanism to provide more direct funding to the SMMA through selling of bracelets to dive shops directly. Therefore, while the site has a fairly reliable source of funding through user fee collection, it is not sufficient to hire adequate staff and equipment for effective management. Additionally, the site is now in

charge of managing another site adjacent to the SMMA but no additional funding has been provided to do so. Finally, the SMMA is working with international partners like The Nature Conservancy to support the development of a sustainable finance mechanism for sites that support the Caribbean Challenge.

### **13. Outreach and Education (Tier 2)**

Rationale: Outreach and education efforts do occur for the SMMA but they are not consistent and there is no dedicated staff or program to carry out outreach activities. Activities include lectures in schools and brochures that are used for the general public. Additionally the rangers provide outreach on regular patrols when talking to stakeholders using the site. Funding has limited the ability of the SMMA to carry out more consistent outreach and education activities.

### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: The SMMA was established to resolve conflict among users. The Association is now considered the mechanism by which stakeholders can raise concerns or conflicts with other stakeholders. The Association will investigate the issue and determine what should be done to resolve the conflict. Because the site was established as means to resolve conflicts, and was inclusive of stakeholders to develop zoning schemes, a clear precedent was set for resolving conflicts. Site managers expressed the success of this approach.

### **15. Climate Change Resilience (Tier 3)**

Rationale: Although climate change resilience principles were not established sixteen years ago when the site was designed, there were scientist involved who were knowledgeable about the systems and principles of ecological linkages and protection. Therefore when the site was zoned, many ideas that are now considered resilience principles (e.g. seeding areas, replication, representation) were considered. Based on the ecology of the area, certain zones were set aside for conservation and preservation. However, management expressed that management efforts could be improved to avoid impacts of climate change. In particular impacts from recent sedimentation events were noted that may have had negative impacts on coral reef habitat.

### **16. Alternative Livelihoods (Tier 3)**

Rationale: During the development of the SMMA, it was recognized that fishermen would be most impacted by the establishment of the site. There were efforts to preserve important fishing areas through the zoning scheme which includes fishing zones. Additionally, the OPAAL project carried out some assessments of the area early in the site development to review impacts and options for alternative livelihoods. There is a need to review this effort and carry out new assessments to determine success and need for further efforts on alternative livelihood program. A Fish Aggregating Device (FAD) was placed outside SMMA by the Fisheries Department to take the pressure off the SMMA resources and provide alternative areas for fishing near the area.

### **17. Fisheries Management (Tier 2)**

Rationale: The Department of Fisheries has a fisheries management plan and the SMMA was established under the Fisheries Act. The zoning for the site was designed according to fisheries assessments of the area and included regulations such as the banning gill nets which could be harmful to site resources. Within the SMMA the main fishing that occurs in the fishing zones are seine fishing, pot fishing, and trolling. There is a need for further assessments however and the SMMA does not have the human or financial capacity to carry these out.

**18. Integrated Coastal Management (Tier 2)**

Rationale: The SMMA has done a few small projects to begin to address land-based sources of pollution from areas adjacent to the site. Specifically, it was determined that pig farmers contributed significantly to nutrients entering the area. The Association has begun working with the Department of Agriculture to develop a composting project to help reduce this threat. Informal threat assessments have also occurred in the area and there is coordination with agencies that address land based pollution issues. Specifically the Soufriere watershed has been assessed extensively for the designation process of a World Heritage Site of the Pitons Management Area whose terrestrial portion is adjacent to the SMMA. However, there is not a formal mechanism to coordinate these agencies to focus on addressing land based pollution issues.

**19. Sustainable Tourism (Tier 2)**

Rationale: Site management noted that this was an area where the site was lacking in capacity. They are interested in understanding the carrying capacity of certain areas such as dive sites. Dive operators are required to provide the Fisheries Department with the number of dives they do per site on an annual basis. This does not include snorkeling charters. Additionally, this information is not being used to address carrying capacity. Site managers expressed an interest in gaining capacity support to address this issue as well as a willingness to pay study.

**20. Organizational Management (Tier 2)**

Rationale: Over time the Association has been asked to take on new roles and responsibilities but have not been provided with additional resources or training. They have recently been asked to take on the management of a whole new MPA adjacent to the SMMA without additional staff resources. Additionally, the finances of the site are based on tourism fees, which can fluctuate and do not provide sufficient funds for adequate staff numbers. As such, staff are stretched thin. The site manager is particularly interested in filling a short-term position of a chief enforcement officer with a consultant who can develop a strong framework for the program as well as provide training for the younger wardens.

**21. Partnerships/Coordination (Tier 3)**

Rationale: The SMMA Board is made up of government and non-governmental organizations and agencies that have an interest in site management including the St. Lucia Dive Association, the Hotel and Tourism Association, the Soufriere Fishermen's Cooperative, the Soufriere Regional Development Foundation and the Soufriere Water Taxi Association, the Ministries of Planning, Fisheries and Tourism, the National Conservation Commission, and the Air and Sea Ports Authority, and one or two individuals nominated by the District Representative and the Cabinet of Ministers. As such, the site was designed to be a collaboration of agencies and stakeholder groups, which allows site management to be informed by and provide information to various groups.

**22. Economic Valuation (Yes)**

Rationale: An economic valuation was carried out for the site. Information was used to get more support for the Fisheries sector.

**23. Rapid Response Protocol/Team (Yes/No)**

Rationale: There is rapid response protocol set up for specific purposes such as ship groundings; however there is not protocol for invasive species or bleaching events. Dive operators do report any bleaching that is noted on the reefs.

#### **24. Ecosystem Based Management (Yes)**

Rationale: As mentioned previously, the site was designed with ecosystem-based principles. The ecology of the area was assessed and zoned to provide protection of key habitats in the site. Additionally, the area was designated based on stakeholder input to address interests of these groups and avoid negative impacts.

#### **25. Community Support (HIGH)**

Rationale: While community support is perceived to be high for the SMMA, the Association mentioned that there was still a lot of work to be done to engage stakeholders to help protect the site by managing anthropogenic threats such as pollution.

#### **26. Government Support (HIGH)**

Rationale: The government has been very supportive of the designation and management of the site. However there have been little monetary resources provided to the Association from the government.

### **Management Capacity Priority Needs**

1. **Sustainable Financing** – while there is consistent funds provided to the Association for site management through user and mooring fees, this is not sufficient to support staff and infrastructure needed to manage the site.
2. **Enforcement** – there is interest in both the development of an improved enforcement program that includes additional staff, and training as well as development of regulations (by-laws) specific to the site. This is a critical piece for the site because wardens are needed to collect funding.
3. **Strategic management plan** – Site managers are interested in a strategic plan to be developed that outlines specific indicators (biological and social) to understand effectiveness of the site. Training and technical support are needed to then monitor effectiveness.

### **Priority Capacity Building Approaches**

1. Technical Support – Specifically for a chief enforcement officer who can develop a program and train wardens.
2. Training
3. More staff

**\*\*Site managers also expressed an interest in to do a learning exchange with Florida Keys National Marine Sanctuary to learn new and improved techniques in buoy installation and maintenance.**

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.



### References

Scuba St. Lucia Website (2005) <http://www.scubastlucia.com/diving.html>

Soufriere Regional Development Foundation (1994) *Management Plan for the Soufriere Marine Management Area*.

<http://www.smma.org.lc/index.php?title=Public%20Documents&page=downloads>

Soufriere Regional Development Foundation (2001) *Agreement to Manage the Soufriere Marine Management Area*.

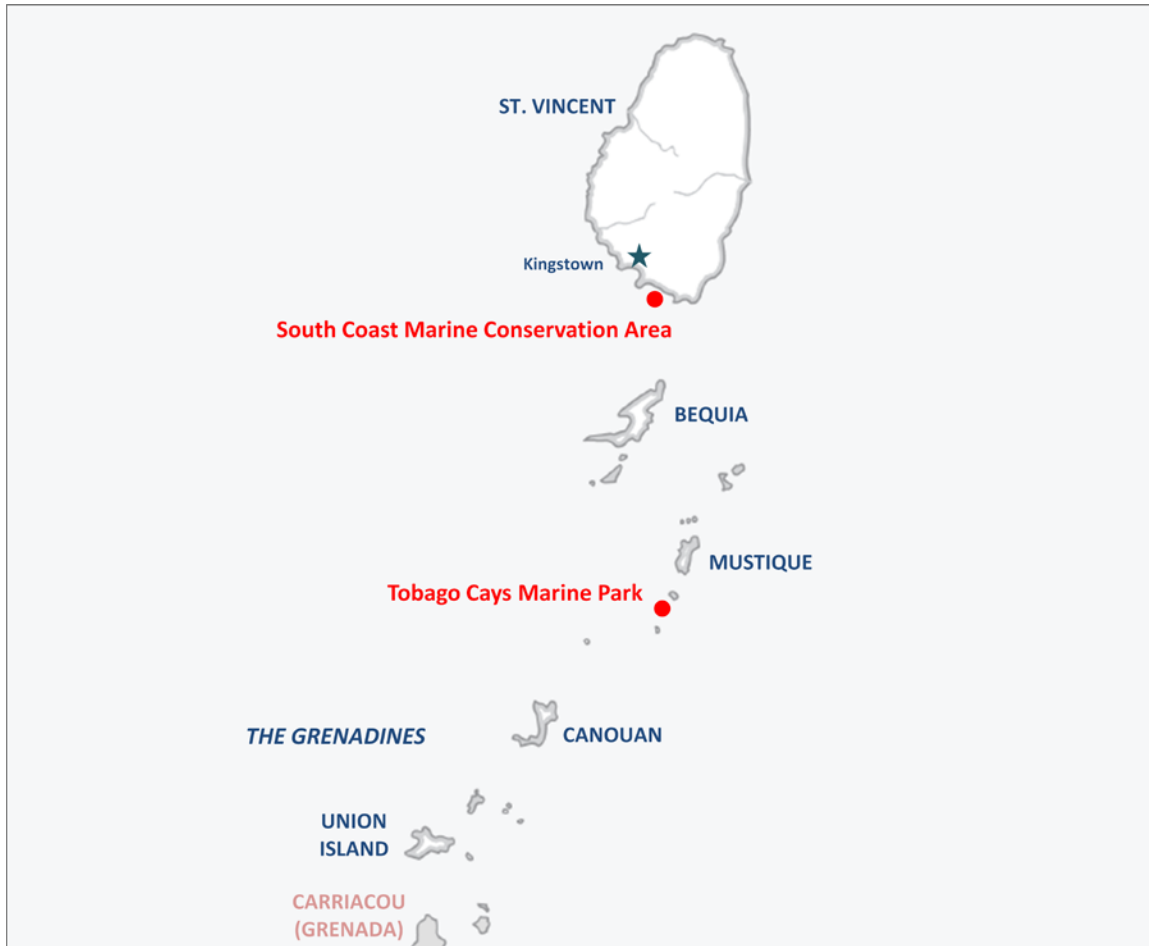
<http://www.smma.org.lc/index.php?title=Public%20Documents&page=downloads>

## St. Vincent & the Grenadines

**Dates of Interviews:** January 25-29, 2011

**Interviewer:** Alex Arrivillaga and Meghan Gombos

**Agencies/Organizations Interviewed:** Fisheries Division, National Parks Authority, Tobago Cays Marine Park, and Sustainable Grenadines Inc.



## South Coast Marine Conservation Area

**Name:** South Coast Marine Conservation Area

**Country:** Saint Vincent and the Grenadines

**Size:** size of the MPA is unknown

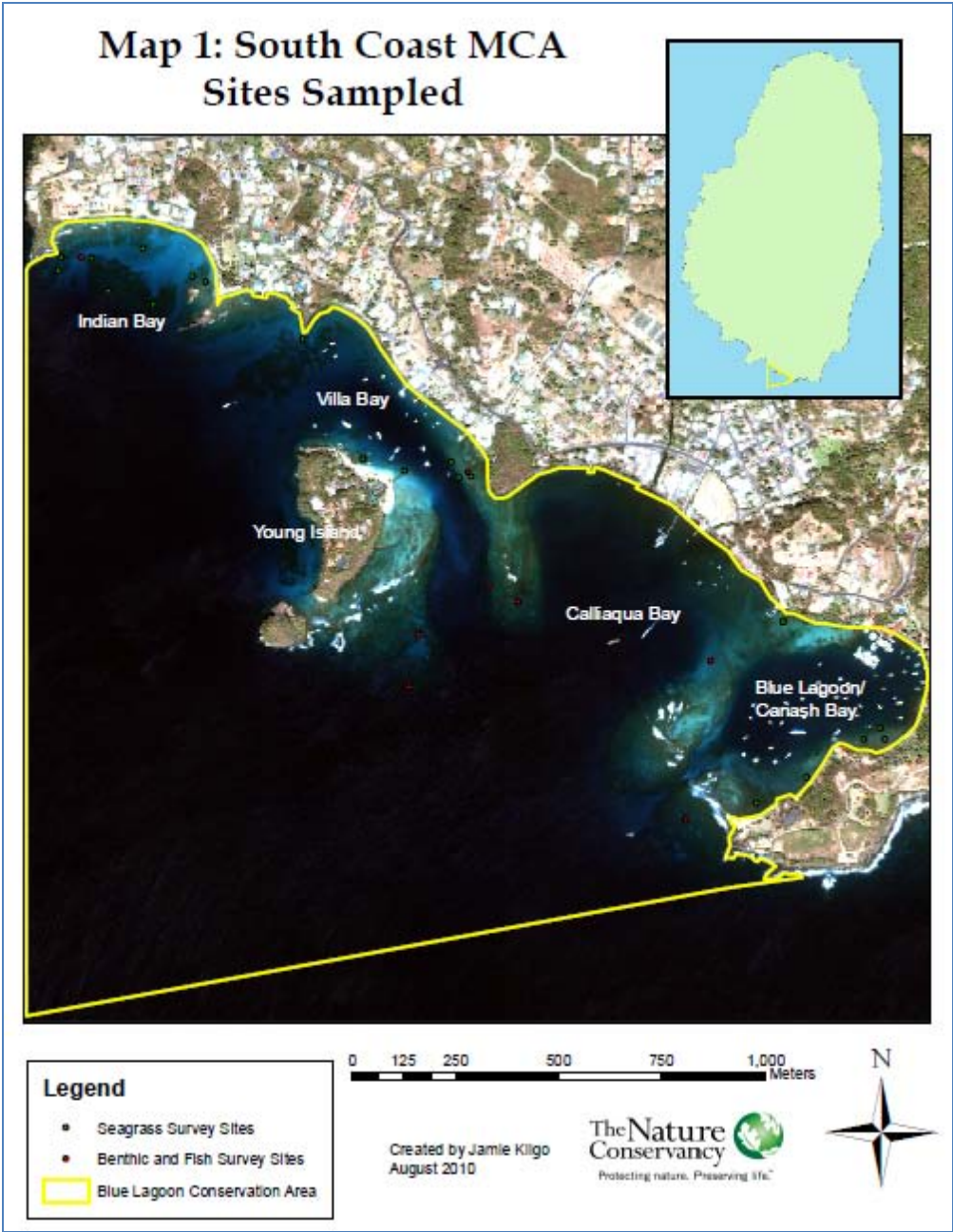
**Management Agency:** Fisheries Division.

**Site Resources:** The South Coast Marine Conservation Area (MCA) includes beaches, coral reefs, sea grass beds and historical sites. The area is contained in the most populous constituency in St. Vincent and the Grenadines and encompasses the most widely used recreational beaches on St. Vincent, namely Indian Bay Beach and Villa Beach.

**Site Uses:** fishing and tourism.

**Threats:** Anecdotal evidence suggests that the health of marine habitats within the South Coast MCA has declined over the last two decades. This decline is often ascribed to increased physical damage from anchors, divers, sea bathers and hurricanes. Solid waste and sewerage disposed from holding tanks and domestic sources has lead to increased eutrophication on many beaches within the area. Beach attrition is also a major threat as all beaches have visibly receded further inland since MCA designation in 1987.

**Site contact:** Lucine Edwards (Fisheries Officer Conservation) St. Vincent Fisheries Division, phone: (784) 456-2738. Andrew Lockhart (Superintendent of Marine and Terrestrial Parks), National Parks Authority phone: (784) 533-0028



**Figure 34 Map of South Coast Marine Conservation Area**

Question	Purpose		
	Site officially declared as part of the NMPASP of 1987, for fisheries purposes		

Question	Purpose	Yes	No
1b	No management plan in place		X

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	<b>Management Planning*</b>	x		
3	Ecological Network Development	x		
4	Governance	x		
5	On-site management	x		
6	Enforcement	x		
7	Boundaries	x		
8	Biophysical Monitoring	x		
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation	x		
11	<b>Stakeholder Engagement</b>	x		
12	Financing	x		
13	Outreach and Education	x		
14	Conflict Resolution Mechanism	x		
15	Resilience to Climate Change	x		
16	Alternative Livelihoods	x		
17	Fisheries Management	x		
18	Integrated Coastal Management	x		
19	MPA Sustainable tourism	x		
20	Organizational Management	x		
21	<b>Partnerships/Coordination*</b>		x	
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management	x		
ENABLING ENVIRONMENT				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		x	
26	Government Support	x		

\*denote identified priorities for capacity building

## 2. Management Planning (Tier 1)

Rationale: The site has been officially declared but no management plan is in place. There is no official guidance on how to proceed to have the management plan developed. Public engagement is also needed.

## 3. Ecological Networking (Tier 1)

Rationale: The National System Plan is in place.

**4. Governance (Tier 1)**

Rationale: Planning, co-management and stakeholder involvement need to be developed.

**5. On-Site Management (Tier 1)**

Rationale: No management personnel are assigned to site

**6. Enforcement (Tier 1)**

Rationale: Few or no established rules and regulations exist. There is little enforcement of rules and regulations.

**7. Boundaries (Tier 1)**

Rationale: Boundaries were defined in the legislation with official designation.

**8. Bio-physical Monitoring (Tier 1)**

Rationale: An AGGRA bio-physical assessment was completed in 2008 by the CARICOM Fisheries Resource Assessment and Management Program, CRFRAMP, and TNC, providing baseline information for the site. No on-going monitoring is occurring due to lack of capacity.

**9. Socio-economic Monitoring (Tier 1)**

Rationale: Little or no existing socioeconomic monitoring activity exists.

**10. MPA Effectiveness Evaluation (Tier 1)**

Rationale: since this is still a non operational MPA, no evaluation of MPA effectiveness has been conducted.

**11. Stakeholder Engagement (Tier 1)**

Rationale: no community or stakeholder engagement in management planning.

**12. Financing (Tier 1)**

Rationale: Financing should be provided by the National Parks Authority.

**13. Outreach and Education (Tier 1)**

Rationale: Outreach and education are regarded as important components, but no activities have been implemented in those components.

**14. Conflict Resolution Mechanism (Tier 1)**

Rationale: The law requires a Board to be in place, with participation of stakeholders. This instance can serve as a conflict resolution mechanism.

**15. Climate Change Resilience (Tier 1)**

Rationale: Little consideration of climate change resilience in the management of the MPA.

**16. Alternative Livelihoods (Tier 1)**

Rationale: Socioeconomic assessment of the impacts of MPA regulations on resource users has not been completed and no alternative livelihood opportunities have been developed.

**17. Fisheries Management (Tier 1)**

Rationale: Fishermen fish outside of the park. Only recreational fishing is allowed inside the park.

**18. Integrated Coastal Management (Tier 1)**

Rationale: coastal threats in adjacent watersheds have not been assessed.

**19. Sustainable Tourism (Tier 1)**

Rationale: The Ministry of Tourism has developed a National Tourism Master Plan with community consultations.

**20. Organizational Management (Tier 1)**

Rationale: There is no management at the site level.

**21. Partnerships/Coordination (Tier 2)**

Rationale: There is no management at the site level but there is coordination between the Fisheries Division and the National Parks Authority.

**22. Economic Valuation (Yes)**

Rationale: Information from the economic valuation of natural resources can be useful to gain politicians support.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: There are emergency response protocols for oil spills and turtle stranding.

**24. Ecosystem Based Management (Yes)**

Rationale: ecosystem based management principles are being considered in the design and management planning of the MPA.

**25. Community Support (Medium)**

Rationale: During the tourism assessment community members were asked about the protected area, indicating they were in agreement with its existence. Awareness raising activities could increase community support.

**26. Government Support (High)**

Rationale: Several Ministries support the area, as it is important for tourism.

**Management Capacity Priority Needs**

1. **On site Management** - park conceptualization, stakeholder consultations, zoning, etc.
2. **Partnership/ Coordination** - Identifying existing/establishing new groups to co-manage parks/sites
3. **Management planning** - writing and reviewing

**Priority Capacity Building Approaches**

1. **Training** - Stakeholder identification and engagement, project proposal writing, writing of management plans.

2. Technical support - Project consultant for site level planning and identifying leveraging opportunities.
3. Other - Internships. On other projects helping to establish new parks would provide the opportunities to help put into practice lessons learnt from developing a new park here.

#### References

Kilgo, J. and Edwards L. (2011) *Draft South Coast Marine Conservation Area AGRRA*. Unpublished report.



## Tobago Cays Marine Park

**Name:** Tobago Cays Marine Park (TCMP)

**Country:** St. Vincent and the Grenadines

**Year Established:** 1997

**Size:** 66km<sup>2</sup>

**Management Agency:** Tobago Cays Marine Park Board

**Site Resources:** The TCMP is made up of both dry forest and beach vegetation on the several small islands on the site as well as a variety of coral reef formations including what is considered the largest reef in the country. There are also small areas of seagrass beds in the lagoon area and a small strand of mangroves on one of the adjacent islands.

**Site Uses:** The primary users of the site are recreational (both local and tourists). Yachting, diving, and snorkeling are the predominant activities in the site.

**Threats:** Wastes from yachts and cruise ships, recreational over-use (including too many users in specific areas), overexploitation (overfishing / out of season harvesting / spear fishing), anchor damage, disturbance of turtles.

**Site Contact:** Kenneth Williams (Director) Tobago Cays Marine Park, phone: (784) 526-6090  
email: [kenawillo@hotmail.com](mailto:kenawillo@hotmail.com)

**Other Contacts:** Sustainable Grenadines Inc. (SusGren) is a local transboundary NGO that works collaboratively with MPAs in this region to foster improved management capacity. As such, SusGren has recently facilitated the development of a formalized Grenadines Network of MPAs (i.e. TCMP, SIOBMPA, and MBMPA) in January 2011. The agreement signed among these sites fosters collaboration between the MPAs and their partner organization, and information sharing on all aspects of MPA management. SusGren has also launched a unique initiative to carry out multi-national Marine Spatial Planning in the region with the aim of developing a multi-use zoning plan for the entire Grenadines. Based on these efforts, SusGren provides an excellent venue for collaborative partnerships among governments and NGOs, and shared capacity building activities among the MPAs of the Grenadines.

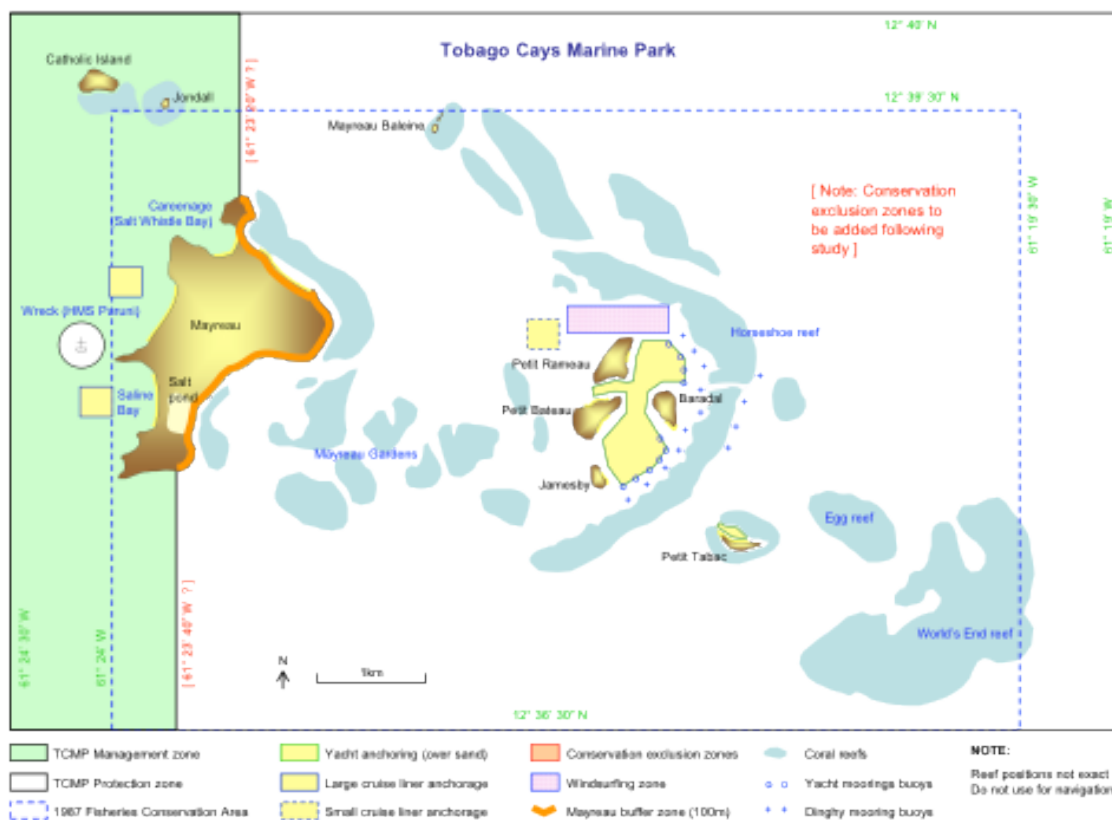


Figure 35. Map of Tobago Cays Marine Park

Question	Purpose
1a	According to the official designation of the site, what is the purpose of the MPA?
	1. Towards these aims, the GOSVG established the Tobago Cays as a marine park with a mission to protect, conserve and improve the natural resources of area.

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	X	

CURRENT MANAGEMENT CAPACITY SUMMARY				
2	Management Planning			X
3	Ecological Network Development*	X		
4	Governance			X
5	On-site management			X
6	Enforcement			X
7	Boundaries		X	

8	Biophysical Monitoring		x	
9	Socioeconomic Monitoring		x	
10	MPA Effectiveness Evaluation			x
11	Stakeholder Engagement		x	
12	Financing			x
13	<b>Outreach and Education*</b>		x	
14	Conflict Resolution Mechanism			x
15	<b>Resilience to Climate Change*</b>		x	
16	Alternative Livelihoods			x
17	Fisheries Management			n/a
18	Integrated Coastal Management		x	
19	MPA Sustainable tourism			x
20	Organizational Management			x
21	Partnerships/Coordination			x
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>
22	Economic Valuation			x
23	Emergency Response			x
24	Ecosystem Based Management			x
<b>ENABLING ENVIRONMENT</b>				
	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support	x		

\*denote identified priorities for capacity building

## 2. Management Planning (Tier 3)

Rationale: In November 2007, an extensive review and revision of the management plan was done to create the "2007-2009 management plan" for the TCMP. This effort was as a sub-project the Office of Eastern Caribbean States, Protected Area and Alternative Livelihood initiative (OPAAL). The plan was approved by the TCMP Management Board and passed through Cabinet of the St. Vincent and the Grenadines Government.

This management plan includes an extensive review of previous plans and studies as well as a legal review of the site designations laws, rules and regulations. It provides thorough background information on the site resources (bio-physical and social), and known status. It also provides governance framework, goals, objectives, rules, regulations, zoning framework, and monitoring indicators, and communications plan. Since the development of the management plan the TCMP staff have been working on implementing the activities listed throughout the document. The plan has not yet been updated however because they have not completed the existing activities. There is a need to review the monitoring and evaluation

information collected since 2007 and update and adapt the plan to accurately reflect the current status of the site and necessary management actions needed to achieve site objectives.

### **3. Ecological Networking (Tier 1)**

Rationale: The Tobago Cays Marine Park was not established as part of an ecological network. However St Vincent and the Grenadines recently adopted a National Systems Plan that is aimed at the development of a national system of protected areas. While the reasons for developing this system are recognized in the document as an initiative to fill the economic void of a declining banana industry with promoting and diversifying tourism. The document specifically mentions the development of sustainable tourism that addresses environmental problems as well. Through this plan the TCMP would be part of the larger network and coordinated with other site through the National Parks Authority. Additionally, a local NGO (SusGren) has recently facilitated the development of a formalized Grenadines Network of MPAs (including the TCMP, SIOBMPA, and MBMPA) in January 2011. The agreement signed among these sites fosters collaboration between the MPAs and their partner and information sharing on all aspects of MPA management. SusGren has also launched a unique initiative to carry out multi-national Marine Spatial Planning in the Grenadines with the aim of developing a multi-use zoning plan for the entire Grenadines which would include the TCMP.

### **4. Governance (Tier 3)**

Rationale: The legal history and establishment of the Tobago Cays Marine Park is complex. The site was first designated in 1987, along with nine other sites in St. Vincent and the Grenadines, as a Conservation Area by the Fisheries Division. However, it has been raised that the Fisheries Act of 1986 only allowed the designation of marine reserves, not conservation areas. However, the TCMP was then designated in 1997 through the Marine Parks Act (No. 9 of 1997). The Act established a basic set of regulations including “no fishing, no removal or damage of objects, no commercial activities outside of specific designated areas, and no pollution.” Additionally official zones have been adopted which regulate activities in various areas of the site and therefore all activities are regulated. The Act also created the framework for the establishment and responsibilities of a Marine Parks Board that would be responsible for regulating, permitting, and staff management of all marine parks. Currently there is only one Marine Park however so the board is specifically the Tobago Cays Management Board. The Act states however that the power to make regulations is assigned to “the Minister responsible for parks” (i.e. the Minister for Agriculture, Lands and Fisheries, in the case of marine parks), not the board. The management plan provides an overview and review of the existing governance framework and provides recommendations for changes including changes to the framework of the governance structure. Finally the Tobago Cays are also listed as a forest reserve and as a wildlife reserve (under the 1992 Forest Resource Conservation Act and the 1987 Wildlife Protection Act respectively; IJA, 2004a). The national systems plan proposes that all designations be removed except the marine park designation so that governance and management of the site are clearly defined by law.

### **5. On-Site Management (Tier 3)**

Rationale: While the staff management office is not located on-site, they are located on Union Island, which is approximately 20 minutes away by boat from the site. There are fifteen full-time staff for the site which is close to 75% of that identified as needed for full site management. Site rangers are on the water daily. Other management staff are housed in the main office on Union Island and go to the site as needed. The management plan identifies the

need for a permanent ranger outpost station within the site but this has not yet been completed do to lack of funds.

#### **6. Enforcement (Tier 3)**

Rationale: A staff of six enforcement officers and one intern currently exist at the site including one warden who oversees and manages all rangers. As identified in the management plan the enforcement staff are at the site regularly and carry out activities that include 1) patrolling to carry out surveillance and enforcement, 2) outreach to users to provide information of rules and regulations, 3) user fee collection, and 4) removal of garbage from the site. The rangers recently began collecting data on infractions occurring within the site to monitor changes over time. The rangers patrol the site on a daily basis but are unable to carry out night patrols mainly for safety reasons. As mentioned previously, there is an interest to have an enforcement outpost within the cays which would enable rangers to have more full time presence in the site including nights. Funding for proper infrastructure was noted as the main barrier.

#### **7. Boundaries (Tier 2)**

Rationale: Clear boundaries and a zoning plan are described in the management plan. The zoning plan has several different use areas including, a protection zone, a buffer zone, a management zone, anchoring and mooring zones, and a wind-surfing zone. The management plan also calls for conservation exclusion zones which would limit all activities to ensure resource protection of specific areas. These areas have been approved as official zones. A map including site boundaries is shown outside the office building on Union Island, and brochures have been developed to describe the zones. There are no markers in the water demarcating various zones however. Managers mention that most visitors are repeat visitors and therefore tend to know the various zones (e.g. anchoring, mooring).

#### **8. Bio-physical Monitoring (Tier 2)**

Rationale: The TCMP carries out regular bio-physical monitoring of the site using Reef Check methodology. Efforts are made to monitor three times per year and it has been conducted at least annually since 2005. The site has a biologist on staff and four rangers have recently been re-certified in Reef Check methods to support further monitoring efforts. Data is being analyzed at the site but has not yet been used to adapt management activities. This information will be used through the process to revise the current management plan. They also recently began a turtle tagging and monitoring program and carry out regular surveys of turtle nesting areas during nesting season, through night patrols. Terrestrial habitat mapping has also occurred every two years. In the past, the staff were able to carry out water quality sampling but are no longer able to access the lab to analyze results. However, plans are in place to get equipment for data analysis at the site office so that data can be analyzed on site.

#### **9. Socio-economic Monitoring (Tier 2)**

Rationale: While socio-economic assessments have been carried out in the past, it has been limited and is not part of an on-going program. However, visitor use information is collected on a regular basis which includes, length of stay, and where they are from. Baseline information was collected about local stakeholders as part of the OPAAL project, but there have not been any follow up socio-economic monitoring activities. Additionally, the site has used had surveys carried out in the past using the SocMon methodology but does not have the capacity (skills & knowledge) to carry out further assessments without outside support. Therefore regular socio-economic monitoring is not being collected to understand the impacts of, and level of support

for site management by local stakeholders. The site has identified an interest in training for staff on socio-economic monitoring to be able to carry out this work on their own.

#### **10. MPA Effectiveness Evaluation (Tier 3)**

Rationale: The OPAAL project included a three-part monitoring program (prior to beginning, middle, and end) to determine project effectiveness at improving site management and stakeholder opportunities to benefit from site management. Since 2006 the site has been measured twice. Information from the second assessment was used to adapt management activities. For example, the site is currently developing a database to house information regarding infractions based on these results. Additionally, in 2007, site staff were trained by Centre for Resource Management and Environmental Studies (CERMES) from the University of the West Indies, Cave Hill campus to measure a set of 16 indicators relating to biophysical, socio-economic, and governance conditions. The protocol was based on “How’s your MPA doing?” The site currently uses a management scorecard to measure effectiveness. Additionally, the management plan identifies specific indicators that should be measured and evaluated on an annual basis to understand MPA effectiveness. This information has not yet been used to fully adapt management activities and revise the management plan.

#### **11. Stakeholder Engagement (Tier 2)**

Rationale: Stakeholders are involved in implementing some management activities that occur at the site. For example, a recent turtle assessment was carried out that including support from local stakeholders. Management did express interest in fostering stakeholders understanding that they have a role to play and having them involved in management more frequently. They also mentioned that the composition of the board is partially made up of local stakeholders and therefore involved in decision making for the site. Improvement in site capacity could be made here.

#### **12. Financing (Tier 3)**

Rationale: A user fees system has been set up and is being implemented to fund the site management. These fees are based on an entry fee per person and a flat mooring fee which are collected in various ways; 1) at custom entry points, through local business operators who take visitors to the site, 3) at the TCMP office on Union island, and 4) directly by rangers who patrol the site and collect fees. Funds collected through these fees go directly into the management of the site for staff, buoy maintenance, and equipment. In addition to these funds, the TCMP is looking developing a fuel station on Union Island that provides high quality fuel. Profits from this operation would also support site management. A business plan has been develop for this project and the fuel station is expected to be operational this year.

#### **13. Outreach and Education (Tier 2)**

Rationale: While the TCMP office does include a visitor’s center with information about the site, managers expressed an interest and need to improve outreach and education activities. The major challenge in implementing activities has been in hiring a full time staff to do this work. They mention both limitations in finances and skills to develop effective outreach programs. They also specifically mentioned the need to reach out to local schools and stakeholders. A communications plan was developed through the OPAAL project and some of these activities have been implemented but there is an interest to carry out more activities.

#### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Managers were confident that stakeholders were aware of how conflicts could be resolved in the TCMP. The management of the site has a well-recognized and accessible presence in the area with both an office on Union Island and rangers on the water. When conflicts among users occur, TCMP staff ask them to come to the office separately to express their concerns. The staff gathers both sides of the conflict and works to reach a solution.

**15. Climate Change Resilience (Tier 2)**

Rationale: The skills and knowledge of how to incorporate climate change resilience principles into site management was identified as an area where capacity building was needed. Resilience to climate change has only recently been recognized as an area that needs to be developed further and therefore more technical support and training on these principles and strategies is needed.

**16. Alternative Livelihoods (Tier 3)**

Rationale: Through the OPAAL project, extensive work was done to carry out a baseline assessment of local stakeholder dependence on site resources and to develop alternative livelihood projects. Through this project, several alternative livelihood activities have been implemented to help provide sources of employment and business opportunities allow for sustainability and benefit from conservation efforts. These included workshops and programs to train small business operators on activities such as water taxi operations and beach vendors.

**17. Fisheries Management (Tier N/A)**

Rationale: Site management did not feel that a fisheries management plan was applicable to the area because it is mainly a no take site. However there is one zone within the site located on the west side of the island Mayreau that allows fishing within standard government fishing regulations. This area was designated as part of the TCMP mainly to provide protections to a wreck in the area that is used for diving.

**18. Integrated Coastal Management (Tier 2)**

Rationale: Most of the islands within the TCMP are uninhabited and are managed by the TCMP office. However, the island of Mayreu is inhabited and not under TCMP management authority. A buffer zone has been designated around Mayreu which is made up of an area that is 100yds of coastline from the water and does not allow any construction. Coordination between land owners and TCMP and residents is limited.

**19. Sustainable Tourism (Tier 3)**

Rationale: The OPAAL project also looked at sustainable tourism of the area and the zones developed for the site are based on this information.

**20. Organizational Management (Tier 3)**

Rationale: The management plan identified the need for various staff members and specific positions and skills needed to fulfill the plans activities. Most of these positions have been filled and managers are confident in the ability of staff to carry out management activities. The site managers identified the need for a staff to focus on outreach and education activities as a priority for staffing however given additional funds are obtained.

**21. Partnerships/Coordination (Tier 3)**

Rationale: The Management Board is made up of representatives of various government agencies and local stakeholder groups. This board has legal authority to make decisions for the site. When assistance is needed outside the Board organization capacity, they reach out to appropriate groups. For example, when terrestrial mapping was needed, they worked with the Forestry Department to support this activity.

## **22. Economic Valuation (No)**

Rationale: Economic valuations have only been carried out for the broader St. Vincent and the Grenadines, and the TCMP was not directly involved in the project. They are interested in having this information however.

## **23. Rapid Response Protocol/Team (No)**

Rationale: The TCMP does not have a rapid response team and/or protocols developed and are dependent on the coast guard or other government offices to carry out this work.

## **24. Ecosystem Based Management (No)**

Rationale: While the “ecosystem based management” were not familiar to TCMP management, the OPAAL project and other efforts that helped develop the site management plan were based on the whole system of site including bio-physical, ecological, and social factors.

## **25. Community Support (Medium)**

Rationale: The TCMP felt more could be done to improve support for the park by the local the community and engage them in activities. They said the protected areas are still a new concept and it will take time for them to catch on. There is also a perception by some that the park is made to destroy their livelihoods.

## **26. Government Support (High)**

Rationale: While the government no longer provides funds to the site, the TCMP management felt support was high and supports the management efforts where possible.

### **Management Capacity Priority Needs**

1. **Ecological Networking** (with other MPAs in the whole region)
2. **Climate change resilience**
3. **Outreach and education** (need the person and the skill)

### **Priority Capacity Building Approaches**

1. Technical Support
2. Training
3. Learning exchanges

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.



**References**

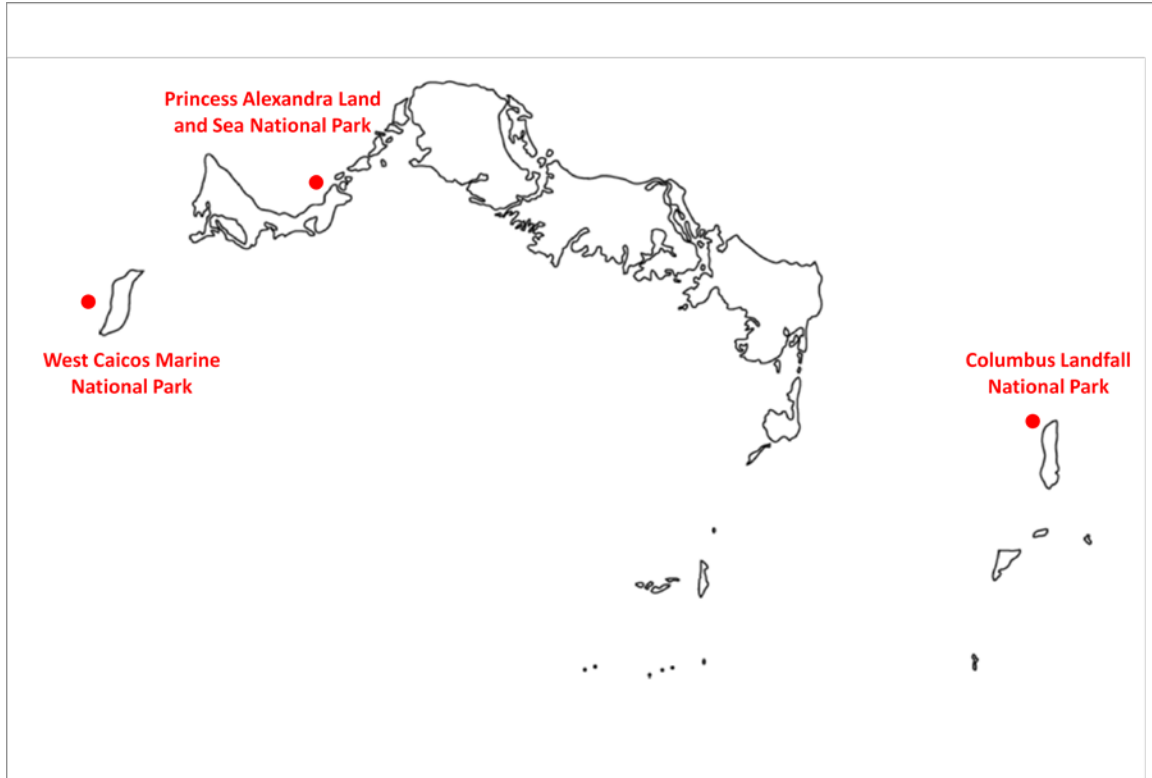
Hoggarth D. (2006) *Tobago Cays Marine Park 2007-2009 Management Plan Revised November 2007*. Draft updated to include OPAAL Baseline Studies and related documentation. Prepared for the Organisation of Eastern Caribbean States (OECS) Environment and Sustainable Development Unit (ESDU), St Lucia.

## Turks and Caicos Islands

**Dates of Interviews:** March 7-11, 2011

**Interviewer:** Meghan Gombos

**Agencies/Organizations Interviewed:** Department of Environment and Coastal Resources, TCI Reef Fund, and Big Blue Tours.



## Columbus Landfall National Park

**Name:** The Columbus Landfall National Park (CLNP)

**Country:** Turks and Caicos Islands, British Overseas Territory

**Year Established:** 1992

**Size:** 1280 acres (5.18 km<sup>2</sup>) of sea from the high water mark to the 100m depth line of the west coast of Grand Turk.

**Management Agency:** Department of Environment and Coastal Resources (DECR)

**Site Resources:** The reef system of the CLNP is a fringing reef system that begins at depths of 5 and 15 meters and is characterized by a long reef crest that extends north and south bordering the edge of a vertical drop off where coral are found down the gradient to some 60- 80 m (Campbell et. al, 2006).

**Site Uses:** The primary users of the site are tour operators and cruise ship excursions. Diving is the predominant activity in the site. A commercial shipping port is also located with the boundaries of the site.

**Threats:** Primary threats include illegal fishing, land based development and pollution, marine traffic and pollution.

**Site Contact:** Director, Department of Environment & Coastal Resources, phone: 649 946 4017

**Other Contacts:** The Turks and Caicos Reef Fund has recently been established as an NGO with the mission "to help preserve and protect the marine environment of the "Beautiful by Nature" Turks and Caicos Islands". The Reef Fund works closely with the DECR to implement projects that meet common goals. In addition, Reef Fund is aimed at fundraising for projects in which 85+% of all funds raised would support marine conservation projects. This newly formed and active NGO provides an excellent venue for collaborative partnerships with stakeholders in carrying out MPA management activities in the TCI.

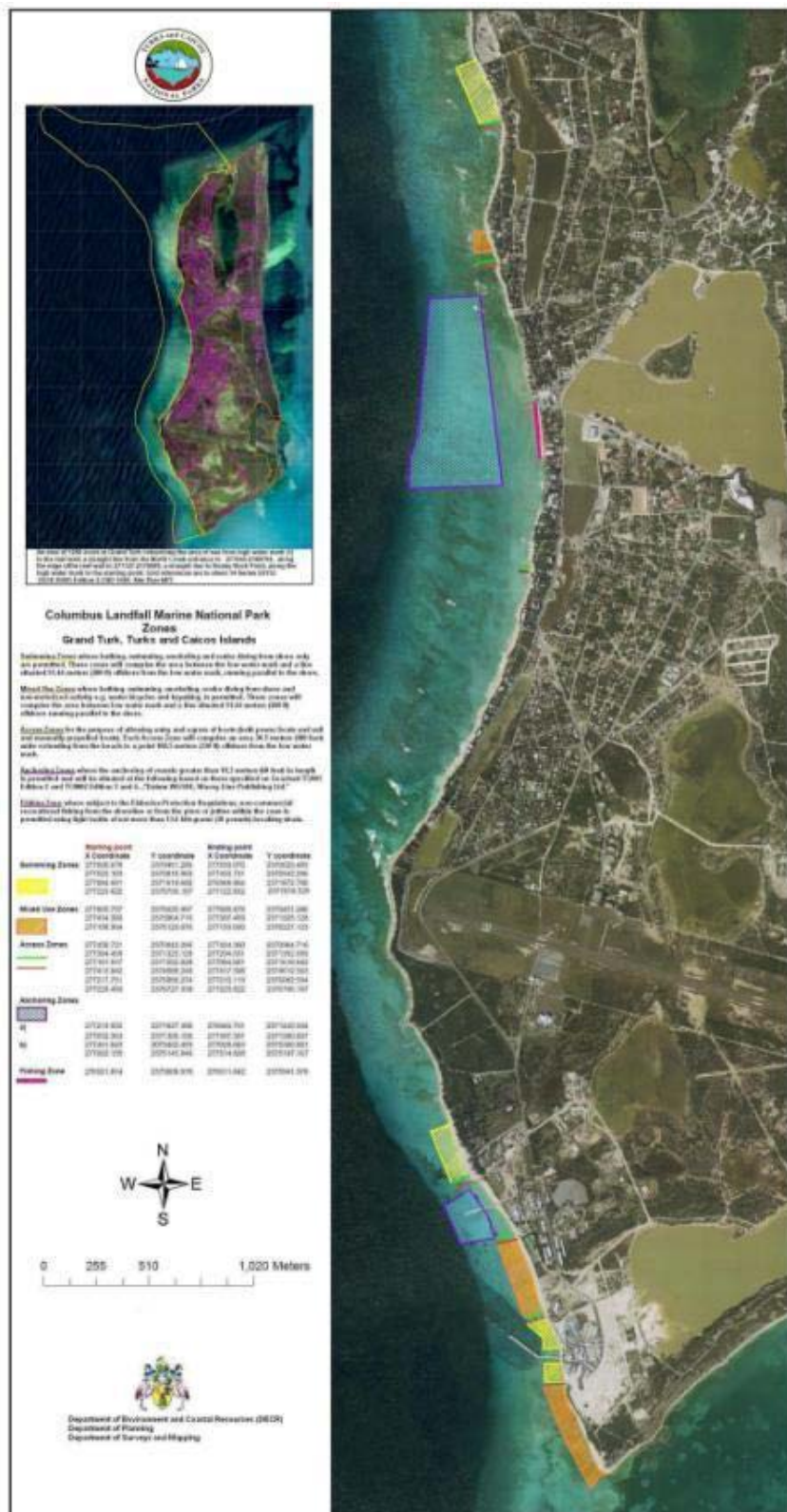


Figure 36 Map of The Columbus Landfall National Park

## TURKS AND CAICOS ISLANDS

Question	Relevance of Site Objective to Designation Purpose
	<p>All 33 sites in the Protected Areas System in the Turks and Caicos Islands (TCI) were designated for the following:</p> <ul style="list-style-type: none"> <li>• so that the habitats incorporated within the protected areas may be enjoyed by residents and visitors to the country,</li> <li>• that their quality may sustainably underpin economic ventures linked to the protected areas that fall within “conforming use” criteria,</li> <li>• that species and habitats representative of the country might be protected for future generations,</li> <li>• that species and habitats particularly sensitive to human intrusion may be protected, and</li> <li>• that sites of historic or cultural significance may be both conserved for posterity as well as opened up to public view.</li> </ul>

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	Ecological Network Development			x
4	Governance			x
5	<b>On-site management *</b>		x	
6	Enforcement		x	
7	Boundaries			x
8	<b>Biophysical Monitoring *</b>		x	
9	Socioeconomic Monitoring		x	
10	MPA Effectiveness Evaluation		x	
11	Stakeholder Engagement			x
12	Financing		x	
13	<b>Outreach and Education *</b>		x	
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change		x	
16	Alternative Livelihoods	x		
17	Fisheries Management	x		
18	Integrated Coastal Management		x	
19	MPA Sustainable tourism			x
20	Organizational Management		x	
21	Partnerships/Coordination		x	
	<b>Assessment Area</b>	<b>YES</b>		<b>NO</b>

22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management	x		
<b>ENABLING ENVIRONMENT</b>				
	<b>Assessment Area</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
25	Public Support		x	
26	Government Support		x	

\* denotes identified priorities for capacity building

## **2. Management Planning (Tier 3)**

Rationale: A management plan was written for Columbus Falls National Park and three other protected areas around the island of Grand Turk. The plan was approved in 2006 and outlines immediate and long-term management activities needed to ensure sustainability of these protected areas around Grand Turk. It is aimed at fulfilling a goal of resource conservation, sustainable use, education and scientific research. This plan is still valid and being implemented. Many recommendations in the plan have already been implemented but there are some activities that have proved more challenging because they require on-going maintenance or funding (e.g. mooring systems, and staffing).

## **3. Ecological Networking (Tier 3)**

Rationale: The CLNP falls within the TCI Protected Areas System (PAS). The PAS consists of 33 protected areas (both land and marine), and these sites were selected through a process which occurred first in 1969/70 and then again in 1986. In 2006, a "Review and Re-Assessment of the TCI Protected Areas System" occurred by Nautilus Consultants Ltd. This report was aimed at reviewing the PAS in terms of both ecological and socio-economic benefits to the TCI, both of which were goals of the original establishment of the system. To do so Nautilus Ltd reviewed the original criteria and site selection for the system, analyzed the current system, and made recommendation on how to further maximize economic benefits of the sites while preserving and conserving natural heritage of the TCI. While reviewing the selection process for the PAS, they revealed criteria that included economic, natural, and historical factors. The criteria under the natural category included "ensure that the system incorporates sites representative the diversity of island habitat, that these are represented at a relevant (for conservation purposes) scale, that fragile ecosystems / species are protected, and that species / habitats particularly sensitive to human intrusion are protected;" (Carleton and Hambrey, 2006). Therefore, while the PAS was designed over 30+ years ago, it was designed on many factors that today would be considered to support an ecological network. Additionally, the management plan for the CLNP also includes two other sites on the island, which are ecologically linked to the CLNP and make up a sub-network of sites in the area.

## **4. Governance (Tier 3)**

Rationale: In 1992, the National Parks Order legalized a system of National Parks and Protected Areas under the framework of the National Park Ordinance (No. 11 of 1975). This law established areas (land and marine) including 11 National Parks, 11 Nature Reserves, 4 Sanctuaries, and 7 Areas of Historical Interest. In 1992, National Parks Regulations were also enacted under the Ordinance, which define a clear and extensive set of regulations for all

national parks including CLNP. Among these include prohibitions of taking and/or destruction of any plant or animal from the park without a permit or outside of a fishing zone. Penalties for infractions are also outlined in the Ordinance and currently used today. These laws provide the legal framework for the management plan for the CLNP. They also provide the framework for the development of a zoning scheme developed by the DECR. In 2009, the most recent zoning scheme was gazetted by DECR to implement revised zones based on experience and stakeholder information.

#### **5. On-Site Management (Tier 2)**

Rationale: The CLNP is located along the entire west coast of Grand Turk which is a very small island. Therefore the DECR office on Grand Turk is located very close to the park and can be considered on-site management. While DECR staff are located on-island and adjacent to the park, staff numbers are limited and responsibilities are extensive. Additionally, the Parks Managers position, which would be responsible for overseeing management, revising plans, and other core management duties is currently vacant. Given the recent economic downturn and changes in the political structure of the TCI government, the ability of DECR to fill this position is challenging at best. In the absence of a Parks Manager, in addition to other key protected area positions, DECR staff on hand are managing the park by default. Lack of these critical staff positions are noted as the biggest challenge to the DECR in effectively managing the site.

#### **6. Enforcement (Tier 2)**

Rationale: Conservations Officers within the DECR are responsible for enforcing several laws and carrying out various activities both within and outside the protected areas. These include enforcing protected areas, fisheries, and pollution regulations, capturing information on fisheries landings, and beach patrols. Given that there are only four conservation officers on Grand Turk and their duties are divided among these various activities, the enforcement of the CLNP is inconsistent. Local dive operators noted that illegal fishing was the greatest threat to the site for this reason and would like to see increased surveillance and enforcement. It was also noted by DECR management, that while enforcement officers are effective and are able to win cases in court, additional training could be useful due to the large workload and skills required as well as staff turnover. As in most small islands, enforcement officers face the difficult task of prosecuting people within their own community.

#### **7. Boundaries (Tier 3)**

Rationale: The boundaries and zones within the site have been clearly defined in both law and regulations. Revisions to the original zoning scheme for the CLNP occurred in 2009 based on experience of user needs. The new zones were made legal through an amendment to the law. Any changes that are made to site boundaries and zones are captured with GPS and shared with the public mainly through public meetings and the website. Signs have also been used in the past but over time many signs have been lost or damaged and need to be replaced. Boundary information for the CLNP can also be found on the website but site managers noted a need to develop more outreach and education materials to share this information with stakeholders and the general public. Site management also noted the need for more boundary markers in the water to help users identify when they enter and exit the park.

#### **8. Bio-physical Monitoring (Tier 2)**

Rationale: Specific bio-physical monitoring parameters are defined within the management plan for the CLNP and include beach profiles, microbiological quality of beaches, coral reef

community structure and related water quality. Many of these parameters are currently being monitored on a fairly regular basis (as able by staff time and resources). Water quality monitoring is carried out every month through methodology that meets standards for the “blue flag” program aimed at ensuring safe bathing water for tourism. Additional water quality monitoring is conducted every three months to collect parameters beyond bathing safety standards. Beach profiling is being carried out regularly to understand changes in the coastline over time. Reef Check is the primary methodology used to capture data on coral reefs and associated marine life. Reef check monitoring is carried out every one to two years. The management plan also lays out a proposed framework for carrying capacity for specific sites within the CLNP. The numbers identified in the plan were based on the Florida Department of Environmental Protection Division of Recreation and Parks guidelines for visitor carrying capacity. However, there is not enough staff capacity to monitor the sites to the extent needed to determine if these capacity numbers are appropriate to minimize negative impacts to ecological systems. Site managers felt that while they would like to do more, they are understaffed and are not able to carry out monitoring activities of all the parameters identified in the management plan. The information being collected now through these monitoring programs are sufficient to inform management decisions mainly because they did not feel there are severe threats occurring in site. They specifically mentioned a need to improve assessments and monitoring of fisheries within the site. They also mentioned a need for technical support that can carry out rapid assessments that inform effectiveness of conservation measures. Finally, DECR is looking into partnering with a new local NGO, TCI Reef Fund, to implement video monitoring to collect further data within the site.

#### **9. Socio-economic Monitoring (Tier 2)**

Rationale: Dive statistics are collected regularly through the dive operators who provide this information to the DECR. This information has been used to assess if specific sites are over-used. When management believes a site is receiving too many visitors they will ask tour operators to use different sites. There have been no socio-economic assessments or monitoring of local stakeholders to understand knowledge, attitudes, perceptions, impacts of, or support for management actions. This was noted as an area that could be improved.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: There is not a standardized evaluation method being used at the site to assess MPA effectiveness. Also, given the challenges in staffing to carry out bio-physical and socio-economic monitoring it would be challenging for the site to regularly evaluate effectiveness of conservation measures. They noted an interest in technical support to help carry out rapid assessments that could provide information on MPA effectiveness. However, they also recognized that as an agency who works closely with local stakeholders, they are adaptively managing the site based on the data they do collect, as well as informal discussions and experience. Through this process they often change management direction based on learning’s. For example the zoning scheme was revised after several years of experience and informal assessments of what was working and what needed to be changed to better suit the situation.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: Stakeholders were regularly involved in the conception of the current management plan which included various stakeholder meetings with water-sport operators, fishermen, and cruise ship industry representatives. Additionally, there is a good amount stakeholder



involvement in management activities, especially through partnerships with tour operators. These operators collect dive statistics, report infractions to DECR, and are very involved in mooring buoy installation and maintenance. This relationship is informal because it is a small community and it is felt there is not an interest or need to formalize a stakeholder committee. Meetings are held with various stakeholders on an ad hoc basis when needed to either disseminate or collect information on various management activities.

## **12. Financing (Tier 2)**

Rationale: Financing for the management of the national park is currently inconsistent. In 2001, a Conservation Fund was established and financed through a 1% increase in the accommodation tax. These funds were put into a separate fund than the general treasury and were used to provide sustainable financing for protected area management. Additionally, some of these funds were provided in the form of small project funds and were able to be easily spent for specific project purposes. Unfortunately with the recent economic downturn and changes in the political structure of the TCI government, the Conservation Fund has been ceased, severely inhibiting the DECR from carrying out core duties. Currently the annual recurrent funds for the department are not sufficient to cover infrastructure, staff positions, and the various management activities needed. The current government structure and spending limitations are also inhibiting the hiring of core staff positions that have been vacant for an extended period of time including a Park Manager. This lack of implementation of the Conservation Fund is particularly unfortunate because, although the DECR generates money through permit and mooring fees, these funds are put into the general treasury and not provided back into management for protected areas. This is also frustrating for tour operators and stakeholders who pay these fees, as they do not see the funds go directly back into the park management (e.g. mooring maintenance)

## **13. Outreach and Education (Tier 2)**

Rationale: There are some outreach and education activities that occur for the CLNP but the education officer position has been vacant since 2008 and therefore limits these efforts. Due to the positive relationships with stakeholders, in particular tour operators, DECR relies heavily on them to carry out outreach (including taking out school groups to the site). However, they are not able to guide what information is being provided through this approach and are not able to offer materials to support dissemination of key messages. Additionally the rotation of staff within these operations is also a concern as it's difficult to know if they understand the park regulations and management objectives. The DECR is very interested in the development of outreach materials that could be provided to tour operators to use during their excursions, and also to provided to the general public.

## **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: A formal conflict resolution mechanism is not used or needed within the Turks and Caicos. Managers feel that stakeholder groups know that the DECR is the management entity that handles any user conflicts within the site. Stakeholders address complaints to the DECR office through informal communications including calls, visiting the office, or passing on the street. The DECR will mediate the any conflicts and enforce regulations if an act involves infractions.

## **15. Climate Change Resilience (Tier 2)**

Rationale: Climate change was considered when developing the management plan in 2006 and specific strategies are included to reduce impacts from climate change over time. The main strategies include abatement of existing man-made threats to coral reefs to improve resilience. Other strategies are related to the other protected areas of the Grand Turk and include actions such protecting areas to allow for mangrove retreat inland due to sea level rise. As such, the site has taken into consideration some factors related to climate change resilience both in the site and in important ecosystems linked to the site. Additionally there are a couple projects that involve artificial reef development and reef restoration. The first project is “Biorock” which involves collecting and relocating reef fragments from areas that have been damaged or are under threat and placing them onto an artificial substrate that is then subjected to a low voltage electric current. These reefs have been shown to grow faster than natural reefs and be more resistant to stress and bleaching. Additionally, reef balls have been used to support artificial reef development and restoration. Site management felt this could support long term management of climate change impacts by growing corals that are more resilient and providing ways to restore damaged reef systems.

#### **16. Alternative Livelihoods (Tier 1)**

Rationale: This NCLP was established in 1992 and at the time of designation until present there has not been a socio-economic assessment of how implementation of rules and regulations impacted local stakeholders. It is understood that the stakeholder group that was negatively impacted by the site designation is the fishermen. However, the extent of the impacts is unknown. The perception by site management is that because the site has been in existence for almost 20 years, most fishermen at this point have accepted the site regulations, have continued to fish but have moved to locations outside the boundaries of the park. As such, alternative livelihoods have not been developed as part of site management. Local tour operators noted that illegal fishing is still occurring because it is easily accessible and most fishers go through the park to get to fishing grounds. In such cases where catch is poor outside the boundaries, it is easy to fish on the way back to shore placing a threat to the site resources. Finally, many fishermen are fishing for deep water snappers just outside the park boundaries and have requested that mooring buoys be placed in the park to allow them to drift outside the boundary to fish. This was considered but proved too difficult for both logistical and enforcement reasons.

#### **17. Fisheries Management (Tier 1)**

Rationale: An assessment of the fisheries has not been conducted for the CLNP. Site managers identified a need for this information and are interested in technical support to carry this out (including conch and lobster). However a fisheries management plan is not-applicable to this site as fishing is not allowed except for in one zone with very strict rules on methods and access.

#### **18. Integrated Coastal Management (Tier 2)**

Rationale: There is a lack of coordination with environmental health and planning agency who are aimed at addressing land based threats to natural resources. The main reason for this is that the mandates are very defined and separates the two agencies activities. While there is a sincere interest to partner more there has not been enough capacity in both agencies to coordinate efforts. It is hoped that if more staff are brought back on board, there can be a pollution task force such as one that was formed in Providenciales which can collaboratively address issues of land based threats to the marine environment.

**19. Sustainable Tourism (Tier 3)**

Rationale: The management plan was developed with the aims to balance sustainable use of the CLNP and natural resource protection. Through the specific efforts of zoning design, regulations, mooring buoys, and carrying capacity, the site is carrying out sustainable tourism practices. On-going maintenance of infrastructure and monitoring of carrying capacities proves challenging with lack of funds and staff capacity but is needed to understand effectiveness of these actions. Additionally, a report was carried out for the DECR in 2005 to determine businesses opportunities that could benefit the local population while not undermining social and ecological values of protected areas in the TCI. This document provides a framework for developing sustainable tourism options that utilize protected areas. Some of these options have been carried out while others could be options for the future.

**20. Organizational Management (Tier 2)**

Rationale: The greatest challenge currently facing the management of the CLNP is the limited staff at the DECR. As mentioned previously, the recent economic downturn in addition to severe changes in the political structure of the TCI government has caused a loss of funding and staff for the agency and their work. Additionally, their pool of local residents who are trained in the field of natural resource science and management is very small. As such, the DECR often seeks people from other jurisdictions to fill critical positions, whom often take a year or two to properly train. However, these positions are often vacated after a relatively short amount of time leaving the position and skill set vacant again. This high turnover rate has impacted the ability of the DECR to adequately manage the site.

**21. Partnerships/Coordination (Tier 2)**

Rationale: Managers of the CLNP have informal partnerships with local stakeholder groups and feel that that is the appropriate approach in the small island. They are not interested in formalizing the partnerships with stakeholders. They did mention an interest in formalizing a Pollution Task Force with other agencies who work on land based development and pollution issues but are not able to do so at this time due to lack of staffing in both agencies.

**22. Economic Valuation (Yes)**

Rationale: An economic valuation was carried out in 2005 for the entire Protected Areas System of the Turks and Caicos Islands. This information is currently being utilized to demonstrate the economic importance of protected natural resources to the government.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: The DECR has specific staff that is responsible for various events or emergencies. Therefore, response is case specific and protocol is followed based on the nature of the event.

**24. Ecosystem Based Management (Yes)**

Rationale: The CLNP management plan was developed using ecosystem-based management principles. Several stakeholder meetings were held to provide input into the plan development. Additionally, the plan was written to include several protected areas around the Grand Turk most of which are linked systems (e.g. mangrove, coral reef)

**25. Community Support (Medium)**

Rationale: Managers noted that stakeholders that benefit from the park such as tour operators have high support for the site protection. They noted also that the general public has not been

involved in planning or management of the site and while they don't interfere with park management, support is low. Therefore the community support is medium.

## 26. Government Support (Medium)

Rationale: As mentioned, recent changes to the political framework of the TCI government have had severe impacts to the DECR capacity. Current challenges in hiring staff and receiving funds to support core activities have been hard for management implementation and morale.

### Management Capacity Priority Needs

1. **Organizational Management** – DECR noted that filling key staff positions (i.e. parks manager, awareness officer) as well as maintaining on-site infrastructure (i.e. moorings, signage) was the number one priority for the management of CLNP
2. **Bio-physical monitoring** – technical support is needed to collect more regular bio-physical data within the site. It was specifically noted that fisheries assessments and monitoring was needed.
3. **Outreach and education** – The need for more outreach and education materials (e.g. signage, brochures, guides) was noted to both increase local support as well as provide stakeholders who are involved in management activities with proper information to share with customers.

### Priority Capacity Building Approaches

1. More staff
2. Technical support
3. Learning exchanges

**Mentoring:** the site managers expressed an interest and willingness to share lessons learned and information on areas of strength.

### References

Campbell J., Fisher T., and Perez, F. (2006) *A Management Plan for the Columbus Landfall National Park and Other Protected Areas in and Around Grand Turk*. Department of Environment and Coastal Resources Ministry of Natural Resources Turks and Caicos Islands.

Carleton, C. and Hambrey, J. (2006) *Review and Re-Assessment of the TCI Protected Area System*. Nautilus Consulting Ltd. Peebles, Scottish Borders, UK.

Government of the Turks and Caicos (1998). *National Parks Ordinance and Subsidiary Legislation*.

Wild, R., McLelland G., and Mulligan J. (2005), *Belonger Business Opportunities in Protected Areas*. EDSA, Norton Consulting, Wood, Blue Dolphin Research.

## Princess Alexandra Land and Sea National Park

**Name:** Princess Alexandra Land and Sea National Park (PALSNP)

**Country:** Turks and Caicos Islands (TCI), British Overseas Territory

**Year Established:** 1992

**Size:** Princess Alexandra Land and Sea National Park occupies an area of about 6532 acres (26.43 km<sup>2</sup>), along the northern coast of Providenciales. Geo-referenced boundaries cover sea from the high water mark out along the “reef wall” which defined by the National Parks Regulations – Section 8 is defined as a 50 fathom depth isobath on the seaward. Additionally, there are three cays; Little Water, Mangrove and Donna with a total area of 450 acres, which have been designated the Princess Alexandra Nature Reserve.

**Management Agency:** Department of Environment and Coastal Resources (DECR)

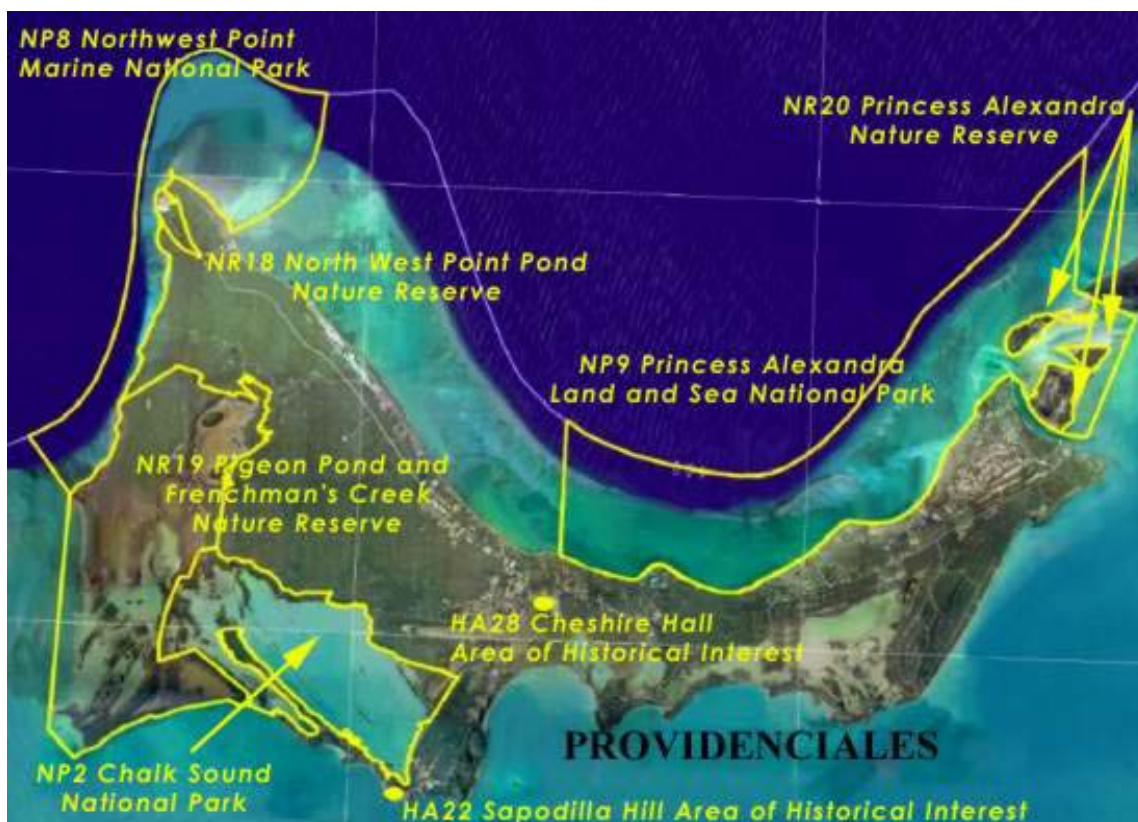
**Site Resources:** The primary habitats represented in the Princess Alexandra Land and Sea National Park (PALSNP) are seagrass beds, barrier and patch coral reefs, sand banks, fringing mangroves, beach and low dunes, and seaside vegetation. Lying with the PALNSP is the Princess Alexandra Nature Reserve (PANR) which is made up of small cays that are primarily mangroves and xerophytic scrub vegetation with palms. (Homer, 2000)

**Site Uses:** The primary users of the site are tour operators who take out dive and snorkel tours. The site is directly off of Grace Bay, which is the main stretch of hotels and tourism development on Providenciales.

**Threats:** Primary threats include, land based development and pollution, recreational over-use, marine traffic and pollution.

**Site Contact:** Director, Department of Environment & Coastal Resources, phone: 649 946 4017

Other Contacts: The Turks and Caicos Reef Fund has recently been established as an NGO with the mission “to help preserve and protect the marine environment of the “Beautiful by Nature” Turks and Caicos Islands”. The Reef Fund works closely with the DECR to implement projects that meet common goals. In addition, Reef Fund is aimed at fundraising for projects in which 85+% of all funds raised would support marine conservation projects. This newly formed and active NGO provides an excellent venue for collaborative partnerships with stakeholders in carrying out MPA management activities in the TCI.



**Figure 37 Map of Princess Alexandra Land and Sea National Park.**

Question	Relevance of Site Objective to Designation Purpose
	<p>All 33 sites in the Protected Areas System in the Turks and Caicos Islands (TCI) were designated for the following:</p> <ul style="list-style-type: none"> <li>• so that the habitats incorporated within the protected areas may be enjoyed by residents and visitors to the country,</li> <li>• that their quality may sustainably underpin economic ventures linked to the protected areas that fall within "conforming use" criteria,</li> <li>• that species and habitats representative of the country might be protected for future generations,</li> <li>• that species and habitats particularly sensitive to human intrusion may be protected, and</li> <li>• that sites of historic or cultural significance may be both conserved for posterity as well as opened up to public view.</li> </ul>

Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	Ecological Network Development			x
4	Governance			x
5	On-site management			x
6	Enforcement		x	
7	Boundaries			x
8	Biophysical Monitoring		x	
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation *		x	
11	Stakeholder Engagement			x
12	Financing *		x	
13	Outreach and Education			x
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change		x	
16	Alternative Livelihoods	x		
17	Fisheries Management			x- NA
18	Integrated Coastal Management			x
19	MPA Sustainable tourism		x	
20	Organizational Management *		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management			x
ENABLING ENVIRONMENT				
	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support		x	

\* denotes identified priorities for capacity building

## 2. Management Planning (Tier 3)

Rationale: A management plan for the Princess Alexandra Land and Sea National Park (PALSNP) was developed in 2000 for the period of 2000 – 2004 and is still being used to guide management efforts of the park. Site managers recognize the need for updating the plan although not all of the activities have yet been implemented due to lack of funds and human capacity. The main barrier to updating the plan is the loss of the Park Manager position in DECR in 2008. Managers also noted that past challenges to updating the plan included a lack of stakeholder engagement to participate in planning. However, over the past couple years,

stakeholder engagement efforts have been underway and there is currently a strong voice in the community to involve in planning.

### **3. Ecological Networking (Tier 3)**

Rationale: The PALSNP falls within the TCI Protected Areas System (PAS). The PAS consists of 33 protected areas (both land and marine), and these sites were selected through a process which occurred first in 1969/70 and then again in 1986. In 2006, a “Review and Re-Assessment of the TCI Protected Areas System” occurred by Nautilus Consultants Ltd. This report was aimed at reviewing the PAS in terms of both ecological and socio-economic benefits to the TCI, both of which were goals of the original establishment of the system. To do so Nautilus Ltd reviewed the original criteria and site selection for the system, analyzed the current system, and made recommendation on how to further maximize economic benefits of the site while preserving and conserving natural heritage of the TCI. While reviewing the selection process for the PAS, they revealed criteria that included economic, natural, and historical factors. The criteria under the natural category included “ensure that the system incorporates sites representative the diversity of island habitat, that these are represented at a relevant (for conservation purposes) scale, that fragile ecosystems / species are protected, and that species / habitats particularly sensitive to human intrusion are protected;” (Carleton and Hambrey, 2006). Therefore, while the PAS was designed over 30+ years ago, it was designed on many factors that today would be considered to support an ecological network.

### **4. Governance (Tier 3)**

Rationale: In 1992, the National Parks Order legalized a system of National Parks and Protected Areas under the framework of the National Park Ordinance (No. 11 of 1975). This law established areas (land and marine) including 11 National Parks, 11 Nature Reserves, 4 Sanctuaries, and 7 Areas of Historical Interest. In 1992, National Parks Regulations were also enacted under the Ordinance, which define a clear and extensive set of regulations for all national parks including the PALSNP. Among these include prohibitions of taking and/or destruction of any plant or animal from the park without a permit or outside of a fishing zone. Penalties for infractions are also outlined in the Ordinance and are currently used today. These laws provide the legal framework for the management plan for the PALSNP.

### **5. On-Site Management (Tier 2)**

Rationale: All of the protected areas in the TCI are managed by the DECR where there are staff responsible for managing all sites, rather than one site specifically. DECR staffs are housed on various islands however and take responsibility for management of certain sites that are within range of that specific office. The PALSNP is located right off Grace Bay on Providenciales, which is also where the DECR office is located. Therefore, this office acts as on-site management for the PALSNP. DECR staff carries out regular beach patrols and are on-site almost every day.

### **6. Enforcement (Tier 2)**

Rationale: Conservations Officers within the DECR are responsible for enforcing several laws and carrying out various activities both within and outside the protected areas. These include enforcing protected areas, fisheries, and pollution regulations, capturing information on fisheries landings, and beach patrols. Therefore, while there is some level of enforcement, it is recognized that there is need for more activity to meet the level of enforcement responsibilities. Managers mentioned a perception by many stakeholders that there is no enforcement activity because the DECR is not able to respond to every report and/or catch all illegal activity within



the parks. Managers mentioned an interest in improving educational enforcement because major infractions are rare. There are currently nine enforcement positions in the Providenciales DECR office but only five of these positions are filled. The DECR owns four patrol/ research boats but mechanical problems have all of them currently docked. Funding problems are inhibiting boat repair and hiring of new staff. When fully functional, the DECR tries to keep a boat on the water every day doing patrols and maintenance (e.g. moorings). The main obstacle to being fully functional is a lack of adequate personnel, and finding qualified people to fill these positions.

### **7. Boundaries (Tier 3)**

Rationale: The boundaries of the PALSNP are clearly defined in the national park ordinance and all boundaries have been captured in GIS files. This information is housed on the website and through outreach materials (e.g. brochures). Additionally, the PALSNP has colored buoy markers to mark various zones of the park such as swimming zones, water ski zones and anchoring zones. There is also signage at the site to explain the various zones to the public. While the boundaries and zones are clearly defined, maintenance of buoys is very expensive and it can be difficult to maintain over time. Budget cuts impact the ability of the DECR to replace lost buoys. Successful efforts have been made to share costs and maintenance with local hotels and tour operators.

### **8. Bio-physical Monitoring (Tier 2)**

Rationale: The DECR is collecting data on bio-physical parameters and using them to inform management decisions, but realize the need to have more data. Currently, information is collected on water quality through the blue flag program, which looks at ensuring safe bathing water for tourists. DECR uses the water quality monitoring as a way to understand potential impacts from the land onto the reef. They would like to be able to have more real time results about water quality data to be able to identify point sources of pollution and address them immediately. Additionally, annual or bi-annual rapid assessments are carried out to look at bio-physical aspects of the coral reef, using a modified AGRRA methods. Beach profiling is also being done to understand changes in the coastline over time. Most of the data that is collected is analyzed within DECR except the water quality data, which is analyzed by a local lab.

### **9. Socio-economic Monitoring (Tier 1)**

Rationale: Socio-economic assessments and monitoring have been noted by site managers as the area where very little has been accomplished and needs improvement. Most monitoring efforts have focused on bio-physical aspects of the protected areas. There has also been some collection of user data at the PALSNP. There was a training carried out in 2004-2005 using the SocMon methodology but assessments have not been done and there is interest to find a more sustainable means of collecting socio-economic information. The DECR is hoping to encourage partnerships with Universities and researchers to help facilitate the collection of various types of information for the parks including socio-economic information.

### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: There is not a plan for MPA effectiveness evaluation for the PALSNP that includes on-going collection of social, bio-physical, and governance factors. In 2003-05, a project was done to establish a baseline of MPA effectiveness. Indicators from this survey were intended to be collected annually to understand management effectiveness of the DECR so there is a foundation for carrying out further work on effectiveness. However, with the absence of critical

staff such as the Parks Manager, this has not been completed. Additionally, DECR management mentioned the need to include stakeholder input into evaluation efforts to provide an objective view. Efforts to include stakeholders into these efforts are also not being done because of lack of staff capacity. The collection and analysis of data that would inform site managers on effectiveness of existing conservation measures and needs for adaptive management was noted as a priority for capacity building. There was an interest in various forms of data including bio-physical, socio-economic and governance information.

### **11. Stakeholder Engagement (Tier 3)**

Rationale: Recent changes in the political framework within the TCI have also impacted stakeholder engagement processes for all national parks. In the past there was a National Park Environmental Committee, which was made up of representatives of various stakeholder sectors. This committee provided guidance and advice to the DECR on various projects. This committee is no longer active due to changes in government structure. The DECR is now working with other stakeholder groups to engage them in both planning and implementation efforts in the parks. There is also a new NGO starting up called TCI Reef Fund that is aimed at supporting projects with a conservation focus. The DECR is working closely with this group to foster engagement in protected area management. Some examples of stakeholder engagement efforts are; providing special permits to stakeholders for lion-fish removal efforts, collaboration with hotels and tour operators to provide funds for infrastructure and maintenance of buoys, etc. While staffing limitations have also made this effort more challenging, improvements in outreach programs have improved interest by stakeholders to get involved and managers are confident in a strong voice and interest to further improve stakeholder engagement efforts.

### **12. Financing (Tier 2)**

Rationale: Financing for the management of the national park is currently inconsistent. In 2001, a Conservation Fund was established and financed through a 1% increase in the accommodation tax. These funds were put into a separate fund than the general treasury and were used to provide sustainable financing for protected area management. Additionally, some of these funds were provided in the form of small project funds and were able to be easily spent for specific project purposes. Unfortunately with the recent economic downturn and changes in the political structure of the TCI government, the Conservation Fund has been ceased, severely inhibiting the DECR from carrying out core duties. Currently, funding for protected area management activities is severely limited and existing funds are hard to use, making daily management extremely challenging.

The annual recurrent funds for the department are not sufficient to cover infrastructure, staff positions, and the various management activities needed. The current government structure and spending limitations are also inhibiting the hiring of core staff positions that have been vacant for an extended period of time including a Park Manager. This lack of implementation of the Conservation Fund is particularly unfortunate because it provided a clear and consistent mechanism for sustainable financing of protected areas management if implemented appropriately. In absence of this funding mechanism, core government funds are not sufficient for management. Although the DECR generates money through permit and mooring fees, these funds are put into the general treasury and not provided back into management for protected areas. This is also frustrating for tour operators and stakeholders who pay these fees as they do not see the funds go directly back into the park management (e.g. mooring maintenance).

### **13. Outreach and Education (Tier 3)**

Rationale: The DECR in Providenciales has focused extensive efforts in improving outreach and education programs over the past few years. This additional effort has been in response to an evaluation that was carried out in the DECR that pointed out that with increasing development on the island, DECR could not fulfill its mission alone. As such, there is currently an existing on-going program that offers activities addressing the national parks. These include school visits (where learning about environment and protected areas are part of the syllabus), an Environmental Club with over 400 members, newsletters that provide information on on-going projects in the parks, and a junior warden program to get youth involved in being environmental stewards. These activities cover all of the protected areas and are not focused on one site specifically but certain activities may be carried out a site (e.g. beach clean ups).

Managers noted that this consistent effort to carry out outreach activities has improved stakeholder engagement in the site. They also mention the challenge in having constant communications with stakeholders but feel it is a priority to continue to improve outreach programs to share more information about the PALSNP to users of the site.

### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Stakeholders are aware of the DECR office as a way to resolve conflict. While there is not a standard approach for how to address conflict, managers felt that issues can be resolved informally. Typically a parks manager or enforcement officer would be in charge of handling conflict among park users/stakeholders and there is an interest in more training in conflict management.

### **15. Climate Change Resilience (Tier 2)**

Rationale: The DECR has taken action to look at climate change resilience principles. The main approach taken to increase resilience is to reduce stressors from other sources in protected areas (including PALSNP). Therefore they are focused on abating pollution, illegal fishing, and recreational over-use threats.

### **16. Alternative Livelihoods (Tier 1)**

Rationale: The PALSNP, like all other National Parks was established in 1992 and at the time of designation until present there has not been a socio-economic assessment of how implementation of rules and regulations impacted local stakeholders. It is understood that the stakeholder group that was negatively impacted by the site designation is the fishermen. However, the extent of the impacts is unknown. The perception by site management is that because the site has been in existence for almost 20 years, most fishermen at this point have accepted the site regulations, and have continued to fish but have moved to locations outside the boundaries of the park. As such, alternative livelihoods have not been developed as part of site management. The extent of illegal fishing has not been studied but there is an understanding that some does occur. Additionally, many people see the park as providing new opportunities that did not exist before the area was a national park. It is believed that some fishermen have benefited by becoming tour operators in the park. Additional opportunities were developed after a report was developed to look at business opportunities within the protected areas, where the PALSNP was used as a case study. Some of these opportunities were developed such as culture market. However, without studies to look at those negatively impacted by the original site designation, it is hard to understand how new opportunities addressed losses.

**17. Fisheries Management (Tier N/A)**

Rationale: A fish assessment has not been completed for the PALSNP but a fisheries management plan is not applicable because there is no fishing allowed.

**18. Integrated Coastal Management (Tier )**

Rationale: The DECR in Providenciales works closely with the planning department through the established permitting process and a monthly planning board meeting. The DECR also has authority to enforce against actions that will have negative impacts to the marine environment. There is a high level of coordination among these agencies and mandates. In the past, there was a Pollution Task Force comprised of representatives of the key polluting institutions, selected technical specialists and senior staff of the government agencies with jurisdiction in the regulation of coastal pollution. This task force was able to work collaboratively to formulate and implement mitigation measures for coastal pollution, focusing primarily on areas within and adjacent to the national park. However given recent setbacks in funding and staffing in all government agencies, the task force has not been able to continue it's collaborative efforts. The DECR also has authority over lands that are within protected area status and therefore can manage threats in these areas.

**19. Sustainable Tourism (Tier 2)**

Rationale: The management plan was developed with the aims to balance sustainable use of the PALSNP and natural resource protection. Through the specific efforts of zoning design, regulations, and mooring buoys, the site is carrying out sustainable tourism practices. On-going maintenance of infrastructure and monitoring of carrying capacities prove challenging with lack of funds and staff capacity but needed to understand effectiveness of these actions. Additionally, a report was carried out for the DECR in 2005 to determine businesses opportunities that could benefit the local population while not undermining social and ecological values of protected areas in the TCI. This document provides a framework for developing sustainable tourism options that utilize protected areas. Some of these options have been carried out while others could be options for the future. This document provides a framework for developing sustainable tourism options that utilize protected areas.

**20. Organizational Management (Tier 2)**

Rationale: The greatest challenge currently facing the management of the PALSP is the limited staff at the DECR. As mentioned previously, the recent economic downturn in addition to severe changes in the political structure of the TCI government has caused a loss of funding and staff for the agency and their work. Additionally, the pool of local residents who are trained in the field of natural resource science and management is very small as most youth pursue careers that are more profitable. As such, the DECR often seeks people from other jurisdictions to fill critical positions, whom often take a year or two to properly train. However, these positions are often vacated after a relatively short amount of time leaving the position and skill set vacant again. This high turnover rate has impacted the ability of the DECR to adequately manage the site.

**21. Partnerships/Coordination (Tier 2)**

Rationale: The DECR has both informal and formal partnerships with various organizations that are interested or active in management of protected areas. There is a formal partnership with the National Trust who manages some of the land areas within some of protected areas

managed by DECR. In the past, a National Parks Environmental Committee was a formalized group of different stakeholder and agency groups. This committee has since become inactive however because changes in government structure. There are also informal partnerships with a newly formed NGO, Reef Fund, and the Hotel Association; to help support various management activities such as mooring buoy maintenance and water quality testing. DECR has expressed interest in pursuing more collaboration with regional entities to share information and resources to help build capacity of site management. For example, The University of the West Indies carried out coral reef assessments with a team of students and DECR provided housing. They would like to foster more of these partnerships in the region.

## **22. Economic Valuation (Yes)**

Rationale: An economic valuation was carried out in 2005 for the entire Protected Areas System of the Turks and Caicos Islands. This information is currently being utilized to demonstrate the economic importance of protected natural resources to governments. This information has proved to be useful in garnering support and resource mobilization in the past.

## **23. Rapid Response Protocol/Team (Yes)**

Rationale: There are experts for specific threats who are in charge of response. Based on the situation, various staff and protocols would be implemented. The head of the department directs staff according to the emergency situation. No formalized protocol in place however.

## **24. Ecosystem Based Management (No)**

Rationale: The PALSNP was established before the principles of ecosystem-based management (EBM) were clearly established. However, at the site level EBM principles were considered by including several cays that protect important coastal habitats and species that are important to ecosystem function. Human dimensions were not considered, however.

## **25. Community Support (Medium)**

Rationale: There is high level of interest and support for the actual site as a protected area and there is a strong interest by stakeholders to be involved in managing the site. However, the perception by managers is that stakeholders would consider management of the site as medium. The DECR expressed an understanding that more needs to be done to build support for management including better maintenance for moorings, better response of enforcement issues, and more stakeholder engagement.

## **26. Government Support (Medium)**

Rationale: As mentioned, recent changes to the political framework of the TCI government have had severe impacts to the DECR capacity. Current challenges in hiring staff and receiving funds to support core activities have been hard for management implementation and morale.

### **Management Capacity Priority Needs**

1. **Organizational Management** – DECR noted that filling key staff positions (i.e. parks manager, awareness officer) as well as maintaining on-site infrastructure (i.e. moorings, signage) was the number one priority for the management of PALSP. They felt that they have the framework to do a lot of things but don't have the man-power to implement. They also express the need to build local (on-island capacity) so as to not have high staff turnover.

2. **MPA effectiveness evaluation**– there is an overall need for more data at the site that can be used to foster further support for protected areas management. This data includes information on bio-physical, socio-economic, and governance factors.
3. **Sustainable financing** - while a sustainable financing mechanism currently exists it is not functional due to changes in government structure. Therefore, financing is also a priority for the PASLP

#### **Priority Capacity Building Approaches**

1. More staff
2. Higher education courses
3. Technical support

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

#### **References**

Carleton, C. and Hambrey, J. (2006) *Review and Re-Assessment of the TCI Protected Area System*. Nautilus Consulting Ltd. Peebles, Scottish Borders, UK.

Government of the Turks and Caicos (1998). *National Parks Ordinance and Subsidiary Legislation*.

Homer, Floyd (2000) *Management Plan For The Princess Alexandra Land And Sea National Park*. Department of Environment and Coastal Resources Ministry of Natural Resources Turks and Caicos Islands.

Wild, R., Mclelland G., and Mulligan J. (2005), *Belonger Business Opportunities in Protected Areas*. EDSA, Norton Consulting, Wood, Blue Dolphin Research.

## West Caicos Marine National Park

**Name:** West Caicos Marine National Park (WCMNP)

**Country:** Turks and Caicos Islands (TCI), British Overseas Territory

**Year Established:** 1992

**Size:** 980 acres (3.97 km<sup>2</sup>) of geo-referenced boundaries that cover sea from the high water mark out along the “reef wall” which defined by the National Parks Regulations – Section 8 is defined as a 50 fathom depth isobath on the seaward boundary of the national park.

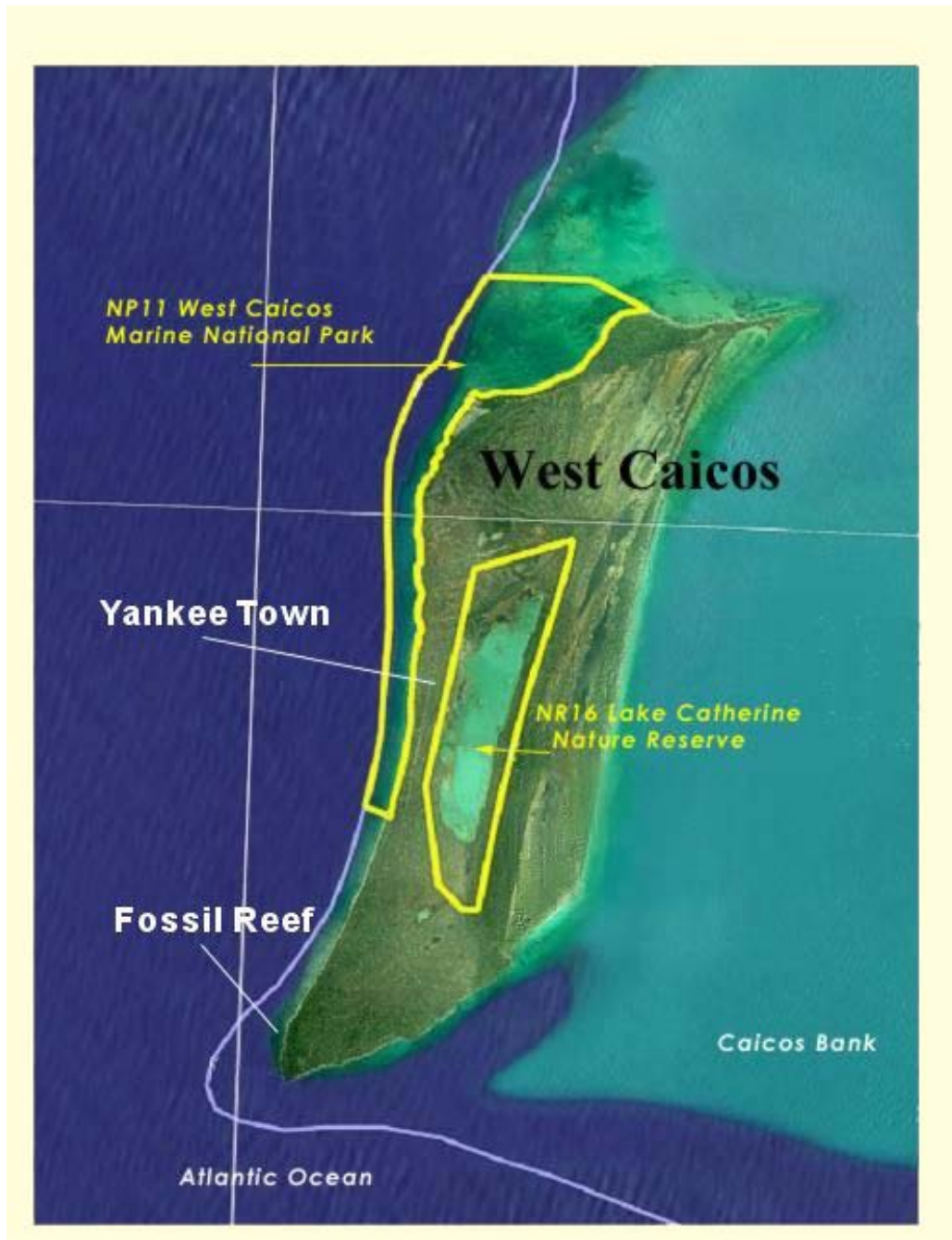
**Management Agency:** Department of Environment and Coastal Resources (DECR)

**Site Resources:** Seagrass beds, fringing reefs, underwater caves systems, archaeological ruins (pottery,) historical industries (sisal) , wetlands, birds

**Site Uses:** The site is almost exclusively used by tour operators who take out dive tours. The site is approximately a 45-minute boat ride from Providenciales.

**Threats:** Primary threats include illegal fishing, recreational overuse, and land based development and pollution from a recent development of a hotel adjacent to the national park. The development of the hotel also provides an opportunity to partner and provide more access and on-site management of the site on a regular basis.

**Site Contact:** Director, Department of Environment & Coastal Resources, phone: 649 946 4017



**Figure 38. Map of Princess Alexandra Land and Sea National Park.**

Question	Relevance of Site Objective to Designation Purpose
	<p>All 33 sites in the Protected Areas System in the Turks and Caicos Islands (TCI) were designated for the following:</p> <ul style="list-style-type: none"> <li>• so that the habitats incorporated within the protected areas may be enjoyed by residents and visitors to the country,</li> <li>• that their quality may sustainably underpin economic ventures linked to</li> </ul>



	<p>the protected areas that fall within “conforming use” criteria,</p> <ul style="list-style-type: none"> <li>• that species and habitats representative of the country might be protected for future generations,</li> <li>• that species and habitats particularly sensitive to human intrusion may be protected, and</li> <li>• that sites of historic or cultural significance may be both conserved for posterity as well as opened up to public view.</li> </ul>
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Question	Purpose	Yes	No
1b	Are the MPA management plan objectives in line with the site designation purpose?	x	

CURRENT MANAGEMENT CAPACITY SUMMARY				
Question	Assessment Area	Tier 1	Tier 2	Tier 3
2	Management Planning			x
3	Ecological Network Development			x
4	Governance			x
5	On-site management		x	
6	Enforcement		x	
7	Boundaries			x
8	Biophysical Monitoring		x	
9	Socioeconomic Monitoring	x		
10	MPA Effectiveness Evaluation *		x	
11	Stakeholder Engagement			x
12	Financing *		x	
13	Outreach and Education			x
14	Conflict Resolution Mechanism			x
15	Resilience to Climate Change		x	
16	Alternative Livelihoods	x		
17	Fisheries Management			NA
18	Integrated Coastal Management			x
19	MPA Sustainable tourism		x	
20	Organizational Management *		x	
21	Partnerships/Coordination		x	
	Assessment Area	YES		NO
22	Economic Valuation	x		
23	Emergency Response	x		
24	Ecosystem Based Management			x
ENABLING ENVIRONMENT				

	Assessment Area	High	Medium	Low
25	Public Support		x	
26	Government Support		x	

\* denote identified priorities for capacity building

## 2. Management Planning (Tier 3)

Rationale: A combined management plan for the West Caicos Marine National Park and the Northwest Point Marine National Park sites was developed in 2000 and is still being used to guide management efforts of the park. These sites were combined for management planning purposes because it was noted that both areas would be used for tourism and ecosystem protection and have identical management issues. Site managers recognize the need for updating the plan although not all of the activities have yet been implemented due to lack of funds and human capacity. The main barrier to updating the plan is the loss of the Park Manager position in DECR in 2008. Managers also noted that past challenges to updating the plan included a lack of stakeholder engagement to participate in planning. However, over the past couple years, stakeholder engagement efforts have been underway and there is currently a strong voice in the community to involve in planning.

## 3. Ecological Networking (Tier 3)

Rationale: The WCMNP falls within the TCI Protected Areas System (PAS). The PAS consists of 33 protected areas (both land and marine), and these sites were selected through a process which occurred first in 1969/70 and then again in 1986. In 2006, a "Review and Re-Assessment of the TCI Protected Areas System" occurred by Nautilus Consultants Ltd. This report was aimed at reviewing the PAS in terms of both ecological and socio-economic benefits to the TCI, both of which were goals of the original establishment of the system. To do so Nautilus Ltd reviewed the original criteria and site selection for the system, analyzed the current system, and made recommendation on how to further maximize economic benefits of the site while preserving and conserving natural heritage of the TCI. While reviewing the selection process for the PAS, they revealed criteria that included economic, natural, and historical factors. The criteria under the natural category included "ensure that the system incorporates sites representative the diversity of island habitat, that these are represented at a relevant (for conservation purposes) scale, that fragile ecosystems / species are protected, and that species / habitats particularly sensitive to human intrusion are protected;" (Carleton and Hambrey, 2006). Therefore, while the PAS was designed over 30+ years ago, it was designed on many factors that today would be considered to support an ecological network. Additionally there is an interest in expanding West Caicos and other nearby sites believed to be ecological linked to the park.

## 4. Governance (Tier 3)

Rationale: In 1992, the National Parks Order legalized a system of National Parks and Protected Areas under the framework of the National Park Ordinance (No. 11 of 1975). This law established areas (land and marine) including 11 National Parks, 11 Nature Reserves, 4 Sanctuaries, and 7 Areas of Historical Interest. In 1992, National Parks Regulations were also enacted under the Ordinance, which define a clear and extensive set of regulations for all national parks including WCMNP. Among these include prohibitions of taking and/or destruction of any plant or animal from the park without a permit or outside of a fishing zone. Penalties for infractions are also outlined in the Ordinance and are currently used today. These laws provide the legal framework for the management plan for the WCMNP.

## **5. On-Site Management (Tier 2)**

Rationale: All of the protected areas in the TCI are managed by the DECR where there are staff responsible for managing all sites, rather than one site specifically. DECR staff are housed on various islands however and take responsibility for management of certain sites that are closest to that specific office. However, there is not on-site management at all times due to the limitations of staffing within the DECR. West Caicos is located about 45 minutes by boat away from Providenciales, where the closest DECR office is situated. As such on-site management is very little other than patrols that occur once every two weeks to check moorings or carry out enforcement regulations. Managers mentioned that while it would be good to increase a presence in West Caicos, they do not need to be there on a daily basis because of its remote location and limitation to users of the area. However, this remoteness also makes the site susceptible to illegal fishing in the site so increased enforcement presence during early morning hours could also be useful. A partnership with the new development happening on West Caicos might support greater ability of on-site management of the WCMNP.

## **6. Enforcement (Tier 2)**

Rationale: Conservations Officers within the DECR are responsible for enforcing several laws and carrying out various activities both within and outside the protected areas. These include enforcing protected areas, fisheries, and pollution regulations, capturing information on fisheries landings, and beach patrols. Therefore, while there is some level of enforcement, it is recognized that there is need for more activity to meet the level of enforcement responsibilities. Managers mentioned a perception by many stakeholders that there is no enforcement activity because the DECR is not able to respond to every report and/or catch all illegal activity with the parks. Managers mentioned interest in improving educational enforcement because major infractions are rare. There are currently nine enforcement positions in the Providenciales DECR office but only five of these positions are filled. The DECR owns four patrol/research boats but mechanical problems have all of them currently docked. Funding problems are inhibiting boat repair and hiring of new staff. For the WCMNP, boats go out as part of the fisheries patrols. DECR is currently working at re-building enforcement capacity. Major obstacles have been getting funds to hire new staff and finding qualified individuals who can carry out enforcement activities.

## **7. Boundaries (Tier 3)**

Rationale: The boundaries of the WCMNP are clearly defined in the national park ordinance and all boundaries have been captured in GIS files. This information is mainly housed on the website and through some outreach materials (e.g. brochures). On-site boundary markers do not exist for the WCMNP mainly because of the expense to implement and maintain these markers. Management does not feel there is a need to place in-water markers in this remote location and feel the outreach to key stakeholder is sufficient.

## **8. Bio-physical Monitoring (Tier 2)**

Rationale: The DECR is collecting data on bio-physical parameters and using them to inform management decisions, but realize the need to have more data. Most of the same monitoring occurs at the West Caicos site as the Princess Alexandra Land and Sea National Park but it occurs less frequently. This consists of water quality monitoring, rapid assessments to look at bio-physical aspects of the coral reef using a modified AGGRA methods, beach profiling, and diver

impact information. Most of the data that are collected is analyzed within DECR except the water quality data, which is analyzed by a local lab.

#### **9. Socio-economic Monitoring (Tier 1)**

Rationale: Socio-economic assessments and monitoring have been noted by site managers as the area where very little has been accomplished and needs improvement. Most monitoring efforts have focused on bio-physical aspects of the protected areas. There was a training carried out In 2004-2005 using the SocMon methodology but assessments have not been done and there is interest to find a more sustainable means of collecting socio-economic information. The DECR is hoping to encourage partnerships with Universities and researchers to help facilitate the collection of various types of information for the parks including socio-economic information.

#### **10. MPA Effectiveness Evaluation (Tier 2)**

Rationale: There is not a plan for MPA effectiveness evaluation for the WCMNP that includes on-going collection of social, bio-physical, and governance factors. In 2003-05, a project was done to establish a baseline of MPA effectiveness. Indicators from this survey were intended to be collected annually to understand management effectiveness of the DECR so there is a foundation for carrying out further work on effectiveness. However, with the absence of critical staff such as the Parks Manager, this has not been completed. Additionally, DECR management mentioned the need to include stakeholder input into evaluation efforts to provide an objective view. Efforts to include stakeholders into these efforts are also not being done because of lack of staff capacity. The collection and analysis of data that would inform site managers on effectiveness of existing conservation measures and needs for adaptive management was noted as a priority for capacity building. There was an interest in various forms of data including bio-physical, socio-economic and governance information.

#### **11. Stakeholder Engagement (Tier 3)**

Rationale: Recent changes in the political framework within the TCI have also impacted stakeholder engagement processes for all national parks. In the past there was a National Park Environmental Committee that was made up of representatives of various stakeholder sectors. This committee provided guidance and advice to the DECR on various projects. This committee is no longer in place. The DECR is now working with other stakeholder groups to engage them in both planning and implementation efforts in the parks. There is currently a new NGO starting up called TCI Reef Fund that is aimed at supporting projects with a conservation focus. The DECR is working closely with this group to foster engagement in protected area management. Some examples of stakeholder engagement efforts are; providing special permits to stakeholder for lion-fish removal efforts, collaboration with hotels and tour operators to provide funds for some of infrastructure and maintenance of buoys, etc. While staffing limitations have also made this effort more challenging, improvements in outreach programs have improved interest by stakeholder to get involved and managers are confident in a strong voice and interest to further improve stakeholder engagement efforts.

#### **12. Financing (Tier 2)**

Rationale: Financing for the management of the national park is currently inconsistent. In 2001, a Conservation Fund was established and financed through a 1% increase in the accommodation tax. These funds were put into a separate fund than the general treasury and were used to provide sustainable financing for protected area management. Additionally, some of these

funds were provided in the form of small project funds and were able to be easily spent for specific project purposes. Unfortunately with the recent economic downturn and changes in the political structure of the TCI government, the Conservation Fund has been ceased, severely inhibiting the DECR from carrying out core duties. Currently funding for protected area management activities is severely limited and existing funds are hard to use, making daily management extremely challenging.

Currently the annual recurrent funds for the department are not sufficient to cover infrastructure, staff positions, and the various management activities needed. The current government structure and spending limitations are also inhibiting the hiring of core staff positions that have been vacant for an extended period of time including a Park Manager. This lack of implementation of the Conservation Fund is particularly unfortunate because it provides a clear and consistent mechanism for sustainable financing of protected areas management if implemented appropriately. In absence of this funding mechanism, core government funds are not sufficient for management. Although the DECR generates money through permit and mooring fees, these funds are put into the general treasury and not provided back into management for protected areas. This is also frustrating for tour operators and stakeholders who pay these fees, as they do not see the funds go directly back into the park management (e.g. mooring maintenance)

### **13. Outreach and Education (Tier 3)**

Rationale: The DECR in Providenciales has focused extensive efforts on improving outreach and education programs over the past few years. This additional effort has been in response to an evaluation that was carried out in the DECR that pointed out that with the increasing development of the islands, DECR could not fulfill its mission alone. As such, there is currently an existing on-going program that offers activities addressing the national parks. These include school visits (where learning about environment and protected areas are part of the syllabus), and Environmental Club with over 400 members, newsletters that provide information on on-going projects in the parks, and a junior warden program to get youth involved in being environmental stewards. These activities cover all of the protected areas and are not focused on one site specifically but certain activities may be carried out on site (e.g. beach clean ups). For West Caicos specifically, outreach has been limited mainly due to the lack of an on-island population. However, a recent hotel development began. While operations have been suspended at the development site due to the economic downturn, DECR sees the development as an opportunity for partnership as the site was marketed as a green development and has shown interest in conservation practices. The needs for more informational materials (e.g. signage) are noted to further improve these efforts.

### **14. Conflict Resolution Mechanism (Tier 3)**

Rationale: Stakeholders are aware of the DECR office as a way to resolve conflict. While there is not a standard approach for how to address conflict, managers felt that issues can be resolved informally. Typically a parks manager or enforcement officer would be in charge of handling conflict among park users/stakeholders and there is an interest in more training in conflict management.

### **15. Climate Change Resilience (Tier 2)**

Rationale: The DECR has taken action to look at climate change resilience principles. The main approach taken to increase resilience is to reduce stressors from other sources in protected

areas (including WCMNP). Therefore they are focused on abating pollution, illegal fishing, and recreational over-use threats.

**16. Alternative Livelihoods (Tier 1)**

Rationale: This WCMNP, like all other National Parks was established in 1992 and at the time of designation until present there has not been a socio-economic assessment of how implementation of rules and regulations impacted local stakeholders. It is understood that the stakeholder group that was negatively impacted by the site designation are the fishermen. However, the extent of the impact is unknown. The perception by site management is that the site was not being used for fishing because it has been a dive site for several years. Also, since the MPA has been in existence for almost 20 years, most fishermen at this point have accepted the site regulations, have continued to fish but have moved to locations outside the boundaries of the park. As such, alternative livelihoods have not been developed as part of site management. The extent of illegal fishing has not been studied but there is an understanding that some does occur.

**17. Fisheries Management (Tier N/A)**

Rationale: A fish assessment has not been completed for the WCMNP but a fisheries management plan is not applicable because there is no fishing allowed.

**18. Integrated Coastal Management (Tier 3)**

Rationale: The DECR in Providenciales works closely with the planning department through the established permitting process and a monthly planning board meeting. The DECR also has authority to enforce against actions that will have negative impacts to the marine environment. There is a high level of coordination among these agencies and mandates.

**19. Sustainable Tourism (Tier 1)**

Rationale: A report was carried out for the DECR in 2005 to determine businesses opportunities that could benefit the local population while not undermining social and ecological values of protected areas in the TCI. This document provides a framework for developing sustainable tourism options that utilize protected areas. Some of these options have been carried out while others could be options for the future. In the WCMNP there have not been any site specific activities implemented to ensure sustainable of tourism activities within the site.

**20. Organizational Management (Tier 2)**

Rationale: The greatest challenge currently facing the management of the WCMNP is the limited staff at the DECR. As mentioned previously, the recent economic downturn in addition to severe changes in the political structure of the TCI government has caused a loss of funding and staff for the agency and their work. Additionally, the pool of local residents who are trained in the field of natural resource science and management is very small as most youth pursue careers that are more profitable. As such, the DECR often seeks people from other jurisdictions to fill critical positions, whom often take a year or two to properly train. However, these positions are often vacated after a relatively short amount of time leaving the position and skill set vacant again. This high turnover rate has impacted the ability of the DECR to adequately manage the site.

**21. Partnerships/Coordination (Tier 2)**

Rationale: The DECR has both informal and formal partnerships various organizations who are interested or active in management of protected areas. There is a formal partnership with the National Trust who manages some of the land areas with some of protected areas managed by DECR. In the past, a National Parks Environmental Committee was a formalized group of different stakeholder and agency groups. This committee has since become inactive however because changes in government structure. There is also informal partnerships/coordination with a newly formed NGO, Reef Fund, and the Hotel Association to help support various management activities such as mooring buoy maintenance and water quality testing. DECR has expressed interest in pursuing more collaboration with regional entities to share information and resources to help build capacity of site management. For example, The University of the West Indies carried out coral reef assessments with a team of students and DECR provided housing. They would like to foster more of these partnerships in the region.

**22. Economic Valuation (Yes)**

Rationale: An economic valuation was carried out in 2005 for the entire Protected Areas System of the Turks and Caicos Islands. This information is currently being utilized to demonstrate the economic importance of protected natural resources to governments. This information has proved to be useful in garnering support and resource mobilization in the past.

**23. Rapid Response Protocol/Team (Yes)**

Rationale: There are experts for specific threats who are in charge of response. Based on the situation, various staff and protocols would be implemented. The head of the department directs staff according to the emergency situation. No formalized protocol in place however.

**24. Ecosystem Based Management (No)**

Rationale: The WCMNP was established before the principles of ecosystem-based management (EBM) were clearly established. At the site level EBM principles have not been considered in design.

**25. Community Support (Medium)**

Rationale: There is high level of interest and support for the actual site as a protected area and there is a strong interest by stakeholders to be involved in managing the site. However, the perception by managers is that stakeholders would consider management of the site as medium. The DECR expresses and understanding that more needs to be done to build support for management including better maintenance for moorings, better response of enforcement issues, and more stakeholder engagement.

**26. Government Support (Medium)**

Rationale: As mentioned, recent changes to the political framework of the TCI government have had severe impacts to the DECR capacity. Current challenges in hiring staff and receiving funds to support core activities have been hard for management implementation and morale.

**Management Capacity Priority Needs**

- 1. Organizational Management** – DECR noted that filling key staff positions (i.e. parks manager, awareness officer) as well as maintaining on-site infrastructure (i.e. moorings, signage) was the number one priority for the management of WCMNP.

They felt that they have the framework to do a lot of things but don't have the manpower to implement. They also express the need to build local (on-island capacity) so as to not have high staff turnover.

2. **MPA effectiveness Evaluation** – there is an overall need for more data at the site that can be used to foster further support for protected areas management. This data includes information on bio-physical, socio-economic, and governance factors.
3. **Sustainable financing** – while the a sustainable financing mechanism currently exists it is not functional due to changes in government structure. Therefore, financing is also a priority for the WCMNP.

#### Priority Capacity Building Approaches

1. More staff
2. Higher education courses
3. Technical support

**Mentoring:** the site has expressed an interest and willingness to share lessons learned and information on areas of strength.

#### References

Homer, Floyd (2000) *A Management Plan for the West Caicos & Northwest Point Protected Areas 2000 – 2004*, Department of Environment and Coastal Resources Ministry of Natural Resources Turks and Caicos Islands.

Carleton, C. and Hambrey, J. (2006) *Review and Re-Assessment of the TCI Protected Area System*. Nautilus Consulting Ltd. Peebles, Scottish Borders, UK.

Government of the Turks and Caicos (1998). *National Parks Ordinance and Subsidiary Legislation*.

Homer, Floyd (2000) *Management Plan For The Princess Alexandra Land And Sea National Park*. Department of Environment and Coastal Resources Ministry of Natural Resources Turks and Caicos Islands.

Wild, R., Mclelland G., and Mulligan J. (2005), *Belonger Business Opportunities in Protected Areas*. EDSA, Norton Consulting, Wood, Blue Dolphin Research.



## Recommendations for Next Steps

1. To ensure that capacity priority needs are supported, it is recommended that CaMPAM gather regional resource agencies to review this report and collectively determine various ways of providing support to meet these needs. As a social network that includes most regional MPA support organizations in the Caribbean, CaMPAM provides the perfect platform for collective strategic planning for the region. Discussions throughout this assessment with various regional organizations indicated that there would be great value and benefit in more collaboration among these groups. This assessment provides an excellent opportunity for regional organizations who work within the countries assessed to clarify roles in which they can provide support, and look for new opportunities to collaboratively address gaps in capacity. This follow-up approach would also instill confidence in country partners that regional organizations are directly supporting needs identified on the ground.
2. There are opportunities in certain sites that are ripe for support and would provide a foundation for regional models. Regional support organizations can find sites/countries where there are strengths in certain areas and work with them to establish “regional models” that could be replicated. For example, The Bahamas has recently passed an amendment to their protected area law that allows for The Bahamas National Trust to train and deputize volunteer enforcement officers. If done right, this volunteer enforcement program could significantly help in addressing a challenge that many sites in the region face (i.e. not enough enforcement staff). This situation provides an excellent opportunity for support to ensure the program is given the resources needed to be successful. Additionally, there is an opportunity to develop a regional model based on this example which might include capturing the steps required to make this program possible as well as lessons learned.
3. Some challenges commonly faced among many sites might be best addressed through a regional approach. This is particularly the case for monitoring (both biological and social). Often times, the challenge in carrying out regular monitoring programs is a lack of staff time and numbers. To address this issue, CaMPAM might consider establishing a “roving” support team that could help develop appropriate biological monitoring protocol for the site, collect data, and analyze the data. This team could be a mixture of monitoring experts and local staff from other sites (as part of a learning/sharing network). This team would work with local site staff in each area to carry out these tasks but provide the additional numbers and expertise needed to complete annual assessments. As well as supporting data analysis and adaptive management options. This approach could allow a smaller amount of resources to hire a few traveling biologists, to help each site collect valuable information on trends to inform MPA effectiveness. The same approach can be carried out for socio-economic monitoring. This approach can also help gather accurate data as often times local perspectives might be withheld from known staff from the management agency. This approach is already being piloted in the Dutch Caribbean states and therefore can provide insights to this model.

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## APPENDIX

### MPA Management Capacity Assessment Gap Analysis

**Introduction:** This gap analysis was done as part of a larger “MPA Management Capacity Assessment” project, an initiative of NOAA Coral Reef Conservation Program (CRCP) in partnership with the Caribbean Marine Protected Area Management Network and Forum (CaMPAM). The project objectives are as follows:

- 4) To review existing information to identify key gaps in MPA management capacity information for countries and MPA sites in the Caribbean Region
- 5) To identify 5 year priority MPA management capacity needs for up to 3 demonstration MPA sites in each of nine Caribbean countries
- 6) To provide key information to CaMPAM about MPA management capacity needs in demonstration sites to guide programmatic planning and services such as training, funding, and technical support.

To fulfill objective 1 of the project, the consultant team carried out a gap analysis of known capacity assessment reports in the region. This was done to inform the approach and methodology needed to complete objectives 2 and 3.

As a first step in the gap analysis the consultant team compiled, reviewed, and prepared an initial gap analysis of existing MPA capacity documents. The purpose of the analysis was to look across regional information to identify gaps, to establish a baseline for this assessment and to understand if needs have changed over time. This analysis also initially aimed at gaining a regional perspective on which countries (and sites) have been most assessed for MPA management capacity, and which have had the least information collected. Additionally, the analysis reviewed which specific capacity components have been captured in previous assessments, and when and what tools have been used to collect the information, to understand the relevance (both in scope and time) of previous efforts to the assessment project. The initial findings of the gap analysis were used to support the selection of countries to carry out the capacity assessment as well as to develop the appropriate methodology.

**Approach:** The gap analysis began with a review of a summary document put together by CaMPAM Executive Team member Emma Doyle, which provided an excellent preliminary overview of existing capacity assessment reports. This document provided summaries about several previous assessments including: year, purpose, geographic focus, and methods. Including the assessments from this summary, the consultant team reviewed a total of 26 documents for the gap analysis. Finally, discussions were held with The Nature Conservancy’s staff in the region about additional MPA management capacity information that has been collected through their program in the past several years. Some of this work, yet not all, has been written in a reports, while in some cases only raw data is available at this time. The consultant team has reviewed the information collected through TNC efforts and will continue to use this information to support implementation of the full capacity assessment and report writing.

The documents reviewed varied greatly in purpose, geographic scope (e.g. site, country, region), methodology, and capacity information collected. As such making broad based comparisons of information is challenging and will likely not provide an accurate analysis. Rather, the information reviewed was broken down by the consultant team into a variety of categories to inform the decision-making process for the larger capacity assessment project (e.g. methodology, capacity indicators, existing capacity information per country). Finally, and most importantly, these existing reports will be used to inform the capacity assessment at the country level, as a foundation for understanding previously identified management capacity needs and assess changes that may have occurred over time. As such, existing reports will be summarized and used to prepare for site visits with MPA managers to foster in-depth, detailed discussions about capacity challenges, needs, and changes where appropriate. It should also be noted that the consultants will continue to collect, review, and build upon documents relevant to the countries that will be assessed through this project and therefore this information will evolve over time.

**Results:** The information presented in Table 1 provides an overview of the documents collected and reviewed for this initial assessment.

<i><b>Table 1: Documents Reviewed</b></i>	
Total number of existing documents reviewed:	26 +
# of documents focused on MPA management capacity	17+
# of documents not focused on MPA capacity but other related topics (i.e. sustainable livelihood programs, threats and challenges to the regions resources, etc.)	9
Methodologies used	RAPPAM, How's your MPA doing, tailor-made
# of documents focused on Caribbean region MPA efforts (not specific to a sub-region of countries)	3
# of documents focused on sub-regional MPA efforts (multiple countries in a sub-region)	2 (both MAR region), 6 non-capacity
# of documents focused on one specific country	8 + 9 (RAPPAM data collected only, no report)

# of documents focused on site specific information	2 (Belize and St. Lucia)
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### ***Existing Capacity Assessment Methodology:***

Protected areas assessments have been conducted in the past using many different methods that vary considerably in their scale, depth, duration, and data collecting methods. In general there are four types of assessment methods: 1) in depth, evidence-based, 2) comprehensive system-wide peer based, 3) rapid expert-based scorecard, and 4) categorical assumption-based methods. In the system-wide approach methods for example, each protected area within a given system is assessed, typically in participatory workshops, and the results for each indicator are peer-reviewed for consistency and accuracy. This method is the most frequently used approach in the Caribbean region through the World Wide Fund for Nature's Rapid Assessment and Prioritization of Protected Areas Management, RAPPAM. The RAPPAM method includes over 100 indicators and is aimed at understanding management effectiveness of systems of protected areas.

As stated above, several methodologies were utilized including, RAPPAM, How's your MPA doing?, and several self-designed assessment tools. Additionally, the new NOAA Coral Reef Conservation Program MPA checklist was reviewed as a tool that has been used to assess MPA management capacity in priority sites within US jurisdictions. Capacity information from the different methods varied greatly. Some assessments included questions that related to MPA effectiveness (i.e. an evaluation of the MPA achieving its stated goals and objectives biological and social). Other assessments focused mainly on MPA management capacity (i.e. the ability of a management agency to effectively manage the site based on skills, knowledge, and resources available). The list of each specific capacity indicator used in various assessments is long, detailed, and potentially duplicative. Therefore, consultants listed only capacity "themes" in this report, as more than one specific indicator can fall under these themes. The following table (2) shows a summation of various capacity themes that have been utilized in one or several assessment methodologies and were considered for the CaMPAM capacity assessment.

<b><i>Table 2: Summary Of Capacity Themes From Existing Assessments</i></b>	
<b><i>Management Planning</i></b>	<b><i>Communications</i></b>
<b><i>Ecological Network Development</i></b>	<b><i>Fundraising/ Grant Writing - Proposal Writing and Reporting</i></b>
<b><i>Governance</i></b>	<b><i>Technical Staff (ecosystem science/management, outreach, GIS, etc)</i></b>

<b><i>On-site management</i></b>	<b><i>Project management (developing work plans, benchmarks, measures of effectiveness, timelines, budgeting, reporting etc)</i></b>
<b><i>Enforcement</i></b>	<b><i>MPA management topics incorporated into educational systems (higher education)</i></b>
<b><i>Boundaries</i></b>	<b><i>Alternative Livelihood Programs</i></b>
<b><i>Biophysical monitoring</i></b>	<b><i>Invasive Species Management</i></b>
<b><i>Socioeconomic monitoring</i></b>	<b><i>Adequate staffing</i></b>
<b><i>MPA effectiveness evaluation</i></b>	<b><i>Adequate equipment</i></b>
<b><i>Stakeholder engagement</i></b>	<b><i>Community/ Stakeholder Support</i></b>
<b><i>Financing</i></b>	<b><i>Threat Assessment</i></b>
<b><i>Outreach and Education</i></b>	<b><i>Biological Significance</i></b>
<b><i>Conflict Resolution Mechanism</i></b>	<b><i>Political Will and Support</i></b>
<b><i>Resilience to Climate Change</i></b>	<b><i>Partnerships and Coordination</i></b>
<b><i>Sustainable tourism and development planning</i></b>	<b><i>Facilitation</i></b>
<b><i>Integrated Coastal Management Activities Incorporate in Planning or Coordinated</i></b>	<b><i>Legal Process for addressing things such as permitting and illegal activities</i></b>
<b><i>Data for planning and management effectiveness (SPAG, connectivity, ecosystem function)</i></b>	<b><i>Capacity Building programs for staff (training, schooling, tech support)</i></b>
<b><i>Organizational Management including strategic planning, equipment management, budgeting, reporting, etc</i></b>	<b><i>Assessment of biological and socio-economic condition (pre-planning)</i></b>

**Country Level Information:**

Information collected through previous assessments varied greatly across the region with some countries being assessed more than others. Additionally the type of information collected in each of these assessments greatly varied. There were two notable efforts that had a standardized approach and method. One was the OPAAL assessment carried out in all of the Organization of Eastern Caribbean States, OECS, which utilized a custom assessment and reviewed individual capacity of personnel at a site to carry out their jobs. This assessment provides an excellent starting point for understanding training needs. The other standardized effort is a RAPPAM project, coordinated by The Nature Conservancy, and carried out in several countries in the Wider Caribbean that received Early Action Grants from the Convention on Biological Diversity. This assessment provides an excellent starting point for understanding capacity challenges and needs within a country protected area system. Information from both of these efforts will be used as the foundation for on-site discussions in countries and sites that the assessment will take place.

Table 3 below provides an initial overview of the countries that have been included in known previous assessments, and how many assessments were carried out in that country. The table does not distinguish if the assessment was carried out for the country specifically or if the country was merely part of a larger “regional or sub-regional” assessment effort.

<b>Table 3: Existing Information per Country</b>	
<b># of capacity documents</b>	<b>Countries</b>
5	St. Vincent and the Grenadines
4	Belize, St. Lucia
3	Grenada
2	Dominica, St. Kitts and Nevis, Antigua & Barbuda, Mexico, Guatemala, Honduras
1	Anguilla, Bahamas, Jamaica
0	British Virgin Islands, Martinique, Aruba, Bermuda, Cuba, Netherland Antilles, Guadeloupe, TCI, Barbados, Cayman Islands, Dominican Republic, Haiti, Montserrat, Trinidad & Tobago, Nicaragua, Costa Rica, Panama, Colombia, Venezuela

After reviewing information from the initial gap analysis and through a process of criteria based selection, the CaMPAM executive team decided on nine specific countries to carry out the assessment at 2-3 specific MPAs in each. These countries are:

1. Bahamas

2. Belize
3. Mexico
4. St. Vincent & the Grenadines AND Grenada (collectively)
5. Honduras
6. Saba & St. Eustatius (collectively)
7. St. Lucia
8. British Virgin Islands
9. Turks and Caicos

Upon finalizing this country selection for the assessment, the consultant team has been collecting further capacity assessment information from these specific countries. The list below provides a list of reports and/or data sets that will be used to provide a foundation for the capacity assessment and on-site discussions for countries selected.

**Table 4: Existing Information per Selected Countries**

**1. St Vincent and the Grenadines:**

- a. St. Vincent and the Grenadines National Protected Areas System Capacity Development Final Draft Plan, 2007
- b. OECS Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment - St.Vincent and the Grenadines Country report, 2007
- c. TNC/ RAPPAM Assessment - St Vincent and Grenadines, 2007
- d. Expansion, Consolidation and Strengthening of MPA Network in the OECS, 2010
- e. CERMES Technical Report No 14: Learning from evaluating MPA management effectiveness, 2006 (specific to Tobago Cays Marine Park)
- f. SVG National Parks and Protected Areas System Plan 2009 – 2014 DRAFT, 2008

**2. Grenada:**

- a. OECS Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment – Grenada report, 2007
- b. TNC/ RAPPAM Assessment - Grenada, 2007
- c. Expansion, Consolidation and Strengthening of MPA Network in the OECS, 2010
- d. Grenada National Protected Areas System Capacity Development Final Draft Plan, 2007

**3. St. Lucia:**



- a. OECS Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment - St. Lucia Country report, 2007
- b. TNC/ RAPPAM Assessment- St. Lucia, 2009
- c. Expansion, Consolidation and Strengthening of MPA Network in the OECS, 2010
- d. Management Effectiveness Assessment Report for Saint Lucia Protected Area System, 2009

#### **4. Belize:**

- a. Recommendations for the Design of the MAR Learning Center Report ; and MAR Project, Learning Center Questionnaire Results, 2005 (Sub-regional assessment)
- b. Línea Base Regional de la Efectividad de Manejo en Áreas Marinas Protegidas en Región del SAM (Regional Baseline on MPA Management Effectiveness in MAR, 2007 (Sub-regional assessment)
- c. A profile of the Hol Chan Marine Reserve (Belize): success and challenges (if Hol Chan is included as a demonstration site)
- d. CERMES Technical Report No 14: Learning from evaluating MPA management effectiveness (if Sapodilla Cayes Marine Reserve is included as a demonstration site)

#### **5. Mexico:**

- a. Recommendations for the Design of the MAR Learning Center Report ; and MAR Project, Learning Center Questionnaire Results, 2005 (Sub-regional assessment)
- b. Línea Base Regional de la Efectividad de Manejo en Áreas Marinas Protegidas en Región del SAM (Regional Baseline on MPA Management Effectiveness in MAR, 2007 (Sub-regional assessment)

#### **6. Honduras:**

- a. Recommendations for the Design of the MAR Learning Center Report ; and MAR Project, Learning Center Questionnaire Results, 2005 (Sub-regional assessment)
- b. Línea Base Regional de la Efectividad de Manejo en Áreas Marinas Protegidas en Región del SAM (Regional Baseline on MPA Management Effectiveness in MAR, 2007 (Sub-regional assessment)
- c.

#### **7. Bahamas:**

- a. TNC/ RAPPAM Assessments - Bahamas, (date unknown)

**8. Turks and Caicos:**

No previous assessment documents have been identified at this time.

**9. British Virgin Islands:**

No previous assessment documents have been identified at this time.

**10. Saba and St Eustatius:**

No previous assessment documents have been collected at this time; however, a recent interview with the Dutch Caribbean Nature Alliance indicated that management capacity has been measured annually for the past five years, and action plans have been developed based on the assessments to fill priority capacity needs. This information will be provided to consultants and reviewed to understand the relevance/need for site visits.

**Conclusions:**

Assessments of management capacity have been conducted previously in several countries of the Caribbean in the past years using diverse methods to capture a wide array of information. Moreover, there seems to be an emphasis on measuring management effectiveness of systems of MPAs or personnel rather than exploring in depth management capacity at specific sites.

Several of the assessments note that the capacity for management many times is affected by institutional settings including available financial resources, decision makers' political will, or levels of staffing. On the other hand, when comparing the different tools, it is noted that not all establish clear baselines or state desired future conditions. This kind of information is necessary for assessing capacity needs.

Additionally, the concept of management capacity in the existing assessments varies widely. Some focus on a knowledge base about different aspects of MPAs and the issues facing their managers, such as the knowledge of ecosystem processes, biophysical characteristics, legal issues, and socio-economic setting. Others focus on cross-cutting skills that managers require in order to make plans, make decisions and implement management practices. For example, decision-making skills, resource prioritization, budget control, project management, adaptive management, stakeholder participation, negotiating skills or conflict resolution. Even personal traits such as accountability, transparency or a participatory management style are included in at least one assessment.

Given the varied methods and focus of existing assessments, the consultants are not able to make any concise statements about specific site or regional priority capacity strengths,

challenges, or needs at this time. However, as stated previously, these existing reports can and will inform discussions and further collection of site specific capacity information to achieve the objectives of the capacity assessment. As such, existing information will also be reflected in the final report upon completion of the site-specific assessments.

### Bibliography

CANARI, 2005. Marine Protected Areas and Sustainable Coastal Livelihoods, CANARI Policy Brief No. 5, January 2005.

CERMES, 2006. Learning from evaluating MPA management effectiveness, Technical Report No 14: 2006.

CERMES, 2009. Best Practices for Marine Protected Areas of the Wider Caribbean Region. Technical Report No. 19 A.E. Banks, M. Miller and R. Mahon. 2009.

CLME, 2007. Thematic Report for the Insular Caribbean Sub-Region, Prepared for the CLME Project by Sherry Heileman, Ph.D. CLME Project Implementation Unit, Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies, Cave Hill Campus, Barbados, April 2, 2007.

IUCN, 2003. The Marine Reserves Regional Enhancement Plan for the Wider Caribbean Prepared by Georgina Bustamante for the World Conservation Union (IUCN) World Commission of Protected Areas - Marine (WPCA - Marine), September 2003.

MBRS, 2006. Línea Base Regional de la Efectividad de Manejo en Áreas Marinas Protegidas en Región del SAM. Presented at 59th GCFI. Oscar Lara. 2006.

OPAAL, 2007. Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment, Kemraj Parsram, February 2007.

OECS, 2007. Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment - St.Vincent and the Grenadines Country report, 2007.

OECS, 2007. Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment – Grenada report, 2007.

OECS, 2007. Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment - St. Lucia Country report, 2007.

SVG National Parks and Protected Areas System Plan 2009 – 2014 DRAFT, 2008

TNC, 2005. Recommendations for the Design of the MAR Learning Center Report ; and MAR Project, Learning Center Questionnaire Results, 2005 (Sub-regional assessment)

TNC/ RAPPAM Assessments - Bahamas, (date unknown)

TNC/ RAPPAM Assessment - St Vincent and Grenadines, 2007

TNC/ RAPPAM Assessment - Grenada, 2007

TNC/ RAPPAM Assessment- St. Lucia, 2009

TNC, 2006. Livelihood Transitions: Towards Sustainable Fishing Communities in the Mesoamerican Reef Region. The Nature Conservancy, April 2006.

TNC, 2006. The Nature Conservancy, Recommendations for the Design of the MAR Learning Center Report, Lucy Gallagher-Freymuth, February 2006.

TNC, 2005. The Nature Conservancy, MAR Project, Learning Center Questionnaire Results, Lucy Gallagher-Freymuth, December 2005.

UNEP-CAR/RCU, 2007. Training of Trainers Programme in Marine Protected Areas Management External Evaluation Final Report, Prepared by Alejandro C. Imbach, May 2007.

A profile of the Hol Chan Marine Reserve (Belize): success and challenges. Prepared by Georgina Bustamante

A profile of the Soufriere Marine Management Area (St. Lucia): success and challenges. Prepared by Georgina Bustamante

Expansion, Consolidation and Strengthening of MPA Network in the OECS, 2010

Grenada National Protected Areas System Capacity Development Final Draft Plan, 2007

Expansion, Consolidation and Strengthening of MPA Network in the OECS, 2010

Management Effectiveness Assessment Report for Saint Lucia Protected Area System, 2009

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