

**Evaluation of the Belize Audubon Society Co-Management
Project at Crooked Tree Wildlife Sanctuary and
Cockscomb Basin Wildlife Sanctuary, Belize**

by

Ginny Leikam, Stephanie Otis, Tristan Raymond,
Nicole Sielken and Tom Sweeney

A project submitted
in partial fulfillment of the requirements
for the degree of
Master of Science in Resource Policy and Behavior
in the School of Natural Resources and Environment
at the University of Michigan

April 2004

Faculty advisor:

Associate Professor Elizabeth Brabec, J.D.

Abstract

As a result of the traditional “top-down” approach to protected area management, the livelihoods of communities within and surrounding protected areas have been impacted all over the world for the sake of conservation projects. In order to address this disparity of interests between local communities and natural resource managers, a movement in protected area management has recently emerged to include local participation in the management of these areas. This new paradigm, or co-management, decentralizes the decision-making power from solely government agencies to one of shared governance with local communities (Lane 2001). This paper provides an assessment of a co-management project and its components for two sites in Belize, Central America: Crooked Tree and Cockscomb Basin Wildlife Sanctuaries. The project makes a critical examination of the elements that are either ameliorating or hindering the successful inclusion of the local communities into the decision-making processes and management of the natural resources. Since the mid-1980s, the Government of Belize has relinquished authority for eight protected areas to the Belize Audubon Society, a national NGO, through a signed Memorandum of Understanding. Until recently, however, few public participation efforts have been initiated to engage local communities in the management strategies for the park. In order to conduct an assessment of the project, field research was conducted which consisted of interviews with local communities, government officials and NGO staff and an extensive literature review on protected area management and project documents. As a result, the research team gained insights into benefits and challenges of the co-management project experienced by Belize Audubon Society staff, as well as local communities as a result of living in or adjacent to the protected area. Both successes and barriers of the co-management project, as of August 2003, have been identified. The analysis of this co-management project can be applied to other co-management regimes in Belize and around the world and provide insights to other natural resource managers implementing similar projects.

Acknowledgements

This project would not have been possible without the tremendous support we received from many individuals and organizations in Belize and the University of Michigan. Above all, our sincerest gratitude goes to the people of the buffer communities in and around Crooked Tree Wildlife Sanctuary and Cockscomb Basin Wildlife Sanctuary, who welcomed us into their homes and places of work. In addition, we would like to thank Osmany Salas for his patience and invaluable support and information. The project would also not have been possible without the guidance the Belize Audubon Society and their willingness to share information and time with the project team.

We are grateful to the University of Michigan's School of Natural Resources and Environment (SNRE) for providing us the opportunity to develop and implement this Master's Project. In particular, we would like to thank our project advisor, Associate Professor Elizabeth Brabec, J.D., for her invaluable support. We would especially like to thank her for taking the time to come to Belize and maintaining her sense of humor throughout her travels with us.

Our field research was funded by grants from the Horace H. Rackham's School of Graduate Studies Discretionary Funds, SNRE Project and Alumni Incentive Funds, the Prentice Fund, University of Michigan's International Institute: Latin American and Caribbean Studies and the Belize Audubon Society.

Table of Contents

Abstract	ii
Acknowledgements	iii
Table of Contents	iv
List of Figures and Maps	vii
List of Appendices	viii
List of Frequently Used Acronyms	ix
Chapter 1: Introduction & Executive Summary	1
Chapter 2: Protected Areas	9
2.1 Introduction	9
2.2 History of Protected Areas	10
2.3 Types of Protected Areas	11
2.4 Public Perceptions of Protected Areas	12
2.5 Current Governance in Latin America	14
2.6 A Changing Paradigm	17
Chapter 3: Co-Management	19
3.1 Background	19
History and Evolution	19
Definition and Goals of Co-Management	19
Processes of Co-Management	20
Benefits of Co-Management	23
Challenges of Co-Management	24
Key Players and Frameworks	24
3.2 Community Participation	27
Introduction of Concepts and Theories	27
Background in Protected Area Management	30
Benefits of Community Participation	32
Challenges of Community Participation	32
Basic Criteria for Community Participation	34
Summary	37
3.3 Co-Management Components	38
Economic Demonstration Projects	38
Environmental Education	41
Chapter 4: Belize	45
4.1 Background	45
Geography	45
History	46
Culture	46
Economy	49
Politics	50

4.2	Environment in Belize	51
	Overview	51
	Threats to Biodiversity	52
	Conservation in Belize	52
4.3	Co-Management in Belize	57
	Introduction	57
	National Policies Governing Co-Management	58
	Critical Barriers to Co-Management	60
4.4	Protected Areas Conservation Trust (PACT) and Belize Audubon Society (BAS) Co-Management Projects	62
	PACT	62
	BAS	65
	Crooked Tree Wildlife Sanctuary (CTWS)	66
	Cockscomb Basin Wildlife Sanctuary (CBWS)	70
4.5	BAS Co-Management Project Components	73
	Introduction	73
	Co-Management Structure	75
	Economic Demonstration Projects	78
	Resource Management Training	83
	Environmental Education	85
	Monitoring and Enforcement	87
	Belize Audubon Society Institutional Strengthening	88
4.6	Project Monitoring and Evaluation	89
Chapter 5:	Methodology	91
Chapter 6:	Results and Discussion	95
6.1	Introduction	95
6.2	Co-Management Structure	97
6.3	Economic Demonstration Projects	103
6.4	Resource Management Training	107
6.5	Environmental Education	110
6.6	BAS Strengthening Ties With Communities	114
6.7	Summary	117
Chapter 7:	Recommendations and Conclusions	119
7.1	Introduction	119
7.2	Co-Management Structure	119
7.3	Economic Demonstration Projects	121
7.4	Resource Management Training	124
7.5	Environmental Education	125
7.6	Monitoring and Enforcement	127
7.7	BAS Strengthening Ties With Communities	127
7.8	Other	128
7.9	Future of Co-Management	129

Appendices	131
Literature Cited	173

Figures and Maps

Figures

Figure 1	Adaptive Management Project Cycle	23
Figure 2	Hierarchy of Ministries	56
Figure 3	Belize Audubon Society Co-Management Model	76

Maps

Map 1	Belize and Surrounding Countries	45
Map 2	Political Districts of Belize	50
Map 3	Protected Areas in Belize	55
Map 4	CTWS and Buffer Communities	68
Map 5	CBWS and Buffer Communities	71

List of Appendices

Appendix A: Government Ministries	131
Appendix B: Protected Areas and Existing Co-Management Agreements in Belize	132
Appendix C: Belize Audubon Society's Co-Management Project at CBWS and CTWS Logical Framework	134
Appendix D: Local Advisory Committee Terms of Reference	136
Appendix E: Regional Advisory Committee Terms of Reference	137
Appendix F: Interview Protocols	138
Appendix G: Demographics of Interviewees	147
Appendix H: Examples of Collaborative Management Process Indicators	148
Appendix I: Survey-Barriers Data Results	150
Appendix J: Co-Management Structure Data Results	153
Appendix K: Economic Demonstration Projects Data Results	155
Appendix L: Training Data Results	158
Appendix M: Environmental Education Data Results	160
Appendix N: Children Interview Data Results	162
Appendix O: Survey-General Data Results	163
Appendix P: BAS Strengthening Data Results	165
Appendix Q: Familiarity with Co-Management Data Results	170

Frequently Used Acronyms

BAS	Belize Audubon Society
BELTRAIDE	Belize Trade and Investment Development Service
BEST	Belize Enterprise for Sustained Technology
CARICOM	The Caribbean Community and Common Market
CBO	Community-based Organization
CBWS	Cockscomb Wildlife Sanctuary
CCAD	Central American Commission on Environment and Development
CITES	Convention on International Trade in Endangered Species
CLO	Community Liaison Officer
CTWS	Crooked Tree Wildlife Sanctuary
DFC	Development Finance Corporation
EDP	Economic Demonstration Project
EE	Environmental Education
EU	European Union
GEF	Global Environmental Facility
GOB	Government of Belize
ICDPs	Integrated Conservation and Development Projects
IICA	Inter-American Institute for Cooperation on Agriculture
IUCN	World Conservation Union
LAC	Local Advisory Committee
LMTs	Local Management Teams
MBC	Mesoamerican Biological Corridor
MBRS	Mesoamerican Barrier Reef System
MNREI	Ministry of Natural Resources, Environment, Commerce and Industry
NEAC	National Environmental Appraisal Committee
NGO	Non-Governmental Organization
NLAC	National Lands Advisory Committee
NPAPSP	National Protected Areas Policy and Systems Plan Initiative
NSASP	National Protected Areas Systems Plan
PA	Protected Area
PACT	Protected Areas Conservation Trust
PATEC	Protected Areas Technical Evaluation Committee
PFB	Programme for Belize
PROARCA/CAPAS	Regional Environmental Project for Central America/Central American Protected Areas System
PUP	People's United Party
RAC	Regional Advisory Committee
SFBB	Small Farmers Business Bank
TAC	Technical Advisory Committee
TIDE	Toledo Institute for Development and Environment
UDP	United Democratic Party
UNDP	United Nations Development Program

UNESCO
USAID
WCS
WWF

United Nations Educational, Scientific and Cultural Organization
United States Agency for International Development
Wildlife Conservation Society
World Wildlife Fund

Chapter 1: Introduction and Executive Summary

1.1 Introduction

As a result of the traditional “top-down” approach to protected area management, livelihoods of communities within and surrounding protected areas have been threatened all over the world for the sake of conservation projects. In order to address this disparity between local communities and natural resource managers, a movement in protected area management has recently emerged to include local participation in the management of these areas. This new paradigm, or co-management, recognizes the multiplicity of stakeholder groups and decentralizes the decision-making power from solely government agencies, typically, to one of shared governance with local communities (Lane 2001). Therefore, co-management requires building the communities’ capacity to co-manage these areas because the concept of natural resource management is technical and complex and new to these communities. The expected outcome is that sharing responsibilities of managing natural resources will result in more equitable distribution of the natural resource benefits and costs for these communities and in turn, result in better outcomes for conservation projects.

This paper provides an assessment of a co-management project and its components for two sites in Belize, Central America: Crooked Tree Wildlife Sanctuary (CTWS) and Cockscomb Basin Wildlife Sanctuary (CBWS). The project takes a critical examination of the elements that are either ameliorating or hindering the successful inclusion of the local communities into the decision-making processes and management of the natural resources. Since the mid-1980s, the Government of Belize has relinquished authority for eight protected areas to the Belize Audubon Society (BAS), a national non-governmental organization (NGO), through a signed Memorandum of Understanding. Until recently, however, little public participation efforts have been initiated to engage local communities in the management strategies for the park. Thus, the Belize Audubon Society has secured funding for a co-management project at the two wildlife sanctuaries.

In order to conduct an assessment of the project, field research was conducted which consisted of interviews with local communities, government officials and NGO staff and an extensive literature review on protected area management and project documents. As a result, the project team gained insights into the benefits and challenges experienced by Belize Audubon Society staff and the local communities as a result of living in or adjacent to the protected area. In addition, both successes of the project as of August 2003, as well as the barriers have been identified. The analysis of these barriers may be applied to other co-management regimes in Belize and around the world and provide insights to other natural resource managers implementing similar projects.

While there are numerous external factors that contribute to the success of co-management of natural resources, due to the financial and time constraints of this project we have focused on the components of this particular project: the structure of co-management, economic demonstration projects, resource management training, environmental education, and BAS strengthening. However, we do recognize that a

number of other cultural, historical and political factors are also contributing elements to the success or failure; however, these elements are only briefly discussed in the first few chapters and not analyzed fully for their implications on this project.

1.2 Executive Summary

Chapter 2: Protected Areas

The manner in which the national park system emerged in the United States in the late 1880's has had tremendous social implications for indigenous communities around the globe, particularly in developing countries. Thus, before examining a particular case study of co-management at two protected areas in Belize, it is important to examine protected areas in a broader historical context to understand the effects that parks have had on the people who live in and around them. Chapter 2 provides an historical framework of protected areas and outlines the various categories of protected areas designated by the World Conservation Union (IUCN). Lastly, the chapter examines the current policies governing protected areas management in Central America. This chapter sets the stage for the following chapters, which focus on a new paradigm of protected areas management that seeks to reconcile the needs of human populations with biodiversity conservation.

Chapter 3: Co-management Background

Co-management can be defined as the decentralization of power and authority to various stakeholder groups that collaborate in the management of natural resources, primarily in or around a protected area. Co-management requires agreements of shared decision-making power between the key stakeholders—local communities, government ministries, national/international NGOs and formally trained resource managers—to implement national policies guiding protected area management (Lane 2001). Previous research has identified steps in order to build alliances for co-management. These steps include a preliminary phase which includes the organizing for partnership, negotiating plans and agreements, and finally learning by doing (Borrini-Feyerabend 2000).

Since co-management involves shifting management power from predominantly an outside entity, be it national or international organization, to one of shared responsibilities with local communities, it stands to reason that, one key aspect of co-management is active (and effective) community participation (USAID 2003). In order to get the communities involved it is important to build the capacity of the local communities and build alliances with participating organizations or agencies, which often involves conflict management. In addition, this chapter outlines benefits and challenges of doing so, as well as, basic criteria and mechanisms of community participation in natural resource management.

Other key elements critical to the successful integration of local communities into the management of protected areas are economic demonstration projects (EDPs) and environmental education. Communities' livelihoods have been restricted as a result of

the policies implemented with protected areas. Thus, without viable alternatives, the communities are forced to continue extracting resources in order to survive. Small income projects can offset some of the financial burdens of living next to a protected area and may include any number of initiatives that assist families or small groups of people in a village. This section outlines the various kinds of EDPs that have been implemented at protected areas, consisting of (but not limited to) compensation funds, ecotourism development and craft production.

Environmental Education is the last critical element of co-management that is discussed in the chapter. In the absence of sound environmental education, local communities will not understand why a protected area is necessary. People need to have a basic understanding and awareness of the environment and how people's presence in the environment affects it. Environmental Education should help people develop strong feelings of concern for the environment and a motivation to do something for its protection and improvement. Thus, this section also briefly touches on environmental education and its importance of integrating communities into the natural resource measurements of the area.

Chapter 4: Country Specifics and Co-management in Belize Overview

The previous chapters describe the broader perspective of protected areas and co-management that is necessary to assess the case study in Belize. However, this chapter narrows the focus on Belize and Crooked Tree and Cockscomb Basin Wildlife Sanctuaries. The chapter begins with a detailed look at the country of Belize: geography, history, culture, economy and politics. The paper does not examine each of these in detail; however, each of the elements plays a critical role in understanding broader national level barriers and successes of co-management for the country.

In addition to a country overview, this chapter provides an overview of the environment and conservation in Belize, including pertinent environmental legislation and key players in protected area management in Belize. Environmental conservation in Belize focuses predominantly on the use of protected areas to safeguard biodiversity. Currently there are twelve national parks in the country, as well as four nature reserves, six wildlife sanctuaries, and three national monuments. Perhaps the biggest impediment to protected areas management in Belize is the lack of a systematic national plan for managing all of the protected areas. Two general acts, the National Parks System Act and the Wildlife Protection Act, are the basis for current protected areas legislation in Belize. The various laws and other pieces of legislation passed throughout the years have given authority over protected areas to different agencies within the government. In fact, three government ministries are responsible for drafting and implementing the laws relating to environmental management: the Ministry of Agriculture, Fisheries and Cooperatives, the Ministry of Natural Resources, Environment, Commerce and Industry, and the Ministry of Tourism.

Chapter 4 presents details of co-management in Belize including the national policies governing management of protected areas and other organizations involved with co-

management in Belize. There are four types of co-management that currently exist in Belize: between the 1) Government of Belize (GOB) and NGO, 2) GOB and Community-based organizations (CBOs), 3) GOB and private landowners, and 4) GOB and NGOs, where the NGO is charged with working with buffer zone communities/CBOs. The Protected Areas Conservation Trust (PACT) and BAS have been the two major initiatives to test co-management at the community level in Belize. The concept of co-managing protected areas with local communities was initiated in the late 1990's, in Belize; therefore, co-management with local communities is a relatively new concept for the country. Previous evaluations of co-management projects between Government of Belize and Community-Based Organizations in Belize have been conducted and national barriers to co-management identified. However, there has not been an evaluation conducted of other Government-NGO-Community co-management projects in Belize.

This chapter concludes by outlining the details on the research sites and the particular co-management project that was evaluated for this research: the Belize Audubon Society, the buffer communities, components of the projects. The six components of the co-management project are 1) co-management structure (Local Advisory Committee, Technical Advisory Committee, and Regional Advisory Committee), 2) Economic Demonstration Projects, 3) Leadership and Resource Training, 4) Environmental Education, 5) Monitoring and Enforcement and 6) BAS strengthening.

Chapter 5: Methodology

In order to gain an objective assessment of the co-management project, data was gathered through a multi-method approach, as well as from various stakeholders. The majority of the data was gathered over a three month period (June – August 2003) which consisted of semi-structured interviews with Belize Audubon staff, government officials, staff members of other NGOs involved with co-management projects and local community members living in buffer communities around CTWS and CBWS. The interview protocol was developed after review of initial documents and discussions with BAS staff members. In addition, data was reviewed from internal organization documentation of the project including the BAS co-management project work plan, reports to the European Union on the progress of the project and periodic internal reports from the Project Manager and Community Liaison Officer. Questions for each interviewee group were developed based on the thematic areas set forth in the BAS Co-management proposal to the European Union: the structure of co-management, economic demonstration projects, resource management training, environmental education and BAS strengthening. A general survey using a Likert-type scale and an open ended survey that focused on the barriers to co-management were developed to obtain feedback from community members. The project team was able to spend a great deal of time in some of the communities and record observations.

Chapter 6: Results and Discussion

Co-Management Structure

The Local and Regional Advisory Committees were meant to serve as the structure for co-management and as communication pathways between BAS and the local communities of CTWS and CBWS. However, they have only been in existence since 2000, and this has proven to be too little time to organize the villagers and educate them on natural resource management issues necessary to play an active role in protected area management. The results show that, while the majority of interviewees were familiar with the Local Advisory Committees to some degree, they were unfamiliar with its purpose and roles and responsibilities. Moreover, most individuals stated that the Local Advisory Committees did not meet in their village. While some people did state that the Local Advisory Committees meet frequently, it was observed that their definition of a Local Advisory Committee meeting did not meet the definition as stated in the Local Advisory Committee terms of reference. In other words, community members considered any meeting with BAS as a Local Advisory Committee meeting. Thus, based on both interviews and observation, it was clear that the Local and Regional Advisory Committees in villages at CTWS and CBWS, as well as a Technical Advisory Committee, were not functioning.

Economic Demonstration Projects

As with the Local Advisory Committee, residents seemed familiar with the larger economic demonstration projects that BAS has helped to implement. However, while they were aware of the projects, they were not aware that these projects were part of a broader BAS project to integrate communities into protected area management. Residents did not mention hearing about smaller projects, though these projects would be more manageable given the communities' lack of capacity to work together. Furthermore, it was clear that not enough research had been conducted in order to choose Economic Demonstration Projects that would address the specific communities' needs and be economically viable projects. In addition, the terms set forth in the original European Union proposal were too rigid to allow for much needed flexibility in altering projects given changing circumstances. Most importantly, key stakeholders were not identified; as such, the projects, while commendable in many ways, did not address the needs of those most harmed by the establishment of the wildlife sanctuary.

Resource Management Training

The training sessions did address some of the obstacles that the community members face concerning co-management. On a positive note, the participants developed leadership skills, developed communication skills and learned to work together to bridge the gap among community members themselves, as well as between community members and BAS. For others, the training provided an opportunity to learn to lobby their representative for improvements in their village, as was the case for all villages at both CTWS and CBWS. However, there is room for improvement with future trainings for

these communities. Specifically, these training sessions have unfortunately reached a small percentage of the overall population for both these sites. In other words, while those who attended the training sessions spoke very highly of them, all residents were not able to attend and receive the same benefits.

Environmental Education

Residents and children alike stated that BAS is active in both CTWS and CBWS in bringing environmental education to the school, and that overall their programs are well received and educational. However, the lack of environmental education in the broader community is a serious deficiency in the co-management project. A successful education program is the most crucial element of any co-management regime; if the residents do not care or see the value of protecting the environment. The purpose of all other components of the project, from the Local Advisory Committee to the Economic Demonstration Projects, will be lost on the communities. The fact that so many respondents kept endangered species as pets, or that the children viewed protecting nature as only important so that the ‘white man [tourists] can come to look at it’, is evidence that the values of natural resources protection were not evident to them. As such, community-based conservation projects can never be sustainable. To state again, of all the component of the co-management project, environmental education is the most important. Unfortunately, as far as the broader community is concerned, BAS’ efforts in the area have been minimal.

BAS Strengthening Ties with Communities

Like the Local Advisory Committees, many people stated they had heard about the co-management project, but did not appear to fully understand what ‘co-management’ meant. Thus, it is clear that BAS still has a long way to go in educating the communities on natural resource management and co-management. Not surprisingly, many people still felt resentment toward BAS, and accusations against the organization persisted within the communities along with misconceptions about the protected areas persist. Still, BAS has made great headway in developing closer ties to the communities. Institutional barriers remain on both the side of the communities as well as with BAS. Building relationships with and enhancing the capacity of the communities and BAS requires long-term planning and long project scales.

Chapter 7: Recommendations

To summarize the recommendations listed in the chapter, with regards to the Local Advisory Committee, BAS needs to clearly define its purpose and function, and to create incentives for Local Advisory Committee members to meet. As long as the Local Advisory Committees and Regional Advisory Committees are unclear of their roles and responsibilities, it is unrealistic to expect them to be meeting on their own and organizing activities for their villages. Economic Demonstration Projects need to be established that are more pertinent to the protection of natural resources, and help those stakeholders most affected by the protected area. Training and Environmental Education need to be made

more widespread. Above all, Environmental Education is the most important component of co-management and is the only way to establish a sustainable, lasting motivation for residents to preserve and protect biodiversity. BAS can continue to strengthen its ties with the communities through continued presence and persistence in establishing those ties.

Chapter 2: Protected Areas

2.1 Introduction

As the human population grows, human settlers, industry and agriculture increasingly encroach upon the earth's few remaining tracts of wilderness. In response to this, land is often set aside in order to preserve the planet's last 'pristine' areas. An estimated five percent of the earth is currently classified as protected. This five percent is comprised of over 25,000 different protected areas, which vary widely in size, shape and management plan (Brandon, et al. 1998). The World Conservation Union (IUCN) defines a protected area as "An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (United Nations Environment Program 2001) The percentage of land that is protected varies widely by country. For example, 41 percent of Belize is classified as protected, as is 35 percent of Panama and 33 percent of Costa Rica (Brandon, et al. 1998). In the United States, seventeen percent of the country is protected, as is roughly fourteen percent of Japan. In Brazil, slightly less than two percent of the territory is protected (Guimarães 1991).

The creation and management of protected areas, particularly in developing nations, has recently become the object of extensive examination and debate. Prominent theories today focus not only on protecting biodiversity but also on such issues as the rights of indigenous peoples¹, co-management with local communities, and an overall commitment to creating a sustainable environment for both people and protected areas (Brandon, et al. 1998; Western, et al. 1994; Kothari, et al. 1996a; Ghai and Vivian 1992; Saberwal, et al. 2000). Protected areas can no longer be viewed as islands, but rather as a part of a much larger, more complex landscape (Chambers and Ham 1995). In India, for example, sixty-nine percent of protected areas have people living within their boundaries, some with populations as high as three million (Suri 1996). As Ashish Kothari notes, a "protection strategy which alienates local communities is unjust to them and disrespectful of their fundamental rights, and also short-sighted for wildlife conservation" (Kothari 1996b). Establishing sustainable systems of management between local people and protected areas is becoming an increasingly central part of conservation endeavors. The current model of protected area design is based, in large part, on the conservation movement that began in the United States and Europe in the late 19th and early 20th century. In this model, there is a strong dichotomy between people and the natural world, and this ideology can have very deleterious effects when applied in developing nations (Guha and Martinez-Alier 1997).

This chapter will examine the development of protected areas around the world, focusing specifically on the effects that they have had on the people who live in and around them.

¹ For this paper, the terms 'local' and 'indigenous' are used interchangeably; in reality, there is a difference between the two terms. Simply put, 'indigenous' means those people who are the 'original' inhabitants of an area, while 'local' can refer both to indigenous populations and to those people who have migrated to the area since European colonization.

We will then turn our attention to the basic types of protected areas, and look at the current policies governing protected areas management in Central America. Following chapters will focus on a new paradigm of protected areas management that seeks to reconcile the needs of human populations with biodiversity conservation.

2.2 History of Protected Areas

2.2.1 Protected Areas in the United States

In the United States, conservationists pushed for the creation of protected areas as a way to offset the destruction of the North American wilderness occurring at the time (Guha 2000). This conservation movement began in large part as a backlash to the idea of Manifest Destiny, whereby the early white settlers moved westward across the country under the assumption that God had given them the right and duty to settle the North American continent. Under this ideology, settlers were motivated to exploit the land in any way they could, cutting down forests and killing off the buffalo, passenger pigeon, and Native American populations. By the late 1890's much of the North American landscape had been devastated at the hand of the white settlers. It was during this era that the first conservationists, including Aldo Leopold, Henry David Thorough, Theodore Roosevelt and John Muir started the movement to preserve what was left of the natural world (Bernard and Young 1997).

Given the destruction of the wilderness at the hands of the settlers, it is not surprising that the prevailing philosophy of the time viewed humankind as a menace to the natural world and promoted "nature" as vast, pristine wilderness free from human contact. The rise of the industrial age further separated people from nature. Therefore, as the models of protected area management developed, they did not consider the local inhabitants as pertinent to the sustainability of preservation areas. In this model, the grand expanses of wilderness that came to be national parks were, indeed, free of human use. Yosemite, Yellowstone, Mt Rainier, and other national parks were all once Native American lands (Keller and Turek 1998). During the process of park development, Native Americans were seen as a hindrance to tourists visiting the parks, and so were relocated from the area to reservations. Native Americans were viewed as "part of the hostile environment that had to be conquered in the west." Thus, two policies were developed: one for national parks and one for reservations (Poirier and Ostergren 1992). The removal and relocation of these communities attempted to force them to assimilate to Euro-American lifestyles, left most in poverty, and contributed to a decline in their culture and loss of native language (Burnham 2000).

2.2.2 Protected Areas in the Developing World

The manner in which the national park system emerged in the United States in the late 1880's has had tremendous social implications for indigenous communities around the globe, particularly in developing countries. As Antonio Carlos Diegues notes, "because this approach has been adopted rather uncritically by the countries of the Third World, its effects have been devastating for the traditional populations-extractivists, fisherfolk, and

indigenous peoples. This model was transposed from industrialized countries with temperate climates to the Third World, whose remaining forests have been, and continue to be, inhabited by traditional populations” (Diegues 2000).

Individuals and organizations schooled and founded in the United States and other industrialized nations often play a key role in the formation of protected areas in Central and South America. These people view developing nations “as the last frontiers of a pristine environment that is the preserve of all mankind” (Schmidtz 1997).

Environmentalists in Europe, Canada and the U.S. have lobbied their own governments to use loan guarantees to pressure developing nations to stop various activities that they deem harmful (Schmidtz 1997). During the 1980’s, non-governmental organizations utilized images of massive fires in the Amazon and other catastrophes in developing nations to build public support for conservation in these regions. Bowing to pressure from these groups, organizations such as the World Bank and Inter-American Development Bank mandated environmental protection clauses as a condition for loans (Kolk 1998). In this way the non-governmental organizations were able to pressure the governments of Brazil and other countries to support the establishment of protected areas (Abakerli 2001).

There are instances where local governments and local populations have themselves called for the establishment of protected areas for various reasons. In the northeastern Brazilian state of Bahia, for example, government officials created several national parks to help the region develop economically, as protected areas frequently draw in a substantial amount of tourism. In one local example, rubber tappers in the Amazon, led by Chico Mendes, pushed for the creation of extractivist reserves that allowed them to continue extracting rubber while keeping out ranchers and other sources of commercial exploitation (Abakerli 2001; Oliviera 2003). However, the type of protected areas that they advocated for were not based on the traditional U.S. model, but rather allowed for continued extraction by local populations.

2.3 Types of Protected Areas

The World Conservation Union (IUCN) currently classifies protected areas into eight categories. In the first category are Strict Nature and Scientific Reserves, which are designed to leave nature and ecosystems in an undisturbed state in order to preserve areas for scientific study, monitoring and education. National Parks fall into the second category and have the purpose of providing areas of scenic beauty that are also important to research, education and recreation, while at the same time prohibiting any sort of extractive activities. The third category of protected areas includes National Monuments and National Landmarks. These areas tend to be small and focus only on specific landscape features of particular interest. Managed Nature Reserves and Wildlife Sanctuaries, the fourth category of protected areas, serve the function of maintaining natural conditions in order to protect certain species. In some cases, regulations permit controlled harvesting in these areas. Protected Landscapes and Seascapes, the fifth category, are created to maintain ecological integrity while allowing for recreational uses. Resource Reserves, the sixth category, protect the natural resources of an area for future

use and prevent development activities that may harm the area before a permanent classification can be determined. The seventh category includes Anthropological Reserves and Natural Biotic Areas, the purpose of which are to maintain ecological integrity while permitting resource extraction by indigenous people. The last category is Multiple Use Management Areas and Managed Resource Areas. Such areas allow for the sustainable production of natural resources, including timber, wildlife, water and tourism. (World Conservation Union 2002b)

These categories can be classified into two main groups. Categories one through five have stringent regulations that limit or prohibit any type of resource extraction. Categories six through eight allow for resource extraction to varying degrees, and seek to reconcile human use with sustaining ecological integrity (Brandon, et al. 1998). The difference between IUCN classifications of protected areas changed dramatically from 1978 to 1994. This change has not only signified a new way to develop management practices of protected areas, but has also led to rethinking concepts of natural resource management. There is now a “gradation of human intervention,” in classifying protected areas (Stevens 1997). The first group of protected areas reflects the dichotomy of traditional models in the United States; the second group of protected areas is more demonstrative of the types of protected areas in which human needs are recognized.

Protected areas sometimes are surrounded by buffer zones. Buffer zones are areas that surround a ‘core’ zone of protection. These areas have less stringent regulations and generally allow for some extraction. For example, a national park may be surrounded by a section of land that is protected to a lesser degree than the national park itself. While an individual may not be allowed to hunt, fish, or extract timber from the national park itself, they may be allowed to hunt and fish in the buffer zone but not to extract timber. Often times a protected area will have three rings: the core area, a buffer zone, and a transition zone, which have even less stringent regulations than the buffer zone. From the perspective of protecting biodiversity, it seems better to protect an entire area with the most stringent regulations possible. However, from the viewpoint of working with local communities and alleviating some of the hardships that can ensue from protected area regulations, buffer zones help to protect core areas of importance while allowing for a certain degree of human use (Martino 2001).

Each county further has its own types of protected areas, and those areas are managed by a myriad of agencies and organizations. The important thing to bear in mind, however, is under which of the two broad categories a particular area falls. It allows either for some activity within or none at all.

2.4 Public Perceptions of Protected Areas

Little research has been done to comprehensively understand the collective social impacts these restrictions and relocations have had on indigenous populations. Assessing those impacts is difficult to ascertain because those impacts differ by situation. Therefore, no model is available to evaluate the cumulative effects these transgressions have had on communities around the world (West and Brechin 1991). What is known, however, is

that it has led to a decline in indigenous cultures and traditional lifestyles. This, in turn, has led to tensions between conservationists and native cultures, ultimately hindering conservation of natural areas.

It is estimated that there are between 5,000 and 8,000 indigenous cultures, making up 90 to 95 percent of the world's cultural diversity, and these cultures rely heavily on local natural resources. Their homelands are the cornerstone of their spiritual rituals and encompass historical values and an identity of the people (Stevens 1997). For example, at the Dalma Wildlife Sanctuary in Bihar, India, a ban on hunting has infringed upon certain religious ceremonies (Christopher 1997). In Mindoro, Philippines, local people rejected a World Bank proposal to establish a protected area in part because the area included a portion of their ancestral homeland (Wiens 1996). The cultural significance of an area, and the activities that communities engage in, cannot be overlooked.

Protected areas can also severely impact traditional methods of livelihood such as hunting, fishing and extraction of fauna. This can leave already poor communities with even less options for securing food and other essentials. In other cases, residents are forbidden from destroying problem animals that harm crops, livestock and, sometimes, humans. For example, local residents living near the Selous Game Reserve in Tanzania reported that wild animals eat or otherwise destroy their crops (Gillingham 1998), and this sentiment was echoed by residents of Bihar, India (Christopher 1997). Such situations have led to resentment toward the protected areas.

In many cases, residents express varying degrees of dissatisfaction with the level of input that they have with regards to the management process. For example, at the Selous Game Reserve in Tanzania, the residents reported that they view the Department of Wildlife with mistrust (Gillingham 1998), while in Bihar residents were upset that the Forest Department did not recognize their local Forest Protection Committees (Christopher 1997). In the Philippines, local people did not feel that they had any substantial voice in the decision-making process (Wiens 1996). All three cases indicate varying degrees of disillusionment among local populations toward the management of protected areas.

It is clear that the traditional model of protected areas has frequently disenfranchised indigenous and local communities. Since they are often poor with little or no political power, further marginalization and displacement of these communities has resulted in local resentment of parks and reserves (Brandon and Wells 1992). When a park is established and traditional activities become illegal, communities sometimes react in such a manner that is far more harmful than their previous activities in the area. For example, they may over-use the resources offered by the land and over-hunt (Diegues 1992). New rules and regulations further divide local populations and the natural resource managers charged with oversight of the parks. Some researchers argue that local peoples often have much to tell about the area that can help enhance the ecological integrity. Since local residents are the ones who will have the greatest impact on the area, researchers suggest that it is more beneficial to have them involved and to listen to what they have to say (Chambers and Ham 1995). Ignoring local residents can lead to feelings ranging from apathy to outright hostility (Gardner 1995; Saberwal, et al. 2000).

2.5 Current Governance of Protected Areas in Latin America

2.5.1 Introduction

Central America is composed of seven nations, including Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. Together these nations comprise a land area of 331,000 square miles (533,000 square kilometers). Deforestation and other forms of environmental degradation are proceeding at an increasing rate and, given the extreme poverty rampant throughout the region, efforts at conservation have been consistently under-funded and poorly managed (Barzetti 1993).

It is estimated that roughly 30 percent of all protected areas in Central America are 'paper' parks; that is, they are official protected areas but lack the financial resources and management plans to make them 'real.' In other words, they are protected only on paper (Brandon, et al. 1998; Barzetti 1993). For instance, in Panama only half of the conservation units have field personnel, while in Nicaragua only eight of 36 established protected areas have field personnel (Barzetti 1993). Many of the protected areas do not have clear boundaries, and often even the park personnel do not know where the borders are (Houseeal 1998). To add to the problem, concerns over land tenure persist. Land claims are often overlooked or ignored when land is designated as protected (Brandon, et al. 1998). Moreover, many arid and semi-arid places are not protected, nor are various *altiplano* mountain regions (Barzetti 1993). These ecologically important regions are often overlooked in favor of more visually appealing areas such as tropical forests.

2.5.2 Laws and Policies Guiding Protected Areas Management

While each country has its own laws and policies that govern the designation and management of protected areas, there are similar legal elements inherent in most protected areas policies. In general, governments purchase or otherwise acquire land to create parks, or they pass laws to regulate activities in existing lands. The number of agencies involved varies from one to many, though in all cases there are frequently conflicting interests to consider (Barborak 1995; Barzetti 1993). Government control of a protected area is the more conventional model; today, this model is changing. Throughout the world, many other institutions are now involved in the management of protected areas, including non-governmental organizations (NGOs), Community-based organizations (CBOs), private foundations, private landowners, and various combinations of the aforementioned (Barborak 1995).

Private lands offer another challenge to biodiversity conservation. Governments often create laws for the public good that regulate what owners can and cannot do on private lands. While a government may provide compensation for lost activities or other expenses, these regulatory measures are hard to enforce and often cause conflict. A good example of this is the Endangered Species Act in the United States. Because over ninety percent of federally listed endangered species in the United States have some habitat on private land, the laws protecting endangered species significantly affect landowners

(Brook 2003). Many of these landowners are reluctant to admit that they even have endangered species on their land because of the costly ramifications. As such, regulation and enforcement become increasingly expensive when dealing with an unwilling public (Brook 2003). In developing nations, funds are simply not available to compensate landowners.

Conversely, voluntary measures are more efficient and self-enforcing. Typically such endeavors are motivated by commitments on the parts of landowners and NGOs, and while they do not necessarily have legal status, these contracts, either formal or informal, still create an area protected from otherwise un-inhibited development. Sometimes landowners may enter into a legal contract with an NGO or government agency known as an easement, whereby the owner relinquishes all rights to the land for a set period of time, often in perpetuity. While the price of the easement is much lower than the price of the actual land, in the United States landowners can make up for the lost funds in the form of tax breaks or other incentives (Society of American Foresters 2004).

This drive toward voluntary participation is becoming more important in protected areas management. If local populations support the protection of an area, costs ultimately go down. Unfortunately, the laws that govern the management of protected areas are becoming antiquated, as they frequently prevent local residents from deriving economic benefit. For example, in Costa Rica a law mandated that all income generated from the extraction of resources in the area be used wholly for wildlife research and protection. When local residents started several innovative projects to generate income, the law prohibited them from keeping any profits (Barzetti 1993).

In order to be effective, protected areas must be governed by a systematic nationwide plan that lays the foundation for progress (Barzetti 1993). Such a national conservation strategy should be able to guide policymakers in creating the most viable management plans throughout the country. They create the principals that guide the system on a national and international level. Unfortunately, a lack of a systematic protected areas plan is problematic throughout Central America. While most countries do have draft plans, none yet has a codified, systematic plan upon which to base future rules and regulations (Barzetti 1993).

2.5.3 Global Treaties

There are currently three global treaties concerned with protected areas. The 1971 Convention on Wetlands of Historical Importance, commonly referred to as the Ramsar Convention, is an international treaty that provides a framework for national action, as well as international cooperation, for the conservation of wetlands deemed to be of international importance (Ramsar 2004). The 1972 Convention on the Protection of World Cultural and Natural Heritage states that each signatory country “recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations” of sites of cultural and natural importance (UNESCO 1972). The Convention on Biological Diversity, adopted at the 1992 Earth Summit in Rio de Janeiro, sets out the goal of sustainable use of biological resources (Secretariat of

the Convention on Biological Diversity 2002). Other treaties include the African, European, Amazon, ASEAN, South Pacific, Alpine and Regional Seas Conventions, all of which deal with protected areas at a regional level. In Central America, the Central American Commission on Environment and Development (CCAD) was established in 1989 to develop regional environmental policies and regional projects aimed at sustainable development (Barzetti 1993). In 2002, the countries of Central America launched the world's first regional wetlands policy, based on the framework of the Ramsar Convention (World Conservation Union 2002a)

These treaties demonstrate a new awareness that nature does not occur in isolation, and that creating pockets of protected areas does not necessarily help those species that require long distances over which to migrate. Studies have shown that many plants and animals, including endangered species, need large areas to help promote species viability (Fagan, et al. 2002; Rappole, et al. 2002; Channell and Lomolino 2000). In light of this new way of thinking, protected areas now frequently extend across political borders. As of 1993, there were at least 65 countries participating in transnational protected areas management, with a total of 70 protected areas falling into this category (Barzetti 1993). Wildlife corridors, made up of inter-connected protected areas extending internationally across regions of similar biological makeup, are becoming increasingly utilized as one method of biodiversity conservation (Barzetti 1993; De Vries, et al. 2003).

There have been efforts to establish trans-border protected areas in Central America. Border parks and reserves can help ease relations between countries by reducing the need for military buildup along borders. The Si-a-Paz (Yes to Peace) reserve was created between Nicaragua and Costa Rica is one such example of this (Barzetti 1993). Biological corridors are likewise being considered by several countries in Central America. The Meso-American Biological Corridor is a regional initiative designed to establish biological corridors for the movement of plants and animals, while the purpose of the Meso-American Barrier Reef System is to protect the barrier reef system along the Caribbean coast from Mexico to Honduras (De Vries, et al. 2003).

2.5.4 Problems with Protected Areas: Funding and Personnel

Given that most funding for protected areas comes out of the public coffers, many governments in Central America have been increasingly reluctant to pull money away from more pressing issues. As such, funding for protected areas management has to come from other sources. National conservation trust funds are one method; here money is held by a trustee for a specific benefactor. Bilateral debt allows for participating countries to reduce their debt in return for placing the interest of that money into conservation projects. In debt-for-nature swaps, an NGO or other organization purchases, at a discount rate, a portion of the commercial debt of a developing nation. In return, a national bank will pay back the full value of the debt to a conservation organization. Another method of funding was developed in 1990 by the World Bank, the United Nations Development Program (UNDP) and the United Nations Environment Program. Known as the Global Environmental Facility (GEF), it is a multinational fund that focuses on environmental protection, including biodiversity conservation (Barzetti

1993). Despite these many sources of funding, financial problems still plague protected areas. Moreover, the increasing need for foreign assistance is creating concern amongst Central American governments and conservation organizations (Barzetti 1993).

Personnel problems are also an issue at many reserves. Only a small portion of field staff receives any training, and many are illiterate. Technical assistance is needed for many protected areas managers and personnel, both for management plans and day-to-day activities. Pay is often negligible, and housing and equipment are frequently in poor condition. Frustration can be high in such jobs, as one staff member can often be responsible for anywhere from 800 to 15,000 hectares of land. Institutional support is likewise often non-existent (Barzetti 1993).

Of course, another major problem with protected areas management is dealing with the communities that surround the area. Often they resent the new regulations and therefore make enforcement challenging for even the most dedicated conservation officer.

2.6 A Changing Paradigm

Despite the inherent problems in protected areas management, the nations of Central America are making headway in biodiversity preservation. Environmental issues are increasingly common in regional summits, and new ministries have been created in several nations designed for the protection of natural resources (Barzetti 1993). Moreover, conservationists and development experts have begun to develop new approaches to protected area management. A new, emerging view among conservationists includes incorporating local people in the development and implementation of the management regime (Brandon and Wells 1992). This new approach has led to developing countries integrating the issues of human rights, rural development and cultural preservation in protected area management to overcome the complex social issues (West and Brechin 1991; Brandon and Wells 1992). The next chapter will examine more closely this new paradigm of protected area management.

Chapter 3: Co-management of Protected Areas

3.1 Background of Co-Management

3.1.1 History and Evolution

As discussed in the previous section, indigenous and local communities have traditionally been displaced and restricted from extracting resources from within protected areas. Due to the fact that these communities are often poor with little or no political power, further marginalization and displacement of these communities has resulted in local resentment of the parks and reserves. This resentment stems from the restrictions on income and access to resources that the new protected area regulations place on resources that communities have utilized for generations for their daily survival (Wells and Brandon 1992). It has also perpetuated the divide between local populations and the natural resource managers charged with oversight of these parks.

Over the last several decades, however, there has been an emergence of a new paradigm for protected area management. It is now acknowledged that excluding people living adjacent to or within protected areas without providing viable economic alternatives and without inclusion in the decision-making process is politically and socially infeasible. Protected area managers have come to recognize that the traditional “fence and fines” management regime is not effective and a new regime of protected area management must include cooperative, collaborative relationships with local stakeholders who share the responsibility of management (Lane 2001). This new framework of protected area management, originally termed Integrated Conservation and Development Projects (ICDPs), emerged in the 1980’s to promote socioeconomic development and provide local people with alternative income sources that concurrently do not threaten the biodiversity of the park (Wells and Brandon 1992). The term has since evolved and shifted focus from primarily economic development to focus more on community participation, or co-management (also referred to as collaborative management or joint management), in which the relevant stakeholders are involved in a substantial way in the management of the area and its natural resources (Borrini-Feyrabend, 1995).

Current research indicates that the most successfully managed parks effective at resource protection are those with close relations between authorities and local communities. That said, however, this new approach to protected area management does create new challenges for managers who must find effective ways of integrating customs and traditional lifestyles with scientific analyses of resource conservation (Pretty 2002).

3.1.2 Definition and Goal of Co-management

Co-management is the decentralization of power and authority to various stakeholder groups that collaborate in the management of natural resources, primarily in or around a protected area. Thus, co-management entails shared decision-making power between key stakeholders to implement national policies pertaining to protected area management (Lane 2001). If effectively implemented, co-management recognizes and acknowledges

the importance of involving the various actors, interests and concerns that exists for that particular protected area. Since this approach incorporates a variety of partners in a variety of roles, clearly defined responsibilities and delineation of the various roles of each of the active parties is imperative. In addition, while co-management decentralizes power to local stakeholders, ideally, the end result of co-management would still achieve conservation goals and sustainable use of natural resources while simultaneously providing equitable sharing of resource-related benefits and responsibilities among the various stakeholders (Borrini-Feyerabend, et al. 2000; Borrini-Feyerabend 1995). Thus, co-management combines social justice and democracy into natural resource management and integrates ecological conservation with social or cultural perspectives for a holistic approach to park management (Lane 2001).

3.1.3 Process of Co-management

As one can imagine, integrating local communities into the management of parks is not an easy process. Rather it is a complex, often lengthy process, requiring regular evaluations to assess progress. The process also requires adaptive management techniques to adjust goals and perceived avenues to move forward (Borrini-Feyerabend, et al. 2000). It requires participants to understand that there is no one specified solution for managing natural resources, but rather a multiplicity of different options. Some important aspects of using the adaptive management approach are maintaining flexibility and being receptive to unexpected results. There will undoubtedly be unexpected outcomes and changes at the project site that will need to be modified in the project plan in order to reach the goals and objectives. Also, project managers must make the most of the information that is collected by making decisions, monitoring results, and changing it if necessary because the project will never be able to provide all the necessary information (Margoluis and Salafsky 1998).

In “Co-management of Natural Resources: Organizing, Negotiating and Learning by Doing” (Grazia Borrini-Feyerabend, et al. 2000), the process of establishing a co-management regime is broken into four phases that include the following: “preparatory phase, organizing phase, negotiation phase and learning by doing phase.” These steps include assessing the feasibility, developing collaborative partnerships, establishing conflict management mechanisms to negotiate plans and agreements, and adaptive management. While these steps provide guidance to natural resource managers who may be starting co-management, these must be adjusted to the specific local context and each phase is not as cut and dry as it may seem. Furthermore, given the biological and cultural diversity of protected areas throughout the world, co-management does not have a single “tried and proven” framework, and therefore, must be clearly defined by individual project managers (Murphree 1993).

Before approaching co-management, initial steps should be taken that include assessing the need for co-management and the feasibility of implementing a co-management regime. Thus, managers must determine the available human and financial resources that will be necessary, and establish an initial project team (Borrini-Feyerabend, et al. 2000; Borrini-Feyerabend 1995).

The next major step identified is the organizing for partnership phase (Borrini-Feyerabend, et al. 2000). This includes gathering information on the main ecological and social issues for the area and identifying the major stakeholders involved. During this phase, initiating and maintaining communication between the identified actors is critical. Another critical element in this phase includes helping the local actors organize and identify their own representatives. Finally, during this phase the first meeting of all relevant stakeholders should be organized and a set of rules and procedures for the negotiation phase proposed (Borrini-Feyerabend 2000).

Once the partnerships have been organized, the key parties must agree on the negotiation rules and procedures. This includes developing a common goal of the future for the area and a strategy to work towards this goal. This will require key stakeholders to negotiate specific co-management plans and agreements for each component of the strategy (clarifying what will be done by whom and with what means; mediating conflicts; establishing rights and responsibilities for key stakeholders that will be involved, and agreeing on follow-up protocols). One other critical element that must be established early on and agreed upon is the co-management organization and the initiatives to “institutionalize” co-management. Lastly, the co-management plans, agreements and organizations that have been established through this process must be legitimized and publicized (Borrini-Feyerabend, et al. 2000).

The last critical phase is learning by doing. This requires flexibility and adaptive management strategies in order to compensate for unforeseen reactions and circumstances. This includes implementing the co-management agreements and organization and clarifying the responsibilities of the actors. This last phase should also include regular meetings to evaluate the process, identify lessons learned and modify the process accordingly (Borrini-Feyerabend, et al. 2000; Borrini-Feyerabend 1995).

Margoluis and Salafsky (1998) recommend that project managers and stakeholders apply adaptive management, which is the “integration of program design, management, and monitoring to provide a framework for testing assumptions, adapting, and learning.” The adaptive management approach is relevant to both ecological and social systems. In testing assumptions, project participants develop a set of assumptions about what are occurring, try different actions to achieve its desired outcome, and understand why those actions worked or didn’t work.

The process of adaptive management, the project cycle (Figure 1), involves similar steps as those outlined by Borrini-Feyerabend, et al. and includes both the project managers as well as other stakeholders. Margoluis and Salafsky, however, provide more details on monitoring and evaluating the process. The following is a brief discussion of the Project Cycle (BSP 1999):

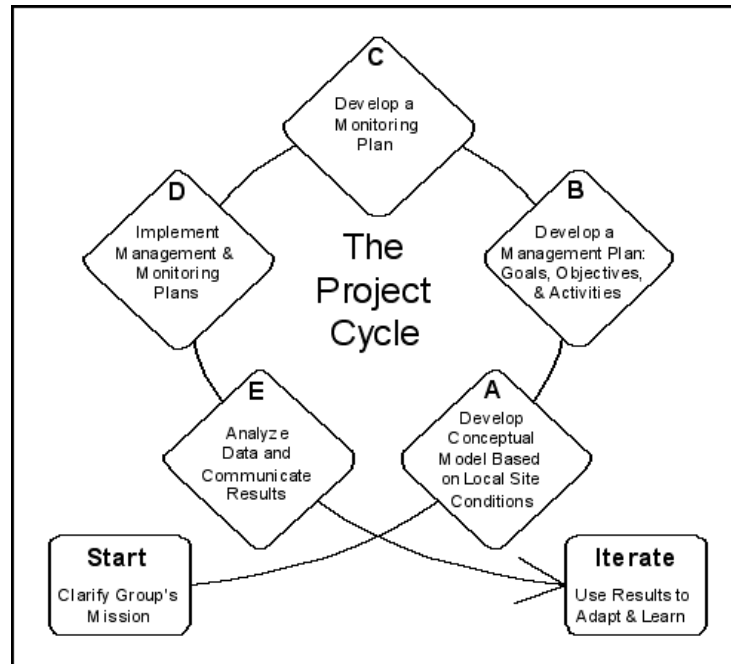
1. **Clarify group mission-** Project participants decide what the long-term desired outcomes and strategy are for achieving their project.
2. **Design conceptual model based on local site conditions-** This is a diagram of the relationships between certain factors that are thought to impact or lead to

target conditions at the project site. It helps clarify the goals and objectives, and the links between direct and indirect threats on target conditions. Without a good conceptual model, the project may not be able “to communicate achievable goals and objectives, design effective and efficient interventions, or determine specific information they need to monitor in order to make sound management decisions and measure project impact” (BSP 1999).

3. **Develop Management plan: Goals, objectives, and activities-** The project participants will come up with goals, objectives, and activities which will address the threats identified in conceptual model.
4. **Develop a Monitoring Plan-** The project participants will define how it will assess the success of project interventions by discussing the following:
 - a. **Identify who the audiences are-** Who will be using the collected data and what do they want to know? Who would be interested in the results of project and monitoring work? For example, local community members, other stakeholders, donors, policy makers in government and other members of the conservation and development community, and broader public.
 - b. **Determine their informational needs-** What do you need to monitor? Goals and objectives, threats related to your objectives, and new factors that arise.
 - c. **Determine the monitoring strategies it will employ to get data needed to meet each of these needs-** How does the project get the information needed to meet each need? Compare the group affected by the project to itself over time (does not establish causal relationships) or compare the group affected by the project to a group not affected by the project over time (can help establish causal relationships)
 - d. **Determine the specific indicators project will measure-** What are the specific indicators for each informational need to follow throughout the life of the project?
 - e. **Determine how, when, by whom, and where the data for these indicators will be collected**
5. **Implement Management and Monitoring Plans**
6. **Analyze Data and communicate results-** Share the results with all the audiences (both internal and external)
7. **Iteration: use results to adapt and learn-** This is the key step in adaptive management which allows the project to use the work done in monitoring to improve the project and move forward.

The benefits of adaptive management serve as a framework for better management which tests assumptions and determines what is effective so project managers can change and improve the project. It is also an opportunity for project managers to learn in an organized and efficient manner to design projects more efficiently and effectively in achieving its goals and objectives (Margoluis and Salafsky 1998).

Figure 1: Adaptive Management Project Cycle (Margoluis and Salafsky 1998)



The benefits of adaptive management serve as a framework for better management which tests assumptions and determines what is effective so project managers can change and improve the project. It is also an opportunity for project managers to learn in an organized and efficient manner to design projects more efficiently and effectively in achieving its goals and objectives (Margoluis and Salafsky 1998).

3.1.4 Benefits of Co-Management

If effectively implemented, establishing a co-management framework for protected areas may generate benefits for resource managers, local communities and conservation. The most critical of these benefits is establishing social equity for local communities. One successful example is the Sierra de las Minas Biosphere. The area was divided into different management zones, which helped to diffuse some of the initial skeptics who feared they would not be able to extract resources once the land was officially declared protected by law (Secaira 2001). The four zones that were created are the core zone, sustainable use zone, buffer zone, and recovery zone. While there are stricter limitations on allowed practices within the core zone, the others do allow the communities to continue their traditional practices (Secaira 2001).

Natural resource problems do not occur in a vacuum and humans are part of the natural ecosystems. Only co-management takes this fundamental part of nature into account (Lane 2001; Borrini-Feyerabend, et al. 2000). Understanding the social context of protected areas will have important implications for the implementation of management strategies by reducing conflicts stemming from natural resource management (Lane 2001). By integrating knowledge, skills and resources of local populations with other stakeholders (non-governmental organizations (NGO) and government agencies,

predominantly), co-management can enhance the decision-making process and reduce the negative social and cultural impact that protected area status has traditionally inflicted upon the communities (Rao and Geisler 1990; Lane 2001). For example, at Kakadu National Park in Australia, the aboriginals, who own the National Park land, constitute a majority on the Board of Management. This Board of Management is the center of park management decision-making (Hill 1993). Giving the communities decision-making power gives them an invested interest in the project. Thus, co-management takes into account equity, social justice and democracy in natural resource management. Unless these social factors are taken into account and human populations made part of the resource related costs and benefits, then they will continue to be forced to illegally extract resources, creating barriers to conservation measures.

In addition, alternative or traditional methods have resulted in endless conflicts between communities and park managers. Thus, co-management provides an avenue to address these conflicts (Borrini-Feyerabend, et al. 2000). Unless conflicts are addressed and a forum established for negotiations developed, the project will not move forward.

3.1.5 Challenges of Co-Management

One of the primary challenges of co-management is the cost and time involved in the process of establishing cooperative relationships between the various stakeholders (Borrini-Feyerabend, et al. 2000). Often, there is a history of resentment on the part of the local communities toward the protected area. Moreover, establishing co-management is a highly politicized process. Deciding which community members will be involved and how to involve them can be a contentious decision.

The process is further complicated by attempting to bridge the gap between development and conservation. Environmentalists may not believe in compromising conservation goals and at times, conservation objectives may be contradictory to development goals. The dilemma arises when park managers have a conservation agenda, but need to first find out what the community feels is important. Conversely, conservation may not be important to community members who may be more concerned with the struggles of everyday life and economic development for their area. Thus, community participation may lead to communities defining goals that contradict conservation. While the goal of public participation is empowerment of community members, it is not always certain that local communities will make decisions that reflect conservation objectives (Brandon and Wells 1992).

3.1.6 Key Players and Frameworks for Co-Management

There are multiple stakeholders² who play principal roles in co-management, all who have an interest in protected area management and economic development: international

² Stakeholders are defined as the “institutions, social groups, and individuals who possess a direct, significant and specific stake in the protected area. Their stake may originate from institutional mandate, geographic proximity, historical association, dependence for livelihood, economic interest and a variety of other capacities and concerns” (Borrini-Feyerabend 1995).

and national NGOs, governmental agencies / ministries, community-based organizations, private foundations and local communities. Each group of stakeholders presents diverse views, interests and concerns which are essential to integrate when implementing PA management plans (Barborak, et al. 2002).

Often, national or international conservation NGOs take the lead in initiating projects and building partnerships. They provide specialized knowledge, skills, and often financial resources for both the ecological and socio-economic aspects of co-management. Many times they take on the traditional government agencies' roles and responsibilities when governments lack the capacity (Borrini-Feyerabend 1995).

More specific to the Latin American region, U.S. and European-based NGOs have been primarily focused on protecting biodiversity through the designation of parks and protected areas in the region. Thus, as relationships first formed between U.S. / European-based NGOs and Latin American NGOs, they were frequently centered on the protection of specific areas. In addition, due to negative experiences with government officials, U.S and European-based NGOs have encouraged and aided in the establishment of local organizations. The protection of natural resources increased relevance because of the shift to conservation approaches that link environmental degradation and the patterns of economic development (Torres 1997).

Other key players are governmental agencies, whose roles are to provide “technical and administrative functions, ...ensure legal and policy frameworks and systems of enforcement that effectively protect against negative interference with the agreement,... provide economic incentives and financial support... process and diffuse information (especially information on current socio-ecological changes never before experienced by the communities at stake)... [and] integrate activities of various sectors (e.g., PA management and agriculture, fishery, forestry, education, training, health, credit schemes, etc.)” (Borrini-Feyerabend 1995).

In general, the Central American and Caribbean region is confronted with acute socio-economic problems relating to poverty and poor governance. As a result, Government ministries in the region are typically poorly funded and often overwhelmed with the burden of poverty alleviation and maintaining basic infrastructure. Due to the lack of resources, conservation efforts in the region have focused on imported models of protected area systems that have fall short of being effective. Ineffective models of protected area systems, thus, stem from a lack of financial, political and most often resulted in lack of popular support (Govan 2003).

Other actors are private individuals, local communities and other individuals or organizations with entitlements to local resources or land. Local communities who live within or close to protected areas and those who use or “derive an income from their natural resources, ...possess knowledge, capacities and aspirations that are relevant for their management, and ... recognize in the protected area a unique cultural, religious or recreational value” are stakeholders in co-management. Because communities differ in their “ethnic origin, class, caste, age, gender, religion, profession and economic and

social status,” not every community is going to share the same interests or concerns which can cause differences in their willingness to invest in co-management (Borrini-Feyerabend 1995).

Governments in the Central American region typically are not supportive of indigenous communities. Often these institutions do not represent and are not accountable to these local communities. As a result, indigenous communities in the region face considerable odds, and often lack organizational skills and financial resources (Govan 2003).

By acknowledging and incorporating the various stakeholders in the process of co-management and building trust between stakeholders, this increases their capacities to accomplish the conservation goals of the protected area (Barborak, et al. 2002).

All of these actors in co-management interact in various capacities in different co-management projects and there is no set framework for co-management. For example, at Kakadu National Park in Northern Australia, the land is legally owned by aboriginal communities as an inalienable freehold title (Lane 2001; Hill 1993). The Commonwealth Government then leases the land from the aboriginal owners to be managed as national park. Thus, the Aboriginal community receives a direct financial benefit from the park from the rent paid by the Commonwealth, while not actively engaging in the management of the area (Lane 2001; Hill 1993). In New Zealand, the Maori people are working with the government toward a participatory role in the management of several small islands that they use for muttonbird harvesting. To gain widespread acceptance of the agreement, several mechanisms were put in place to build trust between the Maori people and the government. Since the Maori themselves do not have the capacity to fully monitor the area, research is being conducted by the Universities of Otago and Rakiura Maori (Taiepa, et al. 1997). At the Sierra de las Minas Biosphere in Guatemala, the Guatemala government passed specific environmental legislation that delegated management authority to a local NGO: Defensores de la Naturaleza. The law also mandated an oversight board to be established chaired by CONAP, the country’s protected area umbrella agency, with representatives from local governments, landowners and indigenous community leaders (Secaira 2001). In Belize, The Rio Bravo Conservation is owned and managed by a private NGO, the Programme for Belize (PFB). While there is no mandate from any authority for PFB to work with local communities or engage in any co-management practices, PFB has been working with local communities for many years. Though PFB retains all decision-making duties, it does work with the local communities to educate the people to the importance of protecting the resources in Rio Bravo as well as allowing limited, sustainable extraction activities in buffer areas along the perimeter of the protected area (Wallace, et al. 1998). The Community Baboon Sanctuary in Belize offers yet another example of co-management. It is quite different than the previous protected areas in that it composed of land voluntarily offered by landowners along the Belize River. The volunteers take a pledge to leave a strip of trees and other vegetation along the river corridor as primary habitat for the howler monkeys, and to protect trees along property fence lines and when clearing farmland. This is truly a community-based initiative, with a local community-based organization working with seven villages to implement the project (Alexander 2000). These examples clearly

demonstrate that the framework ‘co-management’ is broad and is defined differently, depending on the specifics of each case.

3.2 Community Participation

3.2.1 Introduction of Concepts and Theories

Since co-management involves shifting management power from a predominantly outside entity, be it national or international organization, to one of shared responsibilities with local communities, it stands to reason that, one key aspect of co-management is active (and effective) community participation (USAID 2003). Without effective community participation strategies and implementation, co-management regimes will not be successful. Thus, this section will build upon some of the theories behind the concept of co-management introduced in the above sections and outline some of the main criteria necessary for effective community participation.

Decentralization and Environmental Governance

As stated in the previous section, co-management is the decentralization of power or authority in natural resource management from a government agency or ministry (traditionally) to one of shared governance with local organizations or communities. Therefore, in order for the communities to be involved with managing the natural resources of the area, community participation strategies are a critical element. Thus, before examining criteria and methods of community participation in natural resource management, the concepts of both decentralization and governance will be defined in order to better understand some of the critical elements of community participation and to understand the importance of community participation in light of co-management.

Governance is a framework of rules, institutions, and practices that set limits and provides incentives for the behavior of individuals and organizations (UNDP 1999; Petrova, et al. 2002). Governance has been defined as the “set of values, policies and institutions by which a society manages economic, political, and social processes” (Cheema 2000); as the “manner in which power is exercised in the management of a country’s economic and social resources for development” (World Bank 1992); and as “the process of decision-making and the process by which decisions are implemented” (Petrova, et al. 2002). Thus, an array of economic, political and social factors must be considered in the environmental decision-making process.

While governance is the method in which decision are made, decentralization is “moving the locus for decision making power and management from a central institution to institutions or organizations closer to places those decisions affect” (Wyckoff-Baird, et al. 2000). Moreover, decentralization requires both power transfers and accountable representation (Ribot 2002). That said, however, power over decision-making is usually not fully transferred i.e. power, authority, and funding capacity are not necessarily entirely shifted entirely from one central agency to another, but rather governance is shared. However, in order for local populations properly act on the rights or obligations

delegated to them through the decentralization of power, they must first know the law (Ribot 2002).

There are potential benefits for conservation associated with all types of management regimes, but none are without potential problems as well. When public agencies completely control the process, local knowledge and skills in resource management often go unrecognized, as has typically been the case with protected area management (Borrini-Feyerabend 1995). Conversely, if decision-making authority is entirely transferred to local communities, it is possible to be co-opted by powerful individuals for their private interests. Thus, it is imperative for co-management strategies to balance power delegated to different stakeholders. In turn, this requires all stakeholder groups to be organized and capable of conveying their positions and willing to compromise in order to reach an agreement. Otherwise time and resources invested in the co-management process may be futile (Borrini-Feyerabend 1995).

Partnerships and Capacity Building

To truly share governance or co-manage protected areas, alliances must be formed to support conservation efforts at international, national and local levels (Margoluis 2000). However, decentralization of authority does not in and of itself create alliances (Wyckoff-Baird, et al. 2000); furthermore, the interaction between various actors ultimately leads to the success or failure of co-management. Thus, strategic alliances in the design and execution phases of project implementation are imperative. Stakeholders rely on social and economic conditions, political stability, participation rights and representation in the decision-making process. Therefore, four basic criteria must be present in order to form effective partnerships: trust; reciprocity and exchanges; common rules, norms, and sanctions; and connectedness within the networks and groups (Pretty 2003).

The term social capital refers to the social norms that are critical for sustainability. In other words, if social capital is high in formalized groups, people have higher confidence to invest in collective activities. Groups have been formed that center on watershed, forest, irrigation, pest, wildlife, fishery and microfinance management, offering insights to sustainable management and governance of common resources and leading to sustainable outcomes for natural resources in many of the world's ecosystems (Pretty 2003).

A project implemented by an alliance is affected not only by the efficacy of participating organizations, but also by how well they work together. Many characteristics that are important within individual organizations can be applied to alliances, such as clearly defined membership, structure, clarity of goals, decision-making processes, leadership, and clarity of roles for the different stakeholders (Margoluis 2000). Also important is communication between all parties (Hough 1988). In addition, division within alliances may be perpetuated by cultural differences, whether between urban natural resource managers and rural communities, or between international conservation organizations and local communities (Hough 1988).

Governments can be valuable members of alliances especially if a collaborative working relationship is created with the NGO. Effective relationships can compensate for lack of government capacity. By maintaining this collaborative relationship with the government agencies, the NGO also has influence over government decisions. From the government's perspective, in order for them to be willing to engage communities in co-management, "they must be convinced that the required investment of resources to help develop social and human capital, through participatory approaches or adult education, will produce sufficient benefits to exceed the often very considerable transitional costs" (Grootaert 1998; Dasgupta and Serageldin 2000). In other words, it is necessary for the local communities to be organized themselves, in order for government agencies or NGOs to invest the time and finances necessary in order to develop a co-management plan for the PA.

Research by Borrini-Feyerabend (1995) states that local managers should pursue partnership agreements if 1) the local stakeholders have historically been given legal rights over the territory at stake; 2) local interests are strongly affected by the way in which the protected area is managed; 3) the decisions made are complex or highly controversial; 4) the agency's previous management has clearly failed to produce the expected results; 5) the various stakeholders are ready to collaborate and request to do so; or 6) there is ample time to negotiate. While it is nearly impossible for all of these conditions to be present; however, at least some should be before pursuing partnerships.

Conflict Management

Decentralization of power often results in conflict between stakeholders, particularly pertaining to the transfer of authority over natural resource use (Ribot 2002). Thus, addressing and recognizing these conflicts are a critical aspect of effective community participation efforts for protected area managers. In natural resource management, conflict can take on multiple forms such as differences in stakeholder attitudes and beliefs, misunderstandings/lack of information, poorly defined policies, inequity in resource distribution, and disagreements with respect to management plan implementation (Yaffee and Wondolleck 2000). Conflict is bound to occur at a variety of levels, from the local, national and international scale due to the complexities and relationships between natural resources and their users. For some, conflict is seen as a problem which hinders effective collaborations but others have learned that conflict can be beneficial to improving management options and finding new ways to solve problems (IRDC 2003). Therefore, conflict management, mediation mechanisms and access to recourse are needed. Modern processes of conflict management are quite close to the processes used to negotiate a co-management agreement; both express the same values (dialogue, transparency, pluralism, fairness, etc.), have the same main constituents and can be facilitated in similar way (Babbitt 1994).

Conflict management is defined as a non-violent process that promotes dialogue and negotiation to transform conflicts to a constructive rather than destructive outcome. Thus, conflict management requires:

- Addressing disagreements before they lead to hostility (Babbit 1994).
- Recognizing the perspectives of the various stakeholders (IRDC 2003).
- Determining strategy to address the conflicts (IRDC 2003).
- Exploring a multiplicity of options for agreement, negotiating with relevant stakeholders and subsequently selecting an option everyone can live with (Babbit 1994; IRDC 2003).
- Analyzing the conflict to understand the underlying causes of conflict in order to prevent future conflicts (Babbit 1994; IRDC 2003; Borrini-Feyerabend 2000).

3.2.2 Background in Protected Area Management

Only in the past couple of decades has community involvement in natural resources or protected area management been recognized as a key component of management plans in order to achieve conservation goals. Local communities have rarely received the attention or necessary analysis from resource managers and conservation projects rarely explain how communities affect conservation outcomes (Agrawal and Gibson 2001). While community participation has been a focus of rural development programs in developing countries since the 1970s, it was not until the mid-1980s that the concept of ICDPs was developed by conservation agencies to recognize the gap between conservation and rural development and to link them by incorporating community participation (Little 1994). In most cases, ICDPs have been designed, implemented, and evaluated with little or no local involvement (Brandon and Wells 1992); yet the sponsoring agencies have expected communities to be involved in implementing the project activities or to provide labor or resources. Even though conservation agencies have begun to see the value of local involvement, there is still a lack of effective participation and strong link between the communities and external conservation agencies (Pretty 2002) (Wells and Brandon 1992). There is also the problem that local communities have not been empowered to manage their own resources without outside interference, or to determine their own conservation and development goals (Little 1994). Thus, one element that is critical to community participation is the empowerment of indigenous or local populations and ensuring that they have a role in the decision-making process (Murphree 1993).

Effective public participation programs provide a forum to integrate social and environmental concerns into the decision-making process, thereby uniting different stakeholders and (ideally) reducing conflicts (Petrova, et al. 2002). There is evidence that community participation in the design of development projects increases both the quality and design of project effectiveness (Brandon and Wells 1992) but the question is, can conservation programs use community participation to achieve conservation goals rather than only development goals? Is a community better off for having participated in conservation? These are two questions that are being asked of ICDPs that don't have an easy answer and unfortunately, haven't been thoroughly analyzed and documented. Also,

there is a dilemma that if local communities participate in protected areas management, they may not make decisions or define needs which are linked to conservation objectives/goals (Brandon and Wells 1992).

Defining Community

The literature on natural resource management has traditionally defined community as a small spatial unit with homogenous social structure and shared norms; but as the complexities of communities (status, political affiliations, economics, religion, social prestige, etc.) have been recognized, there has been a shift away from these assumptions (Agrawal and Gibson 2001). There are multiple interests and individuals within each community; therefore, empowering local people to manage their natural resources is more than decentralizing authority over natural resources. The challenge is to understand their differences, how they interrelate, what the external actors are, and how institutions affect them. Since all interactions are occurring within a larger context, communities' behaviors, interests, values, etc. are influenced over time, making it difficult to address everyone's issues.

Defining Community Participation

Participation has become one of the buzz words in conservation and development projects and has been interpreted in many different ways:

- “A developing process of collective learning that changes the way that people think and act” (Pretty 2002).
- “An active process by which beneficiary or client groups influence the direction and execution of a development project with a view to enhancing their well-being in terms of income, personal growth, self-reliance or other values they cherish” (Paul 1987).
- “The organized efforts to increase control over resources and regulative institutions in given social situations on the part of the groups and movements” (Paul 1987).

More specifically, local participation has been defined as: “Empowering local people to mobilize their own capacities, be social actors rather than passive subjects, manage the resources, make decisions, and control the activities that affect their lives” (Well and Brandon 1992). This definition implies that local people will consistently be involved in project issues rather than their occasional or limited involvement in day-to-day activities.

NGOs involvement in community participation strategies

In order for NGOs working with conservation and development projects to promote community participation they can employ agents of change (field workers, extension workers, community organizers) and build local institutions (Wells and Brandon 1992). The agents of change should be from the local communities or implementing agencies and build the relationships between the implementing agencies and local people. Their

main purpose is to promote community participation and build local institutions instead of telling people what to do. In building local institutions, this is defined as: “the creation of procedure or democratic decision-making at the local level and the involvement of local people in these procedures to the extent that they [come to] regard them as the normal way of conducting community affairs” (Wells and Brandon 1992). This enables local people to mobilize and act as a link between local people and the outside implementing agencies.

3.2.3 Benefits of Community Participation

Effective public participation brings additional information that may not otherwise be considered in the decision-making process by bringing together the various stakeholders in a forum to exchange information (McKinney and Harmon 2002). Public participation assists managing agencies in identifying and understanding the communities’ interests and in turn assists government officials in developing more substantive policies based on broader perspectives. Public participation provides an avenue to integrate social and environmental concerns into the decision-making process and thereby produce decisions that support sustainable development. It also provides a means to manage social conflicts by bringing different stakeholders together (Petrova, et al. 2002). Public participation can lead to more informed policy decisions, “provide a normative justification for governance, and foster social, psychological and political empowerment” (Steelman and Ascher 1997). Moreover, it can promote environmental equity to disenfranchised community groups (Hampton 1999). Other advantages are as follows (CSOPP and UNDP 2000):

- It increases the efficiency of project activities by involving local resources and skills, thereby making better use of expensive external costs.
- It can increase the effectiveness of such activities by ensuring that, with people's involvement, these activities are based upon local knowledge and understanding of problems and will therefore be more relevant to local needs.
- It helps to build local capacities and develop the abilities of local people to manage and to negotiate activities.
- It can extend the range of project activities by sharing the responsibilities of an activity.
- It can identify key stakeholders who will be most affected by the activities;
- It can help to secure the sustainability of the activities as people assume ownership.
- It can help to improve the status of women by providing the opportunity for them to play a part.

3.2.4 Challenges of Community Participation

Researchers have found one of the most prominent challenges of integrating communities into the decision-making processes of conservation projects is the lack of time allotted due to short funding cycles and project timelines (McKinney and Harmon 2002; Walters, Aydelotte and Miller 2000). Along those same lines is the time and expense required for

integrating community participation into projects (CSOPP and UNDP 2000). It can be difficult to justify spending the resources on promoting participation when resources could be spent on poverty issues instead (CSOPP and UNDP 2000). As stated previously, natural resource management issues are complex and community members may not fully understand them without proper education and information; thus, involving communities is a lengthy process requiring both time and money (Walters, Aydelotte and Miller, 2000). In addition, this exemplifies the need for proper information and education channels for community members in order for them to be effectively involved. In the end, balancing expertise with public opinion can be inefficient and a challenging process (Steelman and Ascher 1997; Walters, Aydelotte and Miller 2000).

Another challenge identified is the lack of capacity of both government officials and ambiguous mandates from protected area legislation. The lack of a clearly defined framework for community participation in legislation and unclear mandates from legislation ultimately result in confusion for all stakeholders involved (Steelman and Ascher 1997). Furthermore, government personnel charged with public participation efforts are often not trained or experienced with public involvement techniques. Most efforts have failed due to unsubstantiated commitment from bureaucrats and perceived apathy on behalf of the public (Steelman & Ascher 1997). Thus, if public participation is going to be a viable part of the policy process, then public officials' role in the process must be clearly defined (Walters, Aydelotte and Miller 2000).

The community themselves add complexity and challenges to the participation process. The obstacles to participation within and outside communities include (Singh and Lal 2001): 1) Socio-cultural issues due to unequal social structures that keeps some from participating in the decision-making process, 2) Socio-psychological issues due to unequal social structures that alienate the "have-nots" and generate fear that they can't demand their share of participation, 3) Politico-administrative issues (attitude and commitment of political leaders), and 4) Project related issues (nature and design of project) which can affect participation.

Communities are heterogeneous entities themselves. Thus, community participation efforts must consider subdivisions within the community; moreover, if more than one community involved or potentially affected, then there may be additional differences to be considered (Borrini-Feyerabend, et al. 2000). Due to the diversity within each community, preferences given by community may be inconsistent and may lead to conflict (Steelman and Ascher 1997).

Due to the complexity of the conservation and development projects, it is also difficult to ensure participation of all stakeholders—what helps one group may be a detriment to another (Brandon and Wells 1992). Rural communities are faced with the everyday challenges of poverty, economic exploitation, population growth, weak policies, and lack of localized skills and resources (Western 1994), which makes conserving biodiversity the least of their priorities. It has also been documented that local communities perceive their challenges to be their distrust of those with power, their reluctance to take risks, their fear of economic consequences, their fear of overstepping customary roles, their

sense of powerlessness, and their lack of skills in planning and problem-solving (Srinivasan 1990). Furthermore, conservation and development projects often shift the burden to the poor (CSOPP and UNDP 2000).

As a result of all these challenges, many of the local people don't have a stake or incentive to participate in conservation and development projects and once the outside agencies leave, the projects disintegrate. Conservation and development projects will take a long time to overcome these challenges which conflicts with the sense of urgency to protect biodiversity. To remedy this, the projects should produce tangible evidence of the beneficial results of its activities to convince people to voluntarily participate.

3.2.5 Basic Criteria of Community Participation for Co-Management Projects

For many conservation and development projects, the planning documents include local participation but it is not clearly defined what that is and how it will help to reduce threats to biodiversity (Wells and Brandon 1992). When thinking about community participation, conservation and development projects need to know what kind of participation it wants; its purpose; who will participate and at what level; who will benefit and how; what needs to be done to get the kind of participation it wants; and what the indicators are to know if the process is effective (Srinivasan 1990).

While there is no single definition or framework for integrating community participation strategies into the decision-making process, there are overarching criteria that must be met in order for public participation efforts to be effective. First, all major parties and potentially affected groups should be identified and involved in the participation process (Hampton 1999). To increase public support for conservation and development projects, implementing agencies should identify who the protected area users are, both current and projected. Their needs must be assessed in order to know if they will be met when the project activities are implemented. Other studies have found the creation of a protected areas council consisting of local representatives and the implementing agencies to be effective. In these cases, the council met on a regular basis to provide information on the uses of the area and status of the resources, as well as, discussing changes needed in the management of the area (Munro 1995).

Another key element in community participation is openly disseminating information and allowing communities access to information on the issue (Petrova 2002; Hampton 1999; ANGOC and ELCI 1989). The communities and other stakeholders who will be affected by the decisions made must have information in order to be able to make informed decisions. Often natural resource management issues are technical and complex problems. Therefore, in order for communities to be able to make substantiated comments based on facts instead of pure emotion, they must have adequate information. Other ways to get local involvement is to have local people help with gathering information. Project managers can collect information from the local people or local people can gather the data, which is eventually shared with the communities. Local people can also provide feedback during the project's design, implementation, and/or evaluation stage (Wells and Brandon 1992).

In addition to providing information to community members, education and training in project activities may improve community members' capabilities. The communities often need trainings to enhance skills such as planning, organizational skills, business and financial management and communication skills before they are able to effectively work with national or international organizations (USAID 2003). Some of these include conducting workshops, identifying leaders in the community to carry out activities, developing educational materials, developing economic alternatives, linking up with other organizations, forming local committees, developing incentives, and conducting public meetings to inform the community. The list could go on and on because the possibilities depend on the participants' imagination and needs (Oakley, et al. 1991).

Next, the effectiveness of the participation will depend on the quality of participation; in other words, how early and extensive in the process the managing agencies incorporate public participation in the decision-making processes (Petrova, et al. 2002). It is generally accepted that participation should start early in the project development process and that community participation from the early design and development stages increases the quality of the project. (Hampton 1999). Previous research has shown that involving communities in the early stages of project design and development increases the overall effectiveness of project implementation, and in turn, will increase the sense of responsibility and ownership of the project within the community (Petrova, et al. 2002). However, protected areas were often created without any form of public involvement. Therefore, there is often a long history of mistrust on the part of community members. Thus, in order to get the communities involved in management, one of the first steps is establishing relationships and trust, as well as building capacity within the communities to be able to make informed decisions.

Full involvement is also affected by how individuals are approached by project staff or implementing agencies. If outside agencies come into a community with its predetermined ideas and management plans, the local people will resist. Therefore, implementing agencies need to find ways to enter a community while also empowering them to take on projects that will benefit the community.

Another major criterion is accessibility to participation and accountability of proper procedures that are credible to participants (Petrova, 2002; Hampton, 1999). In other words, the interested parties must have access and be able to obtain information about how to participate in the process. The communities have the right to intervene in the decision-making process, and should be able to express their views and opinions. The community participation process should be tolerant of various points of view. Thus, participation will support environmental equity by providing conditions and resources for communities to openly voice opinions (Hampton 1999).

Participation is a process over a long period of time which can be viewed as a goal to empower local communities to have greater control over their lives and resources and as a means of achieving improved social and economic objectives (Little 1994). Several

types of participation have been identified by conservation and development projects- they are as follows (Ulfelder and Poats 1999):

- **Passive participation:** This occurs when outside conservation and development agencies come into a community to provide information about something that is going to happen or has already occurred and asks people to participate. The community's response is not taken into account and information only comes from the agencies outside the community.
- **Contractual participation:** This occurs when outside agencies include community participation as a formal arrangement where the agency provides materials and technical assistance and the community participates by providing labor. There are limited opportunities for communities to share information or their opinion with the agencies.
- **Consultative participation:** This occurs when outside agencies define the problems and solutions but may modify these based on information from consultations with communities. The information is collected (desires, opinions, and needs of the people) from the communities and solutions are proposed to the community.
- **Collaborative participation:** This occurs when both the communities and outside agencies participate equally in the diagnosis of the problem, analysis of data, and the design, implementation, monitoring, and evaluation of a solution.
- **Participation between colleagues:** This occurs when outside agencies try to empower the local systems to become "self starters" and strengthen their capabilities to carry out their own conservation and development projects.
- **Self-starting communities:** This occurs when communities organize itself to identify a problem and its solution without an outside agencies' initiative.

Many conservation and development projects are trying to get away from passive local participation, where people are told what to do to a more active approach where people are involved in the process (Wells and Brandon 1992). This can be done by using less of a top-down approach by incorporating active local participation not only from the beginning of a project, but into the overall project planning cycle.

Examples of community participation in co-management

Kakadu National Park in Australia's Northern Territory has been said to be a successful case study of co-management (Lane 2001). While previous conflict existed between indigenous peoples and the government regarding establishment of parks, the government established a co-management agreement in 1978. A successful component of the project has been the empowerment of the local communities. This has been accomplished through power given to the local communities. The aboriginal owners constitute a majority on the Board of Management, the center of park management decision making. Giving the communities decision-making power gives them an invested interest in the project (Hill 1993). In addition, early in the process an avenue for communities to be involved was created and provided an avenue to discuss issues and resolve conflicts. This fostered the relationships between the traditional Aboriginal owners and the non-

Aboriginal staff in the early days and has since laid the foundation for the successful co-management. In addition, building relationships based on mutual trust and respect ameliorated the building of networks to cohesively work together. These early successes of forming cross-cultural relationships have set the stage for future co-management projects (Lane 2001; Hill 1993).

On the other hand, in Guatemala at the Sierra de las Minas Biosphere Reserve, the government recognized that not including the key stakeholders in the reserve's formal decision-making, at least in the early stages, proved to be a critical issue for reserve development. Moreover, the managers concluded that it is more important to keep key constituents involved in resource management than to initially set up a representative oversight board. They realized that this should be set as a long-term goal that required establishing key relationships first (Secaira 2001).

No matter which citizen participation strategy is chosen, decision-makers must appropriately connect the participation strategy to both the purpose for participation and the nature of the issue being considered in order for the process to be effective (Walters, Aydelotte and Miller, 2000). "Failing to include the public in decision-making process deprives decision makers of valuable input and compromises legitimacy. Thus, considering both expertise and public opinion in tandem is more likely to produce good public policy" than providing no mechanism for public participation (Walters, Aydelotte and Miller, 2000).

Sustaining Community Participation Momentum

The sustainability of a project strongly depends on whether or not the local communities participate and whether they link conservation with economic development. The more a community values the resources and sees tangible, beneficial results from the project, the easier it is to justify conservation (Western 1994). In order to have sustainable participation, the following should be taken into account: 1) the people's interests and needs must be recognized in the actions and decision-making of the project, 2) their knowledge and skills must be seen as a positive contribution to the project, 3) women must be empowered to participate, 4) local people need to have responsibilities to avoid absolute control from outside agencies, 5) local people need to be encouraged to take action, and 6) the project should be flexible to adjust with changes that may occur (CSOPP and UNDP 2000). Effective participation can take time and should be done at the pace set by communities that are comfortable to their lifestyles. Consistency and follow-up/through with project activities are also very important to keep the momentum of the project strong. Maintaining regular contact between people and project staff and having reliable external support helps communities take hold of their responsibilities.

3.2.6 Summary of Community Participation

Community participation in projects that integrate conservation and economic development objectives is a very complex issue that still faces many challenges. It is one thing to have people participate in development projects, but it can be even more difficult

to get people to participate in conservation projects as well. There is still the idea that the two contradict each other and the conservation agencies have the difficult task to change people's perceptions and attitudes. Unfortunately, many conservation agencies are still trying to figure out how to accomplish this as well as protect biodiversity with limited time, funds, and human resources. In order to link conservation and community interests, local communities and outside agencies need to find common interests to build a working relationship and work toward finding solutions together. Given all the obstacles to this type of relationship, there are many communities and conservation and development agencies working all over the world to find a way to make it work. It is now time for resource managers to learn from their mistakes, share these findings, and strengthen the movement to incorporate community participation in protected areas management.

3.3 Co-Management Components

The above section outlines some of the basic criteria for community participation efforts necessary to involve local communities in natural resource management. As previously stated, communities have traditionally resented protected areas stemming from the restrictions on income and access to resources that the new government restrictions place on resources that communities have utilized for generations for their daily survival. Therefore, establishing protected areas have often led to financial constraints for local communities, calling for the need for alternative livelihoods for these communities. Furthermore, in order for communities to be involved in natural resource management, they must be provided information, education and training in project activities in order to improve community members' capacities. These two major components of co-management projects—economic demonstration projects and environmental education—will be discussed in detail below.

3.3.1 Economic Demonstration Projects

It is difficult to adequately assess the economic costs of a protected area. The immediate costs are obvious: the price of the land, the foregone revenue from not developing the land, and management and maintenance costs. Given growing rates of poverty and increasing national debts, selling nationally protected areas to developers seems to make sense. The benefits from such transactions are immediate, while the benefits from maintaining biological diversity are less so.

Nonetheless, a protected area has many indirect values that may not be measured by economic means but rather by their ecological importance for ecosystem services. For example, a protected area may provide watershed protection through maintaining natural vegetation. The trees and plants act as flood and erosion control, and therefore contribute to the quality of both ground and surface water. Moreover, on a grand scale, protected forests contribute to climate control (Barzetti 1993).

However, to local people, these benefits are not readily apparent and the protection of biodiversity does not help satisfy their immediate and more pressing concerns of food and shelter that have been taken away by the conservation projects. Moreover, in the

absence of sound environmental education, local communities will not understand why a protected area is necessary. What will be evident to them is that they are losing their livelihoods from not being able to use the land as they had before. They are no longer allowed to extract resources, or to hunt and fish. What they will know foremost about a protected area is not that it helps decompose organic nutrients, but rather that it does not allow them to subsist as they have in the past.

Given this knowledge, many researchers and other natural resource managers from around the world are calling for efforts to assist those people affected by new conservation regulations. They are working to identify alternative projects that assist people in sustainable use of natural areas or, in many cases, wean them from using these areas at all (Barzetti 1993; Belize Audubon Society 1999; Gurung 1995; Salas 2001; Wells 1994). A common term for these projects is Economic Demonstration Projects (EDP).

These projects, if properly implemented, can impact communities in a positive manner. They serve to give communities a chance to regain lost income from the establishment of the protected area (Kothari 1996). Furthermore, people can often learn a new skill, and it can have positive effects on social mobility. The benefits to biodiversity are likewise positive, particularly when local practices, such as unchecked slash-and-burn agriculture or excessive hunting of endangered species, no longer harm the environment. If people can truly make money from non-consumptive activities, then threats to biodiversity are lessened (Barzetti 1993).

It should be stressed that, while EDPs do help local peoples to regain lost wages, the cultural value of forest activities cannot be gained back in the same way. For example, many villagers are spiritually tied to a forested area, and such activities as hunting have cultural significance (Christopher 1996). Moreover, EDPs can alter family structure and, eventually, the culture of a people. This is because new projects are often carried out by different family members, changing the primary income generator. Over time, this could substantially change the structure of a household and eventually a village. More research is needed to ascertain the long-term effects on communities (West and Brechin 1991).

Furthermore, not all people in a village are necessarily interested in participating in a specific project. Consider ecotourism; not all people are interested in working with visitors. While there is a lot of money to be made, it does not appeal to everyone (Barzetti 1993). As such, merely offering one or two economic development projects is not enough to satisfy everyone in a community.

In short, EDPs should not be treated as a panacea for the ill effects protected area designation may have on a community. While they do offer much-needed sources of income in communities that are often very poor, they cannot solve all of the problems inherent in lost rights.

There are many different kinds of economic development projects. In some cases, simple compensation funds have proven effective. This is evident in the United States, where

ranchers and cattle owners in western states have received compensation for lost livestock from wolves that reside in Yellowstone and other national parks. The money used to pay ranchers came from a fund established by a non-profit conservation organization. The funds were obtained through personal donations from citizens (Fischer 1995). While this is effective in the United States, where many people have donated money to help fund such a project, in developing nations this would be incredibly difficult given budget constraints.

Craft production is another popular type of EDP. In Mongolia, for example, the International Snow Leopard Trust has established Irbis Enterprises, aimed at assisting local herders in the Gobi Gurvansaikhan National Park area to create crafts. The money earned from these crafts is meant to offset the cost to the herders of livestock that is lost to the endangered and elusive snow leopard (International Snow Leopard Trust, no date). Similar projects are currently going on throughout the world. Throughout Central America and other regions in the world, one can find crafts produced by local people for tourists to buy. One benefit of this is that residents do not necessarily need to live in an area frequented by tourists, provided they can sell their goods in stores that are located in tourist areas.

Small income projects can include any number of initiatives that assist families or small groups of people in a village. For example, a fund may be set up whereby an individual can seek either a grant or a loan to start up a small animal rearing project, raising anything from chickens to cows. A small project may also include a joint venture of several individuals from several different households, creating a cooperative aimed at a common goal (Belize Audubon Society 1999).

Broader community projects are another kind of EDP. For example, funds may be offered to the community to build a school, improve a road, or create a sustainable and clean supply of water (Gurung 1995). While these projects are not directly tied to the protected area, they do show communities that conservation managers understand their hardships and are willing to compensate them.

No discussion of EDPs around protected areas would be complete without a discussion of ecotourism. Tourism as a whole is a major industry in 125 of the 170 countries in the world, and it is still rapidly growing (Barzetti 1993). Economic gains from tourism to protected areas can be significant. Entrance fees paid by tourists can go back into park management. It is a service-based industry, and generally caters to people from wealthier countries. As such, locals who engage in working with these tourists can charge prices that far surpass the income they would generate through traditional farming or forest extraction. Moreover, if properly managed, tourism can have minimal effects on the environment (Barzetti 1993).

There are also problems created by tourism. First, the profits generated from tourism often go only to a few individuals. This is because tourists often travel with a tourism company located outside of local villages, often times with a company based outside the country. For example, cruise ship passengers may visit a site for a day, but then return to

their boat without having spent a significant amount of money at local establishments (Boo 1990). Furthermore, as stated above, not everyone is interested in working with tourists. As the amount of money that can be made from tourism is quite high, the income disparities within a community can become quite pronounced. This can, in turn, lead to tensions and increased crime within an otherwise healthy, happy community. Other times, people may feel that the tourists are there to look at them, leading to animosity between villagers and tourists (Wiens 1996). One other problem with tourism is the sheer number of tourists that may visit an area, thereby inflicting a great amount of environmental harm (Bouton 2002). It takes only one thoughtless tourist to inflict significant damage on an area (Barzetti 1993), such as leaving trash in an otherwise pristine area, or starting a forest fire. Furthermore, tourism can eventually destroy entire cultures as local people adopt the customs and habits of tourists, thereby abandoning their cultural identities; one need only look at Acapulca, Mexico and Mallorca in Spain, to see how tourism has wiped out the local culture and devastated the local environment (Oliveira 2003).

One way to offset these problems is through a national tourism plan. By understanding the dangers inherent in tourism, nations can develop policies that offset the potential damage that tourism may cause. A small sector of the tourism industry, called ecotourism, is aimed at ‘selling’ the natural environment to tourists. There is no set definition of ecotourism, and it can be applied to any traveler who visits a protected area. These ecotourists are often willing to pay more for access to parks, and, unlike many ‘conventional’ tourists, frequently prefer to stay in local establishments and contribute to the local economy (Barzetti 1993). Any discussion of ecotourism warrants caution, however, as it can cause as many problems for the natural environment as any other form of tourism.

3.3.2 Environmental Education

The field of Environmental Education (EE) has grown and evolved a great deal since William Stapp defined it in 1969 as “aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution (Stapp 1970).” The definition of environmental education was further refined in 1977 at the United Nations Educational, Scientific and Cultural Organization (UNESCO) Intergovernmental Conference on environmental education. Professionals in EE from around the world came together in Tbilisi, Russia to discuss the future of this budding branch of education. Their hope was to discuss ways to encourage people around the world to be aware of and concerned about the environment as a whole and its problems. It was determined that there were five key goals to achieving this type of population. Those goals were: knowledge, awareness, attitudes, skills and participation. (UNESCO 1978).

People need to have a basic understanding and awareness of the environment and the ways in which people can affect it. Environmental education should help people develop strong feelings of concern for the environment and a motivation to do something for its

protection and improvement. Skills are a very important part of environmental stewardship. People could be knowledgeable, aware and have strong feelings toward the environment, but without skills to be able to apply what they know to solutions to environmental problems nothing positive will occur. Finally, people need to be instilled with a sense of responsibility towards participating in action towards helping the environment. (UNESCO 1978)

Traditionally, it was thought that knowledge alone was enough to change behavior. Research on environmentally responsible behavior has shown that this is not true. Hungerford and Volk (1990) have developed a model for environmentally responsible behavior based on prior research in environmental education. They believe there are three groups of variables that lead to changes in behavior. At the base of these variables are the characteristics of environmental sensitivity and knowledge of ecology. But those are only the entry-level variables. Ownership variables are the next level of variables that must be achieved. Characteristics of ownership variables are an in-depth knowledge of issues and personal investment in the issues or the environment. People also need to be aware of how their positive and negative consequences of their behavior affect the environment. The last group of variables that need to be achieved before changing behavior can occur are labeled empowerment variables. Characteristics of these variables include knowledge of and skill in using environmental action strategies, locus of control and an intention to act. (Hungerford and Volk 1990)

There has been some controversy in recent years as to whether environmental education needs to be re-labeled to sustainability education or education for sustainability. It is believed that sustainability education includes all the characteristics of environmental education but goes a step farther in integrating not only the environment into education but also economics and equity. (Higgs and McMillan 2002) Sustainability education is felt to help people think in terms of whole systems instead of individual components of the system. Many still believe that EE includes the theories of sustainability education and to change it would decrease the credibility that EE has fought to gain over the years since its birth.

Environmental Education has had its challenges in being respected in the educational community. It is felt that environmental educators often do not use sound educational pedagogy in their environmental education programs. Many say that environmental education is nothing more than environmental advocacy. John Hug (1977) discusses the two hats that environmental educators must wear. As educators, it is important to take a neutral stance on the issues and let the students use what they have learned to make informed decisions. As environmentalists, environmental educators want their students to see the importance of the issues affecting the environment today. This is a delicate balance that must be achieved.

Environmental education is often viewed as being for students in schools or for tourists visiting nature centers or zoos. These are two very important audiences for environmental education, but it is for everyone. By looking at the goals of environmental education, one can see that it could help adults in certain circumstances to provide them

with knowledge and skills to help them participate in solving environmental problems that affect them. Rachel Kaplan (1982) states there are at least four critical elements participation. The first one is that the participant feels that there is a possibility for genuine impact. Behavioral research has also shown that when people commit to a course of action that is their idea, results are more likely to succeed and continue than when ideas are imposed from the outside or handed down from above (Day and Monroe 2000). In the example from the Rio Bravo protected area in Belize, even though the land was privately owned, Programme for Belize (PfB) was working to involve the community members through environmental education. The organization was working with the local communities to educate the people to the importance of protecting the resources in Rio Bravo. With the knowledge the communities have gained, Programme for Belize has allowed the community members to participate in limited, sustainable extraction activities in buffer areas along the perimeter of the protected area (Wallace, et al. 1998).

Evaluation should always be a major component to any project or program. It is often the mistake of the project manager to not bring in an evaluator until the end of the program (Day and Monroe, 2000). Programs have the opportunity to make more of an impact if they are evaluated through out the whole process. Formative evaluation can be very useful to people developing programs, because it helps to provide information that will help programs succeed. For example, in Nicaragua, experts thought that if local residents understood the impact of egg harvest on the sea turtle population, they would be less likely to harvest turtle eggs. A storybook was written and reviewed by biologists for accuracy. The storybook was tested by giving readers a survey that asked about their attitudes on egg collection and about the quota system set forth by the government. This survey helped to show that the storybook did not highlight egg collection and did not even mention the quota system. Luckily, it was not too late to rewrite the story to better highlight the messages they hoped to convey (Day and Monroe 2000). This example shows the importance of evaluation, especially in the early stages of development of a program or project. In another example, at Sierra de las Minas Biosphere Reserve in Guatemala, education campaigns were able to increase environmental awareness. This resulted in the local communities being willing to invest in concrete projects to protect resources. Community members were also involved in annual evaluation of both themselves and the government in the project. They were also involved in setting goals for the following year, and pledged commitments to the environment. It is clear that the communities developed a sense of ownership of the projects, not just endorsement of government plans (Secaira 2001).

It is important to look to the locals in the area when starting an *in-situ* conservation program (Monroe 1999). This type of collaboration will help in the development of a program that will coincide with the culture, values and traditions of the area. This is especially true because a successful program developed and implemented in one area will not necessarily have the same impact in another area. The use of indigenous national traditions can help revive a culture's interest in and their respect for nature (Monroe 1999).

Chapter 4: Belize

4.1 Background

4.1.1 Geography

Belize is situated on the Caribbean Sea just south of the Yucatan Peninsula in Mexico and bordered on the west by Guatemala. The second smallest country in Central America, the mainland and cayes together cover a total area of 5,510 square miles (8,867 square kilometers). At its longest point, Belize is 174 miles (280 kilometers), and at its widest point is 68 miles (109 kilometers) (Government of Belize 1999a).

Map 1: Belize and Surrounding Countries (American Map Corporation 2000).



Despite its small size, the topography of Belize varies widely. The eastern part of Belize is mainly coastal plain, and much of it is covered with mangrove swamps. The north is flat tableland and contrasts greatly with the south, which is marked by the Maya Cockscomb mountain range. The highest point is Doyle's Delight in the Cockscomb range, which reaches an elevation of 3,687 feet (1124 meters). Off the coast of Belize lies the second largest barrier reef in the world. Belize has a subtropical climate, and receives an average annual rainfall of 51 inches (130 cm) in the north and 175 inches (450 cm) in the south, with the dry season extending from February to May (Government of Belize 1999a). Temperatures range from highs in the summer of 96°F (35.5°C) to roughly 60°F (15.5°C) in the winter (U.S. Embassy Belize 2002).

There are six administrative districts in Belize. Along the coast, from north to south, are the Corozal District, the Belize District, the Stann Creek District and the Toledo District.

The Orange Walk District and the Cayo District are the only two inland districts in Belize.

4.1.2 History

Belize was once part of the vast Mayan civilization that stretched from Southern Mexico to El Salvador, and included present day Belize, Honduras and Guatemala. The Spaniards were the first Europeans to land on the shores of Belize in the early 16th century. In the mid-1600's, British pirates entered the region, and under the 1670 Treaty of Madrid between Britain and Spain, the British committed themselves to controlling the spread of piracy. Over time, the pirates and British soldiers came to settle the region. Logwood and mahogany were the main exports, and soon the British 'Baymen' had built a lucrative. They brought in African slaves from Jamaica to help harvest the timber (Peedle 1999).

Problems in the region between Britain and Spain culminated in the Battle of St. George's Caye. This skirmish resulted in the 1802 Treaty of Amiens that established British rule in the territory of Belize (Peedle 1999). Officially called British Honduras, the region became an official British colony in 1871 (Government of Belize 1999d). In 1961, the colony adopted the Ministerial System, and in 1964 British Honduras officially became self-governing. On June 1st, 1973, the name British Honduras was officially changed to Belize. The name Belize, interestingly, comes from the Spanish mispronunciation of the name Peter Wallece, a pirate who established the first colony in Belize (Wikipedia 1994). On September 21st, 1981, Belize gained its independence from Britain (Government of Belize 1999d).

Though Belize became an independent country, British military forces remained in the country until 1994. This was mainly due to a longstanding border dispute between Belize and Guatemala; as Belize had no standing army of its own, British forces provided security. Today only a small contingent of soldiers remain in Belize for the purpose of training Belizean troops (Barry 1995). While Belize does remain a member of the British Commonwealth, the country is considerably influenced by the United States as well, given its proximity and economic connections to its northern neighbor (Peedle 1999).

4.1.3 Culture

Belize is an incredibly diverse country. Though the total population is only 257,000 people, there are four main ethnic groups as well as several others. The largest of these groups are the Mestizos, which comprise roughly 49 percent of the population. Creoles make up about 25 percent of the population, while Mayan and Garifuna peoples comprise eleven and six percent of the total population, respectively. The rest of the population is composed of East Indians, Mennonites, Chinese, and expatriates from the United States and Europe (Peedle 1999). For the most part, there is relatively little tension among the different ethnic groups, especially when compared to the problems in other Central American countries. Different cultures tend to dominate different regions of the country, with the Mestizos living largely in the north, the Creoles largely in the middle section of

the country, the Mayan in the south, and the Garifuna along the southern coastal region. While the official language is English, Creole, a combination of English and African languages, is widely spoken, as is Spanish (Barry 1995).

Mestizos

The Mestizos originally entered Belize in the mid-nineteenth century after fleeing warfare in the Yucatan Peninsula in Mexico. The term Mestizo officially refers to those individuals of mixed Spanish and Mayan descent who speak primarily Spanish (NaturaLight Productions Ltd 2004c). The term now also includes refugees and immigrants from the Yucatan Peninsula, Guatemala, Honduras and El Salvador who entered Belize in the 1980's (Peedle 1999). The Mestizo population is predominately Catholic and places great importance on the family. Mestizos are located mainly in the north of Belize, surrounding such towns as Orange Walk and Corozal, and many practice subsistence farming. Among their staples are corn, beans, peppers and sugar cane (NaturaLight Productions Ltd 2004c).

Creoles

Belizean Creoles are descendents of the early British settlers and African slaves. For the most part the British settlers came from northern England and Scotland, and the slaves came from West Africa between what is now Senegal and Angola. The word Creole stems from the Portuguese word 'criar', which means 'to raise a child into a family'. Eventually the word changed to 'crioulo' and referred to African slaves and eventually Europeans born in the new world. Today the term Creole refers to those individuals of mixed European and African descent (NaturaLight Productions Ltd 2004e). Creole also refers to language and culture. In Belize, the Creole language, 'Kriol', is a mixture of English and African dialects that can be understood by native English speakers with a little practice. Creole food, like many Creole traditions, has been adapted over the years from many different ethnic groups. For example, chimole and panadas are both adopted from the Mestizo culture, while bambam and dukunus are adopted from Africa. Other staples include rice and beans cooked in coconut milk, as well as fish stew and Creole bread (NaturaLight Productions Ltd 2004e).

The Creole people fought alongside the British at St. George's Caye, an event that is viewed by some as a unifying moment for Creoles and the white settlers (Peedle 1999). However, even after the abolition of slavery many Creoles continued to work in logging camps (NaturaLight Productions Ltd 2004e). There is a small group of Creoles who have been active in Belizean politics and business for years. Dubbed the 'Royal Creoles', they are descendents of Belize's wealthier settler classes (Peedle 1999). Most Belizean Creoles live in and around Belize City and the Belize River Valley, and they remain relatively poor. Over the past two decades, thousands of Creoles have migrated to the United States and elsewhere (Perrottet 1995). Indeed, it is difficult to meet a Creole who does not have a family member or a friend who has lived for some time in the United States.

Maya

The Maya are currently found in Mexico, Guatemala, Honduras, El Salvador, and Belize, with 32 individual Mayan cultures that vary in language, lifestyle, and traditions. In Belize, the three main Mayan cultures are the Yucatec, Mopan, and Ke'kchi. The Yucatec Maya primarily live in the northern and western portions of the country while the Mopan and Ke'kchi live in the southwest. The Mayan people still maintain their traditional agricultural practices and lifestyle, though their thatched homes now often hide color TVs and stereos.

The Maya are predominantly milpa farmers, and use forested areas to gather lumber for their homes, collect medicinal plants, and hunt and fish. Mayan agriculture represents a cultural connection to the land that is as important to them as traditional languages, arts, and ceremonies. The cultivation of corn is connected ecologically, socially, and spiritually to Mayan culture. Today, certain factors threaten their ability to continue farming in the traditional manner. The quality of the soil, population growth, and the Maya's increasing need for revenue from crops sales all contribute to the challenge of maintaining the same farming practices used by village elders.

Mayan leaders and villagers are currently working hard to improve their quality of life. They work with indigenous organizations and on government projects, as well as with one another, to develop strategies for a more positive future. They are trying to balance the socioeconomic needs with their desire to preserve traditions, but progress takes time and can be challenging. Only recently have they secured the rights to use the lands and resources in southern Belize where they have lived for generations. There are other problems that need to be addressed as well, such as developing a solid economic base, creating better educational opportunities, and improving infrastructure (Marsden 2001).

Garifuna

The Garifuna people are descended from Carib Indians and Nigerian slaves. In the early seventeenth century, two Nigerian slave ships sank off the coast of St. Vincent Island and the survivors were integrated into the Carib community. This resulted in the Black Carib or the Garifuna Culture of today. The Garifuna stayed on the island of St. Vincent until 1736, when the British exiled them from the island and moved them to the island of Roatan, Honduras. Some of the Garifuna migrated to mainland Honduras and, following a brief civil war in 1832, fled to then British Honduras. Today the Garifuna can be found in coastal communities in Honduras, Nicaragua, Guatemala and Belize. (NaturalLight Productions Ltd 2004d)

French priests on the island of St. Vincent converted the Carib ancestors of the Garifuna to Catholicism. Many of the Garifuna continue to hold the Catholic faith but still maintain many of the traditions and rituals of their Afro-Caribbean Culture. The Garifuna express themselves with music, dance and art. The popular Belizean music of punta is a musical interpretation of a traditional Garifuna dance. The Anancy spider folk stories come from the Garifuna people. Many Garifuna are tri-lingual, speaking both

English and Spanish and their own language of Garifuna. The Garifuna language is a blend of their Carib and African ancestors. The language also has some French influence, developed during the French occupation of the island of St. Vincent (NaturaLight Productions Ltd 2004d)

Although the Garifuna people are only a small part of the Belizean population, many have gained leadership roles in government. Many of the Garifuna people are employed and the fishing, farming and public service professions. (Georgetown Community Member 2003)

4.1.4 Economy

Throughout the 1800's, timber was the central component of the Belizean economy. Chicle, an extract of the sapodilla tree used in chewing gum, was also an important export. As late as 1935, 82 percent of Belize's exports were forest-based products. Agriculture was difficult for early settlers and was not a central component of the early economy. By 1959, however, citrus and banana exports surpassed forest products as Belize's top exports (Peedle 1999). Today the agricultural sector accounts for 71 percent of the country's total foreign exchange earnings and employs roughly 29 percent of the labor force (Government of Belize 1999c). In 2001, citrus products replaced sugar as the largest export crop, with bananas remaining in third place. Other important crops include papayas, habanero peppers and aquaculture. Marine products, in particular farmed shrimp, are also important to the economy (Government of Belize 1999b). Belize does not have a significant industrial infrastructure, and the only mineral product produced in commercial quantities is limestone (Peedle 1999).

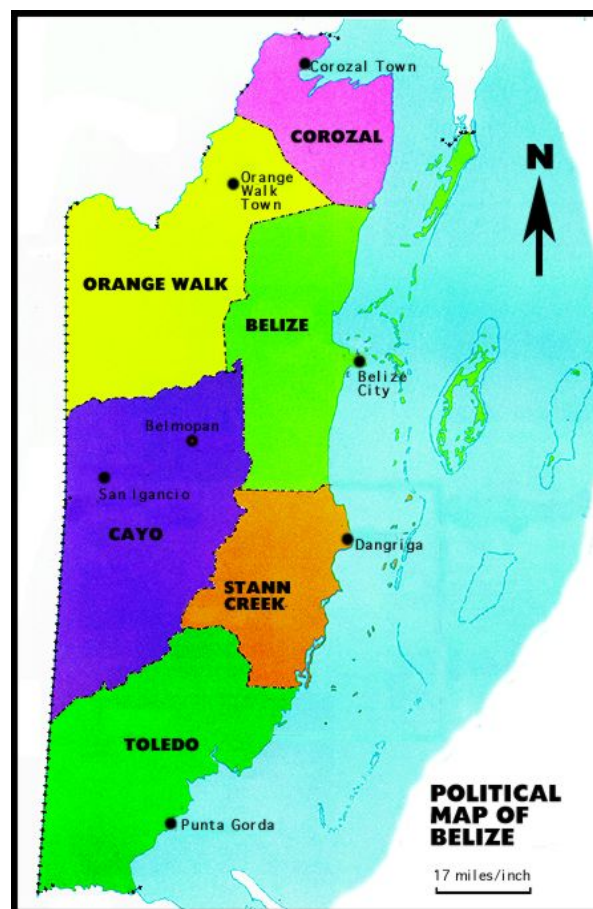
A more recent and increasingly critical part of the Belizean economy is tourism. The Government's manifesto declares tourism to be one of the 'twin pillars' of the economy, along with agriculture (Government of Belize 1999f). While the agricultural sector did contribute to a majority of Belize's total foreign exchange earnings, in 2001 it contributed to only 11.3 percent of the gross domestic product (GDP). In contrast, the service industry contributed to 59.5 percent of the GDP. Tourism is a major component of the service industry, and over the past decade the amount of tourists arriving in Belize has grown exponentially. Cruise ships account for the largest increase. According to the Belize Tourism Board, between 2001 and 2002 there was a 584 percent increase in the number of cruise ships arriving in Belize. There was also a 4.5 percent growth in the number of hotels in Belize (Belize Tourism Board 2004).

Belize is reliant on foreign aid for much of its development work. The Development Finance Corporation, established in 1963, is responsible for channeling international aid money into development projects. Between 1989 and 1994, Belize received an average of \$16.2 million in aid, and while that amount remains high today much of it is now given in the form of loans rather than grants. In the past, aid money generally came from the United States, Great Britain and Canada, though other sources such as the Caribbean Development Bank, the Inter-American Development Bank, the World Bank and the European Union (EU) are becoming increasingly important sources of aid (Peedle 1999).

4.1.5 Politics

Belize is a Parliamentary Democracy based on the Westminster System with the Queen of England as the constitutional head of state. She is represented by a Belizean Governor General who is appointed by her. There are two branches of government, the Executive and Legislative. The Executive branch is composed of a Prime Minister and a Cabinet. The Cabinet Ministers are appointed by the Governor General through the advice of the Prime Minister. Currently there are eighteen ministries. (See Appendix A for complete list of Ministries). The Legislative Branch is composed of a 29-member elected House of Representatives and a nine-member appointed Senate (Government of Belize 1999e).

Map 2: Political Districts of Belize (Belize.Net Inc. 2000)



The administration of the six districts in Belize is carried out by several government sectors, including the District Accountant, the Officer Commanding the District Police, and the Heads of district governmental departments. The main towns in each district have a locally elected Town Council, each with seven members (Belize 2000a). The Town Council of Belize City has nine-members, while the country capital, Belmopan, has seven members on its Town Council. The Village Council Act of 2000 has mandated that a seven member, elected Village Council be created in each village in Belize (Belize 2000b). In addition to the village council, most Mayan villages in southern Belize also

govern themselves through the traditional *alcalde* council, composed of village elders. Similar in structure to the Village Council, the *alcalde*, or mayor, has greater powers than a Village Council chairman and is able to decide who may reside in the village, settle disputes, and determine suitable punishments for crimes. The leader is elected only by the men in a Mayan village (Government of Belize 1999g).

Belize is a sovereign country and is a member of the British Commonwealth, the United Nations, the Nonaligned Movement, the Organization of American States, the Association of Caribbean States and the Caribbean Community and Common Market (CARICOM) (Government of Belize 1999e).

4.2 Environment in Belize

4.2.1 Overview

Belize is home to a vast array of biological diversity. With over fifty percent of its primary forest still intact, the country is home to over 571 species of birds, 163 species of mammals, 121 species of reptiles, 159 species of fish, and over 4,000 species of native flowering plants (Jacobs 1998), including 700 tree and 200 orchid species. Of these species, at least 80 bird species are listed as special conservation concern, and 43 of the mammal species are listed as threatened or endangered (De Vries, et al. 2003).

Thirteen percent of Belize's forest is classified as pine savannah, nineteen percent is classified as mangrove and coastal forest, and the remaining 68 percent is classified as broadleaf forest. It is this last type, the broadleaf forest, which is commonly referred to as rainforest. Rainforests are characteristic of Central America and, in Belize and elsewhere, they are ecologically fragile. The trees and other flora and fauna in the forest form a closed system in which the nutrients are constantly recycled through a process of decaying plants and new growth. When a large number of trees are removed, exposing the lower levels of the forest, the soil becomes open to flooding and drought, both of which can rob it of its nutrients. In addition, it destroys the habitat for native animals that also participate in the closed and miraculous cycle of life (Eltringham 2001).

The coast of Belize also offers an excellent example of the biological diversity found in Belize. The mangrove forests along the shores offer protection from hurricanes and tropical storms, and also serve as breeding habitats for commercial fish species. The coastal lagoon and rivers are home to many types of fish, as well as the endangered Morelet's crocodile and the endangered West Indian manatee. Further offshore is the Western Caribbean Reef System, the second longest barrier reef in the world after the Great Barrier Reef in Australia. This coral reef system stretches almost 373 miles (600 kilometers) from north to south. Further out is a large system of atolls rising from the water (Eltringham 2001). Like the forests of Belize, the coral reef system contains a great amount of biological diversity is very fragile.

4.2.2 Threats to Biodiversity

While Belize does have a low population density, one of the biggest threats to biodiversity is its growing population. Belize has one of the highest growth rates in the Latin American/Caribbean region, with estimates ranging from 2.4 percent to 2.8 percent. The population rose from 190,000 to 257,000 between 1991 and 2001 (Belize National Population and Housing Census 2000). Given that 52 percent of the population lives in rural areas, there is considerable encroachment into pristine tracts of tropical wilderness throughout the country. Moreover, rural areas in Belize are rapidly filling up as immigrants from neighboring countries enter Belize to work in the agricultural sector. This influx of immigrants has been increasing for over two decades (Botnick, et al. 2000), and has created conflict with the existing population of Belize (Eltringham 2001).

The shift from a timber-based economy to an agricultural economy have placed increased burden on the landscape. Whereas timber production often involves partial removal of a forest, agriculture requires the clear-cutting of vast tracts of land. Pesticide use in agriculture is also a growing concern (Jacobs 1998). Traditional milpa farming, which does not utilize as much land as conventional agriculture, is nonetheless being carried out with increasing intensity and often without an established system that allows for the re-growth of forest. Moreover, since 1995 there has been an increase in commercial exploitation of timber. Over 200,000 acres of land in southern Belize has been leased to a Malaysian logging company, sparking opposition among local and international organizations. It has also raised concerns over the land rights of Mayan communities (Peedle 1999).

Tourism is also taking a toll on the fragile ecosystems of Belize. Given the nearly 500 percent increase in cruise ships that come into Belize throughout the year, the effects on the reefs will be critical without proper management. As the number of tourists on land increases, there will be a greater need for more roads and tourism facilities at or near areas of ecological importance. Careful management of tourism will be necessary to avoid environmental harm from this influx of visitors (Peedle 1999).

Land management is also a pressing issue regarding biodiversity. While approximately 40 percent of Belize is legally protected in varying capacities (Eltringham 2001), the remaining land also contains critical habitat for biodiversity. It is difficult, if not impossibly, for the government or conservation organizations to manage this land in any cohesive manner. Moreover, Belize does not currently have a comprehensive land management policy, and what laws do exist are not properly enforced (Botnick, et al. 2000).

4.2.3 Conservation in Belize

“Belize’s major resource as a nation, after its people, is its environment. The environment is a resource only so long as it is protected” (Peedle 1999). Because the natural environment of Belize is still relatively untouched, it will continue to remain attractive to people from around the world. It appears that the natural environment is also

important to the residents of Belize themselves. Recent government administrations have placed increasing importance on the environment, and it was a major platform issue in the 1998 elections (Botnick, et al. 2000). Given that wildlife habitat is in decline throughout Central America, conservation is increasingly.

There are several laws currently in place that dictate conservation management throughout Belize. The responsibility of protecting the natural resources of Belize falls to three government ministries and several different departments. Below is a brief outline of the policies and key players in conservation efforts within Belize.

Policies and Laws

Environmental conservation in Belize focuses predominantly on the use of protected areas to safeguard biodiversity. The current legal premise for protected areas management was established by the 1924 Crown Lands Ordinance and the 1926 Forest Ordinance, both of which extended government involvement over public lands in Belize (CEP/UNEP 1996). Half Moon Caye became the first nature preserve in Belize when, in 1928, it was established to protect the red-footed booby (Eltringham 2001). Early legislation passed in 1941 and 1944 sought to protect the flora and fauna of then British Honduras. However, implementation of these ordinances proved difficult as there was no clear management plan, no mandate to enforce the plan, and no way to educate the public. The Forest Ordinance of 1958 stated that all lands designated as forest reserves were subject to multiple use and sustained yield management (CEP/UNEP 1996). Following the environmental destruction caused by Hurricane Hattie in 1961, Belizeans realized that their natural resource base was, indeed, fragile, and responded by establishing national parks and wildlife sanctuaries throughout the 1960's and 1970's (Barry 1995). The 1977 Fisheries Act also gave the government the authority to regulate the nation's fisheries.

Since the country became independent in 1981 it has carried on this tradition of protecting its natural resources (Eltringham 2001). In 1981, two important acts were passed that further promoted the protection of natural resources in Belize: the National Parks System Act and the Wildlife Protection Act. These two acts are the basis for current protected areas legislation in Belize. Two key elements of the National Parks System Act are very important for subsequent discussions. First, the Act prohibits any sort of resource extraction by anyone, including people from surrounding villages that had heretofore been able to extract flora, hunt and fish the area as part of their livelihood and culture. Second, the Act gives the Minister of the respective agency in charge of the area the power to revoke protected area status. This hinders any long term planning for many protected areas since a Minister can, for whatever reason, revoke protected area status with the stroke of a pen (Belize 2000). It should be noted, however, that the dereservation of a protected area has not occurred in Belize (Salas 2004a).

In 1996, the Protected Areas Conservation Trust (PACT) was formed to provide long-term funding opportunities for conservation in Belize. The government has, to date, signed twenty international environmental agreements, including the Ramsar Convention

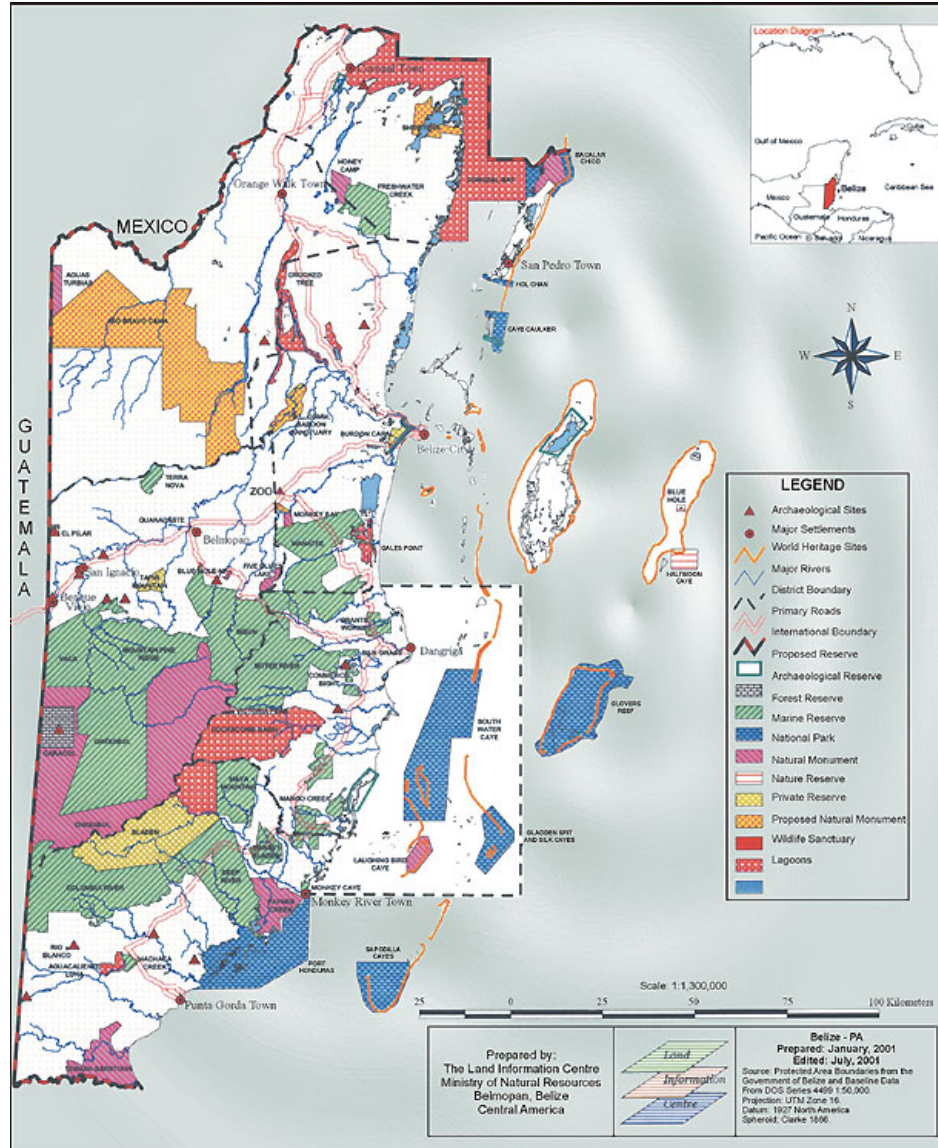
on wetlands of international importance, the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention, and the Convention on International Trade in Endangered Species (CITES) (Eltringham 2001). Belize is also part of the Mesoamerican Biological Corridor (MBC) and the Mesoamerican Barrier Reef System (MBRS) initiatives, both long-term projects funded by the Global Environmental Facility (GEF) (De Vries, et al. 2003).

Creating and managing protected areas in Belize is a complicated process. The various laws and other pieces of legislation passed throughout the years have given authority over protected areas to different agencies within the government. In order to create a protected area, an individual or an organization must go through the legislative process. First, the appropriate ministry needs to be contacted; the three ministries that deal with protected areas are the Ministry of Natural Resources, Environment, Commerce and Industry, the Ministry of Tourism, and the Ministry of Agriculture, Fisheries and Cooperatives. The 'appropriate' ministry is determined by criteria established by the International Union of the Conservation of Nature and Natural Resources. If the ministry agrees, then it will send a public notice declaring the intent to designate the land as protected. If protected area status is granted, then the aforementioned ministry will administer the protected area. However, certain parts of the protected area may be headed up by other ministries (Botnick, et al. 2000).

There are many different types of protected areas and they are governed by the National Park System Act, Forests Act, Fisheries Act, National Institute of Culture and History Act, and the National Lands Act (Meerman, et al. 2004). The National Parks System Act declares National Parks, Nature Reserves, Natural Monuments, and Wildlife Sanctuaries, while the Forest Act governs Forest Reserves and the Fisheries Act governs Marine Reserves. There are also archaeological reserves and private reserves (PACT 2004). (See Appendix B for a complete list of protected areas in Belize).

Perhaps the biggest impediment to protected areas management in Belize is the lack of a systematic national plan for managing all of the protected areas. In 1998, a national biodiversity strategy plan was drafted, but thus far it has not been implemented. Of the 71 national parks and protected areas in Belize, less than 25 percent have management plans or personnel, and hence despite their legal designation many 'illegal' activities continue inside of them, including milpa farming, looting of archaeological sites, hunting and fishing, and other such activities (Jacobs 1998). Currently a National Protected Areas Policy and Systems Plan Initiative (NPAPSP) is being developed, but the final draft is not slated for completion until March of 2005 (Salas 2004a).

Map 3: Protected Areas in Belize (Land Information Center 2002).



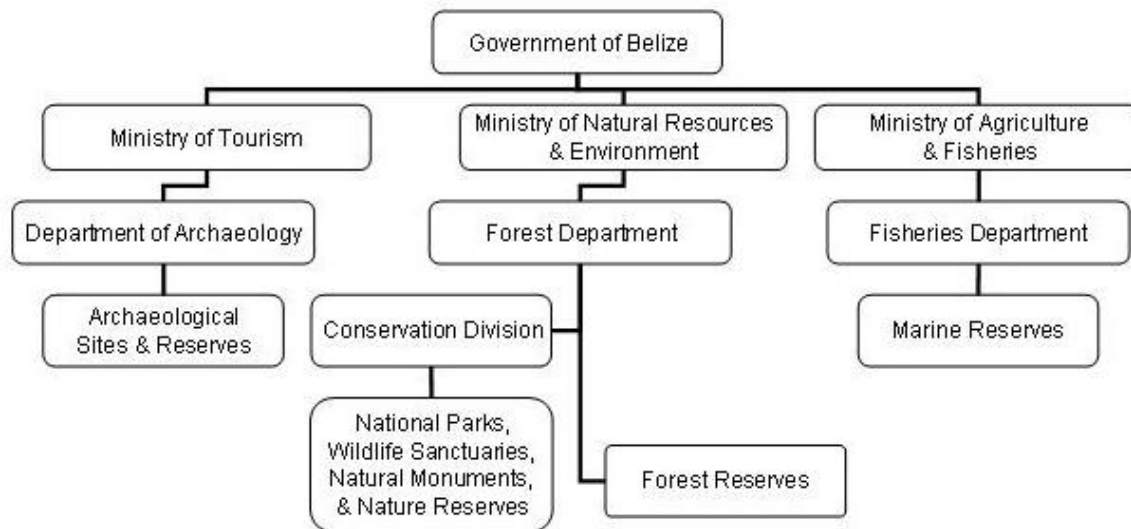
The current focus of natural resources protection is on land conservation. This is part of a government plan to make 'ecotourism' a focal part of the nation's tourism industry and, therefore, economy (Eltringham 2001). It should be noted, however, that the government has taken steps forward in addressing increasing pollution and other forms of environmental degradation. In 1992, the government passed the Environmental Protection Act intended to control pollution. This act established the Department of Environment as a fully functioning section of the Ministry of Natural Resources, Environment, Commerce and Industry (Government of Belize 2003). The government also developed an environmental impact assessment process for major development projects. The National Environmental Appraisal Committee (NEAC) is charged with carrying out these environmental impact assessments, and is composed of government officials and NGOs (Botnick, et al. 2000).

Governmental Organization

Three government ministries are responsible for drafting and implementing the laws relating to environmental management: the Ministry of Agriculture, Fisheries and Cooperatives, the Ministry of Natural Resources, Environment, Commerce and Industry, and the Ministry of Tourism. That three different ministries are in charge of environmental protection can slow conservation efforts and necessitates constant communication between the ministries. To add to the confusion, within each ministry different departments are actually responsible for overseeing conservation efforts at different protected areas.

The Department of Fisheries in the Ministry of Agriculture, Fisheries and Cooperatives, has jurisdiction over most marine reserves in Belize. Within the Ministry of Tourism, the Department of Archaeology has jurisdiction over archaeological reserves. Within the Ministry of Natural Resources, Environment, Commerce and Industry, the Forest Department has responsibility for any protected area established under the National Parks System Act and the Forest Act. These include national parks, wildlife sanctuaries, national monuments, nature reserves, and forest reserves. Significant overlap in responsibility occurs between departments. For example, the Department of Archaeology oversees many of the archeological sites within lands managed by the Forest Department. The Forest Department also must work with the Fisheries Department in overseeing coastal and intertidal wetland zones (Government of Belize 2003).

Figure 2: Hierarchy of Ministries in Charge of Protected Areas (De Vries, et al. 2003)



Non-Governmental Organizations

Conservation organizations play a critical role in protecting the natural environment of Belize. Since the government does not have the financial resources to support many of

its protected areas, it relies on assistance from local community based organizations (CBOs) and non-governmental organizations (NGOs). NGOs have been instrumental in lobbying the government, writing laws, educating the public, and raising funds for conservation.

Among the most prominent local non-governmental environmental organizations in Belize are: the Belize Audubon Society (BAS), the Programme for Belize, The Toledo Institute for Development and Environment (TIDE), the Belize Zoo and Tropical Education Center, Friends of Laughing Bird Caye National Park, and the Green Reef. There are also many international organizations working in Belize, including the Wildlife Conservation Society (WCS), the World Wildlife Fund (WWF), and the Nature Conservancy (Eltringham 2001). These international NGOs fund both protected areas initiatives and other environmental quality concerns (Barry 1995).

4.3 Co-Management in Belize

4.3.1 Introduction

In Belize, the co-management of protected areas is practiced between local, private, NGO, and national level organizations. In addition to the increasing numbers of co-management agreements made between NGOs and the Government of Belize (GOB) in the 1990s, there has been increasing support and interest from local communities in organizing themselves in co-management agreements with NGOs and the national government (Andrade 2000). By decentralizing responsibilities, it is possible to create a more effective park management regime. There are four types of co-management that currently exist in Belize: between the 1) GOB and NGO, 2) GOB and Community-based organizations (CBOs), 3) GOB and private landowners, and 4) GOB and NGOs, where the NGO is charged with working with buffer zone communities and CBOs. This paper will focus on the type of co-management between the GOB, NGOs, and communities.

The Belize Audubon Society has the longest history of co-management in Belize, having signed a co-management agreement with the GOB in 1982. In 1995, the first co-management agreement between GOB and a CBO called Friends of Five Blues National Park was signed at Five Blues Lake National Park. In 1988, the first co-management agreement between GOB and a private landowner called Programme for Belize (Pfb) was signed, establishing the Rio Bravo Conservation and Management Area. In 2000, the TIDE was the first NGO to sign a co-management agreement for a Marine Reserve. Currently, there are several other efforts to establish co-management between GOB, NGOs, and communities, for example at Crooked Tree and Cockscomb Basin Wildlife Sanctuary, which will be discussed later in this section. (See Appendix B for a complete list of existing co-management agreements).

Currently, there is no national co-management framework in Belize, yet a co-management forum was expected to meet in February 2002 in order to compile stakeholders' experiences with all four types of co-management, as well as to develop a national co-management framework for Belize. A national framework would incorporate

communities into the management-planning process and incorporate the communities from outside of the protected area boundaries. This forum was also intended to use its information to make recommendations for policy and legislation changes related to co-management. The Protected Areas Conservation Trust (PACT) planned to fund this forum but rescheduled it for November 2002 due to lack of funds. Once the framework was drafted, it was supposed to be approved by the Forest Department of the Ministry of Natural Resources and the Environment, Commerce and Industry (MNREI) through the Protected Areas Technical Evaluation Committee (PATEC) (Salas and Andrade 2001). As of August 2003, the co-management forum had not yet occurred.

4.3.2 National Policies Governing Co-Management

Currently, there is no legislative framework which governs co-management, or defines public participation or advisory committees for protected areas in Belize. The protected areas of Belize are governed by the National Park System Act, Forests Act, Fisheries Act, National Institute of Culture and History Act, and the National Lands Act (Meerman, et al. 2004). Co-management is not mentioned in these pieces of legislation, and until a framework is adopted, adaptive approaches toward co-management are used. In order to involve all relevant stakeholders in co-management, especially local communities, roles and responsibilities need to be defined and clarified; otherwise, the roles and responsibilities for implementing and funding participatory mechanisms, as well as, the delegation of power will remain unclear (Barborak, et al. 2002). The Belize Environmental Protection Act (2000a) does not mention co-management; yet it states that the Minister of the Environment may "...consult with any other Government department or agency, non-governmental organization, or any person interested in the quality of the environment or the control or abatement of environmental pollution..." (Part III, Section 2a of Chapter 328 Belize 2000a).

Concerning requirements for the different types of co-management agreements, there are presently no written requirements; yet, as of March 2004, there are efforts underway for a National Protected Areas Policy and System Plan Initiative (NPAPSP) that will create a comprehensive national policy and plan for Belize's protected areas (Rosado 2004). By February 2005, it is planned that the NPAPSP will "provide strategic guidance and direction for the main purposes of protected areas establishment, management and administration" as well as, "include guidelines and criteria for financial sustainability, co-management, and creation and de-reservation of protected areas (terrestrial and marine)" (Salas 2004b). The Protected Areas Policy will integrate Belize's existing international commitments, as well as, its current governing system and policies. The plan consists of the assessment and analysis of the protected areas, the management procedures and sustainable use, the identification and development of economic benefits, and the strengthening of management agencies and monitoring procedures (Salas 2004b). The NPAPSP will use participatory approaches in its development and implementation, which will incorporate scientific, technical, and traditional knowledge of local people.

As of March 2004, the MNREI formed a National Lands Advisory Committee (NLAC) made up of 15 members from the public and private sector, NGOs, and Government of

Belize representatives. They are conducting consultations around Belize to hear the public's opinions on land use, allocation, and acquisition in order to make recommendations to the MNREI for a National Land Allocation and Acquisition Policy. The policy will not address Forest Reserves and protected areas because of their difference in land tenure, but it has the potential to affect the "direction, development and implementation of future land use and natural resource policies" (Government of Belize 1999h; Salas 2004b). The NLAC is a separate mandate from the National Protected Areas Policy and System Plan Initiative (NPAPSP); yet it will be analyzed and incorporated into the final policy and plan.

In January 2000, the revised Village Council Act, Chapter 88, went into effect enabling villages to have more control of their village and surrounding resources; yet, the Act does not mention co-management and does not address how the Village Councils should coordinate with protected area managers. Any village with at least "two hundred persons who would be qualified to vote for village councils under this Act" can establish a Village Council (Belize 2000b). The council members consist of seven elected members (one Chairperson and six other members) who are citizens of Belize, have lived in the village for at least one year "immediately preceding the election", and at least eighteen years old (Belize 2000b). All of the meetings are open to the public unless the Chairperson decides otherwise. Under this Act, public officers, NGOs, or others may be invited to the meetings but do not have the right to vote; yet when the council implements any of its plans or proposals, it "shall take into consideration the views and opinions of villagers and of government and non-government agencies" (Belize 2000b). This is also true for "any Ministry or Department of Government intending to make decisions or policy or to carry out any act affecting a village" to consult "with the council before doing so and, as far as practicable, take the views of the council into account" (Belize 2000b). Also, the council has the power to make by-laws for governing the village, but specifically related to natural resources, it can make by-laws for the "regulation of parks, gardens and public recreation grounds in the village" and for "ensuring that sound environmental practices are adhered to by all persons within the village" (Belize 2000b). The definitions of "parks, gardens, and public recreation grounds" are not defined in the Act, so it is unclear as to whether the Village Councils have any authority over protected area management. Also, it is unclear as to what is meant by "sound environmental practices." The only rights that the council has concerning the management of natural resources within the village are "with the consent of and under the conditions negotiated with the department of Government responsible for forestry, the council may have responsibility for maintaining forest reserve boundaries that coincide with the village boundary and be compensated for this" (Belize 2000b).

In an effort to establish a national management plan framework, PACT and BAS held a workshop in 2001 with Dr. William J. McLaughlin, a professor from the College of Natural Resources at the University of Idaho who is experienced in community participation in natural resource management. The Ministry of the Environment, BAS, community representatives, and PACT staff participated. The goal of the workshop was "to facilitate the diversity of actors involved in Belizean protected areas management to develop a practical and defensible protected areas management planning approach that

can be used across all types of protected areas and in the varied environmental, social, cultural, economic and political contexts of Belize” (Catzim 2002a). The objectives were: “1) to recognize the similarities and differences in perspectives of community leaders, protected areas managers, technical people and scientists, and NGO and government administrators; 2) to better understand how to work in groups to identify issues, understand differences and work together to create acceptable solutions; 3) to be able to explain the difference between strategic thinking and planning, and day-to-day thinking and operational planning as applied to protected areas management and planning; 4) to be able to describe and justify the critical elements included in Belize’s management planning approach for protected areas; and 5) to feel that their ideas and insights were considered throughout the forum” (McLaughlin 2001). The workshop ended by summarizing what they learned from the activities and consultations with local communities into the term “Conservation Mobilization”. This includes “environmental education, public involvement, advocacy, community/NGO/CBO capacity building, and partnerships and strategic alliances as part of an on going social mobilization process that needs to be involved in every step of the protected area management planning framework” (Salas and Andrade 2001). Eventually on April 22, 2002, the Ministry of Natural Resources approved the National Management Plan Framework that requires all organizations involved in the management of protected areas in Belize to use it for their management plans (Catzim 2002b). Since this was approved, BAS plans to revisit the management plans for Crooked Tree Wildlife Sanctuary (CTWS) and Cockscomb Basin Wildlife Sanctuary (CBWS) and develop a five-year management plan with the buffer communities’ participation.

4.3.3 Critical Barriers to Co-Management in Belize

In order for co-management to effectively take hold at all levels in Belize, there are several critical barriers which must be addressed. For the purposes of this paper, we will focus on the barriers relating to co-management between GOB and NGOs, where the NGO is charged with working with buffer communities. In general, the barriers to co-management in Belize are 1) a lack of capacity and resources, 2) an inadequate policy and legislative framework, 3) a lack of a clear national co-management model, and 4) the lack of local communities’ participation in the sustainable development of natural resources.

At all levels, from the communities to the GOB, there are varying degrees of inadequate knowledge, resources, and skills which affect co-management of a protected area. For instance, as reported by the United Nations Development Program (UNDP) evaluation of PACT’s co-management project in 2002, the community-based organizations lacked the capacity to “implement their responsibilities related to co-management of protected areas” and did not “possess the technical expertise or the organizational capacity to effectively co-manage protected areas” (Ravndal 2002). Even though they were organized in Local Management Teams (LMTs), the report found that they did not have the time or capacity to engage in protected area management (Ravndal 2002). The report suggested adequate training, such as protected area management, leadership and

economic development in order to allow the community-based organizations to take on the responsibility of co-management of the protected areas.

In addition, the UNDP evaluation reported that the Forest Department lacked the capacity “to implement their responsibilities related to co-management [between GOB and communities] of protected areas.” This was due to the fact that the budget for the Protected Areas Program received less than one half of one percent of the MNREI budget, they lacked government staff at the protected areas and they only had two staff working without a full-time vehicle. This also influenced the GOB’s ability to co-manage with NGOs and results in the NGOs taking on most of the responsibilities of managing and monitoring the protected area. Moreover, the UNDP reported that GOB’s lack of capacity was due to their “lack of political will, manifested in recognized inadequate capacity and few attempts to rectify the situation (e.g., no reinvestment of revenues earned from protected areas back into protected areas, few attempts to seek support from donors to enhance capacity)” (Ravndal 2002).

In many cases, the NGOs take on the responsibilities of managing a protected area as a result of the GOB’s lack of capacity. Whether the NGOs are at the community, national, or international level, its resources and capabilities vary and ultimately affect their ability to implement, fund, and sustain co-management at their respective protected area. For instance, in order to strengthen capabilities in co-management projects, some of PACT and BAS’s staff underwent training in monitoring and protected area management. The national and international NGOs have had more of an advantage in sources of funding and resources than the local NGOs but they are increasingly working together to fund projects. Even with sources of funding, NGOs continue to lack the adequate number of personnel, skills, and resources to effectively manage protected areas. This will be discussed later in the Belize Audubon Society’s Co-Management Project.

The second barrier, inadequate policy and legislative framework, affects Belize’s biodiversity conservation in protected areas and its effort to effectively engage in co-management. Agreements have been signed at all levels; yet, as discussed above, there is no national framework to govern the implementation. As long as the National Parks System Act enables the Minister to grant exceptions for extraction of resources or cultivation in protected areas, and to “dereserve” protected areas, it is uncertain as to whether or not co-management of protected areas will be sustained (Ravndal 2002).

The third barrier to co-management in Belize is the lack of a clear national model for the four types of co-management. Even with the existing signed agreements, there has been no forum to exchange experiences and lessons learned across the four different types of co-management. The national model would need to clearly define “1) the respective roles and responsibilities of the co-managing entities, 2) the organizational structure that would best allow for communities to be meaningfully involved in co-management, 3) how such a structure would function and with what resources, 4) financial flows and mechanisms required to obtain/secure viability, 5) staffing requirements, and 6) collaborative requirements to ensure technical soundness in protected area planning and management” (Ravndal 2002).

The fourth barrier is the lack of local communities' participation in the sustainable development of natural resources. There are many possible reasons for their lack of participation, but unemployment, misconceptions about the importance of ecosystem functions, feelings of isolation and lack of stewardship have been identified by the Belize Audubon Society (BAS 1999). In addition, local communities have traditionally not been motivated to become involved in protected area management because there have been no viable economic alternatives and communication has been poor between managers and communities. These reasons can also be applied to other projects throughout Belize, as other groups try to incorporate local communities in protected area management.

4.4 Protected Areas Conservation Trust (PACT) and Belize Audubon Society (BAS) Co-Management Projects

The Protected Areas Conservation Trust (PACT) and the Belize Audubon Society (BAS) have been the two major organizations to implement co-management at the community level in Belize. As previously stated, a clearly defined co-management framework does not exist and these two projects were intended to test and develop a framework. Below is a brief description of PACT's Community Co-Managed Parks System Project at Five Blues National Park, Aguacaliente Wildlife Sanctuary, Manatee Special Development Areas and Freshwater Creek Forest Reserve. A more detailed description of BAS's Development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as Centers for the Co-Management of Protected Areas Project follows.

4.4.1 Protected Areas Conservation Trust

PACT Background

Established in 1996, PACT is a trust designed to provide for the funding of protected areas within Belize. It was created after several years of consultations between governmental agencies, national and international NGOs, and private consultants. The mission of PACT is to provide a trust fund for the "promotion, sustainable management and development of Belize's protected areas with a view to improve the quality of life for Belizeans" (Naturalight Productions Ltd 2004a). To do this, PACT has a three-fold purpose: "to provide financial assistance for activities on the protected areas that foster conservation; to raise funds and receive gifts and donations from Belizeans and foreign individuals, corporations and foundations as well as from bilateral and multilateral organizations, earmarked for activities that help to achieve the mission, goal and purpose of PACT; and to establish and maintain the institutional arrangements, operational procedures and public awareness programs required for effective and efficient management to carry out the mission of the trust" (Naturalight Productions Ltd 2004a).

In 2000-2001, PACT gave close to \$400,000 in grants, and that number is expected to climb to \$700,000 in 2003-2004 from increased revenue from cruise ships. PACT receives funds through grants, private donations, exit-fees for tourists (US \$3.75), and a twenty percent entrance fee charged to cruise ships (Dubon 2003). At least five percent of all revenues are deposited into an endowment fund (Naturalight Productions 2004b).

Recently, PACT has shifted away from small grants, which do not provide for long-term sustainable progress, in favor of bigger, longer-term grants. This has created problems for local communities, who now must go through larger, more ‘established’ organizations to secure funds for local projects. However, PACT is now looking for proposals that include more community-initiated efforts (Dubon 2003). PACT is also shifting its focus to projects that address environmental degradation in protected area, as well as to activities that “enhance the awareness, sustainability and management effectiveness of these areas.” (NaturaLight Productions Ltd 2004a).

Protected Areas Conservation Trust Community Co-managed Parks System Project

PACT implemented a co-management project in June 1999. Since PACT was established as a funding agency, it was the first project that they implemented. Dr. Robert Horwich and Dr. Jon Lyons with the Community Conservation Consultants in Wisconsin, USA approached PACT to develop a Community Co-Managed Parks System in Belize which would eventually lead to a model for community co-management in Belize. PACT agreed to implement and co-finance the project with the UNDP/GEF (PACT funded U.S. \$75,000 and UNDP/GEF funded US \$750,000) (Catzim 2002a).

The project was conducted from June 1999 to September 2002 at Gales Point Manatee Forest Reserve, Aguacaliente Wildlife Sanctuary, Five Blues Lake National Park³, and Fresh Water Creek Forest Reserve. The project was structured to involve the local communities around the four protected areas in the form of Local Management Teams (LMTs) which established a Project Steering Committee (PSC)⁴ that consulted with PACT to monitor the project and make recommendations for project implementation (Catzim 2002a). The objectives were:

- “To ensure the facilitation of agencies/partners for the establishment and/or strengthening for co-management structures and mechanisms nationally and in the pilot areas.
- Assist pilot communities in their efforts to get economic and social benefits which preserve the environmental integrity of the protected areas.
- Promote positive attitudes and encourage action towards the sustainable use of natural resources among residents in the pilot communities.
- Develop protected areas management plans in the four pilot areas that ensure full community participation.
- Promote changes in policy, legislation and protected areas which accommodate the vision and aspirations of communities that are involved in co-mgmt of protected areas” (Catzim 2002a).

³Five Blues Lake National Park is the only one of the four with a signed co-management agreement-between the Association of Friends of Five Blues Lake and GOB

⁴ The members of the Project Steering Committee were the UNDP, Ministry of Natural Resources and Environment, PACT’s Project Director, Belize Audubon Society, Project Manager of the Sarstoon-Temash Project, Project Manager of the Community Co-Management Project and four representatives, one from each Project area (A. Catzim 2002).

In order to implement the project, there were four components: 1) The Community Leadership Development Program was formed “to build local skills and knowledge in order to sustain co-management and encourage community participation in protected area management” (Catzim 2002a); 2) Environmental Education Program was formed to design, develop and implement environmental education (EE) at the protected areas; 3) Rapid Management Assessment was formed to compile data on biodiversity, geography, and land use and to identify conservation targets and its stresses; and 4) Management Planning Framework Workshop was conducted to develop a national management plan framework for Belize (Catzim 2002a).

The project expected “to strengthen and solidify the co-management structure in existing parks” (Catzim 2002a), develop management plans for the four protected areas, establish social and economic development for the buffer communities, promote conservation and sustainable use of the natural resources, and promote policies and legislation for community co-management. At the end of the project, PACT decided to no longer act as the implementing agency and it was unclear as to what would happen once the funding ran out (Catzim 2002a).

The UNDP/GEF conducted an external evaluation of PACT’s Community Co-Managed Park System for Belize Project in the last month of the project, August 2002. The major challenges identified by the evaluation were:

- The lack of a model for co-management between the Forest Department and communities caused the project to make several major revisions to the logical framework setting back the accomplishments of the project;
- The lack of adequate consultations with GOB and the communities in the planning process affected the efficacy of the project;
- The work plan assumed that the communities and GOB were in a position to pursue co-management when in fact they were not;
- The inconsistency and lack of adequate background in project staff negatively affected the process and achievements of the project;
- The uncertainty of sources of funding for the LMTs at the end of the project and the lack of funds to develop the management plans left the project with questions of sustainability;
- The inadequate effort to learn from existing co-management projects in Belize and around the world hindered their ability to improve the project based on other experiences;
- The internal evaluations didn’t adequately report the status of the report, making it seem that results were being accomplished;
- The Project Steering Committee was ineffectual because of insufficient representation, lack of clarity in roles/responsibilities, lack of staff continuity, and experience;
- The role of PACT was questioned since it only had experience with funding projects;
- The lack of adequate communication among the project stakeholders made it difficult to accomplish project activities;

- The LMTs do not have a plan beyond developing a management plan which outlines the next steps for their activities which affect the sustainability of the project activities; and
- The documentation of the project activities and final conclusion was poorly disseminated to the PSC, communities and GOB (Ravndal 2002).

The evaluation declared the major successes of the PACT project were the development of a 1) comprehensive leadership training program, 2) successful Environmental Education program and materials, 3) rapid management assessments for each of the four protected areas, 4) development of a management planning framework, 5) systematization of the project process throughout the three years, and 6) helping BAS develop their co-management project at CTWS and CBWS ([Naturalight Productions Ltd. 2004a](#); Ravndal 2002).

Even though the PACT co-management project ended when BAS was in the early stages of implementing their co-management project, the PACT project outcomes and lessons learned helped BAS develop its co-management project. BAS participated in the Community Leadership Development trainings that this project conducted and was a member of the Project Steering Committee ([Naturalight Productions Ltd. 2004a](#); Ravndal 2002).

4.4.2 The Belize Audubon Society

Background

The Belize Audubon Society (BAS) is a non-governmental organization formed in 1969 as a foreign chapter of the Florida Audubon Society. In 1973, it became an independent organization, and the first environmental NGO in Belize. In 1996, BAS signed a memorandum of understanding with the Belizean government giving BAS the authority to manage six protected areas; in 1999, it was expanded to eight protected areas. BAS currently has a staff of over 30 individuals and a multi-million dollar operating budget. The only financial assistance BAS receives from the government comes from the 70 percent of visitors fees that it collects (Sabido 2003).⁵ Otherwise it is responsible for generating its own funds.

According to its mission statement, BAS is “dedicated to the sustainable management of [Belize’s] natural resources through leadership and strategic partnerships with stakeholders in order to create a balance between people and the environment.” They hold the vision that “the Belize Audubon Society will be a strategic leader in building a nation in which people in Belize live in harmony with and benefit from the environment.” BAS is dedicated to conserving Belize’s biodiversity through its three programs: Protected Areas Management, Advocacy, Environmental Education (BAS n.d.).

⁵ Of the remaining 30 percent, 10 percent deemed to be the Government's partial contribution towards infrastructure and security for the PAs and 20 percent goes to PACT (GOB and BAS 1999).

Through an agreement with the GOB, BAS co-manages eight protected areas declared under the National Parks System Act which consists of over 162,000 acres. These include two national parks (Guanacaste National Park and Blue Hole National Park), two wildlife sanctuaries (Crooked Tree Wildlife Sanctuary and Cockscomb Basin Wildlife Sanctuary), three natural monuments (Half Moon Caye National Monument, Victoria Peak National Monument, and Blue Hole Natural Monument), and one private nature reserve (Tapir Mountain Nature Reserve). This agreement also states that they “shall together formulate and implement detailed management plans.” The GOB, along with the Forest Department, provides the infrastructure and security for the protected areas while BAS is responsible for the daily management, implementation, maintenance and public awareness of the protected areas (GOB and BAS 1999). Through BAS, the GOB is able to ensure that the protected areas remain more than just “paper parks” because it lacks the resources to manage the areas itself (Botnick et. al. 2000).

In 1995, over 24,000 tourists visited these protected areas. BAS classifies the management activities into resource management, protection, recreation, tourism, interpretation and education, community development, administration, and research and monitoring (BAS n.d.).

The purpose of the Advocacy program is to protect the integrity and biodiversity of the eight protected areas managed by BAS. It is designed to promote environmental solutions, attitudes and behavior; develop and strengthen laws and policies governing the environment; raise public awareness on national environmental issues; and to ensure the continuity and security of BAS managed protected areas. BAS lobbies for fair and transparent land use policies, works closely with the Department of the Environment to develop and monitor development projects around the country, and works with local groups in advocating to improve their quality of life (BAS n.d.).

Environmental Education program holds that “environmental problems can only be effectively solved if there is a clear understanding of the environment and its processes.” To that end, BAS has implemented programs in the buffer zone community schools and for the community at large.

As a part of BAS’s efforts to manage its protected areas, a co-management project was implemented at CTWS and CBWS to involve relevant stakeholders in protected area management through sustainable development activities. The two protected areas are described below, followed by a detailed description of the co-management project.

4.4.3 Crooked Tree Wildlife Sanctuary

Crooked Tree Wildlife Sanctuary (CTWS) was established in 1984 for the protection of resident and migrant birds. In November 1995, BAS and the Forest Department signed a contractual agreement for the co-management of the CTWS (Salas 2001). Crooked Tree Wildlife Sanctuary consists of 41,297 acres of freshwater lagoons, marsh forest, broadleaf forest, pine/oak savanna and homestead farms (Belize 2001). In recognition of the ecological value of CTWS, the International Convention on Wetlands designated

CTWS as Ramsar site no. 946 in 1998. It is the only designated Wetland of International Importance in Belize (Wetland International 2004).

There are four villages adjacent to the sanctuary at its eastern and southern borders: Gardenia, Biscayne, Lemonal and Maypen. Crooked Tree is located in the center of the wildlife sanctuary and is the most populated of the five communities. These five villages are primarily populated by individuals of Creole heritage (Salas 2001). Villagers maintain a living through subsistence farming, cattle ranching, fishing, subsistence hunting, logging, and charcoal production. A number of Mayan archaeological sites are also found in the area.

All of these communities are located within the Belize District. Since the 1980's, the economy of these villages has shifted away from subsistence agriculture to wage labor in Belize City and Orange Walk. A bus service between the villages and Belize City has allowed many of the residents to live in the villages and commute to the cities, thereby counteracting population decline (Moreno 2003a).

When members of BAS first approached community members about creating a sanctuary, the villagers were initially supportive of the reserve. They were also excited about the idea of increasing the amount of tourism as a venue to increase income and employment in the village. Since they did not eat the birds, they were not directly affected by measures to protect them (Botnick, et al. 2000).

However, initial support for the sanctuary quickly disappeared as conflicts between the residents of Crooked Tree Village and BAS developed. Miscommunication between the Belize Audubon Society and community members was readily apparent when it became evident that the sanctuary was not only there to protect birds but also to protect the fish and other animals that live around the village. In addition, people who had fished in the lagoon their whole lives were told that their activities were henceforth illegal. The perception of the villagers was that a Belizean woman from the Audubon Society came with a group of white people and placed these restrictions on the community after assuring them that they would not (Johnson 1998).

Matters were exacerbated when a Peace Corps volunteer living in the village wrote a new draft management plan for the sanctuary that he distributed for discussion at the next town meeting. In Creole culture, people do not write anything until it has been discussed, at which point it is finalized in writing (Johnson 1998). That the document was already written led them to believe that it was just one more instance of a white outsider telling them how to run things (Johnson 1998; Botnick et. al. 2000). These nascent stages of communication between BAS and local communities set the stage for years of hostility, and today relations between the Belize Audubon Society and the people of Crooked Tree remain tense.

A brief description of the buffer-zone villages follows.

Crooked Tree Village

Crooked Tree Village is located on a small island surrounded by wetlands; in the wet season (from June to September), these wetlands become vast lagoons. A causeway connects the village to the main highway. Over 300 years old, the village is possibly one of the oldest in Belize and is home to about 622 residents (Moreno 2003a). Crooked Tree is famous for its cashews trees, from which roasted cashews and cashew wine are produced. Tourism is increasingly important to the village (BAS n.d.).

Map 4: Crooked Tree Wildlife Sanctuary Buffer Communities (International Travel Maps n.d.)



According to the survey results, residents of Crooked Tree stated that there are several community issues that are currently problematic in Crooked Tree. One is that few people attend Village Council meetings, and this is difficult to remedy because communication through the community is slow and incomplete. At one time announcements were posted in the village, but they felt this was not effective because the children tore the postings down. One suggestion was to drive around town with a speaker on a car to make sure that people knew of upcoming Village Council meetings. However, as the Wildlife Sanctuary and BAS are important issues to the people of the village, this does help to increase participation.

Also, villagers stated that they are currently divided on a proposal to remove the cattle from the village, where they wander freely, and move them to a pen outside the village. Many people feel this would improve the cleanliness of the village, while others believe that the village would become overgrown and snake infested if the cattle were removed. Other issues that were mentioned by the villagers were the lack of jobs, and profit sharing from the Wildlife Sanctuary entrance fees. With seven churches in the village, religious issues are also a point of contention for community members.

Gardenia Village

Located on either side of the Northern Highway, this small village of 255 residents borders a lake on the eastern side of the highway that is also part of the wildlife sanctuary (Moreno 2003a). According to the interview results, villagers stated that there are few employment opportunities in the area and most of its residents work in Belize City, roughly 30 miles to the south.

Biscayne Village

Like Gardenia, Biscayne is also located on either side of the Northern Highway, and the border between the two villages is hard to distinguish. A total of 344 residents live in Biscayne (Moreno 2003a). Like most of the residents in Gardenia, people from Biscayne also work predominantly in Belize City.

According to the interview results, residents of Biscayne stated that the village faces a fundamental division of its population between the Seventh Day Adventists and the Sunday keepers. These two groups do not necessarily communicate well in normal circumstances and this division is further widened by politics, since the Village Council is currently dominated by Seventh Day Adventists. Also, the villagers stated that dissemination of information is a problem. Often information is disbursed through the schools, resulting in people without children being uninformed. BAS's attempts to get more people involved by working through the Village Council face political and religious hurdles in a village that historically has low attendance at Village Council meetings.

Lemonal Village

Lemonal is located about 10 miles (16 km) north of the Community Baboon Sanctuary. With only 250 inhabitants, it is currently troubled by a land dispute that leaves the future of the entire village in doubt (Moreno 2003a). The land is privately owned and is currently up for sale. The residents of Lemonal are, in a legal sense, squatting on the land. They are therefore reluctant to invest any money or time into the village. Internal problems between some community members have hampered efforts to lobby the government for assistance with their land issues (Lemonal Community Member 2003).

Residents of Lemonal stated that property rights are the major issue confronting the village today. An individual that lives elsewhere owns the land that encompasses the entire village, and is currently attempting to sell the land. Also, it was stated that local villagers are generally unwilling to invest more resources, including time and effort towards co-management, until the land issue has been resolved. Currently there is infrequent transport to Belize City and people looking for work generally have to leave the community. Within the community, it was stated that there are no jobs; fishing is the livelihood of the majority of residents. Additionally, as with many of the other villages, it was stated that there are political divisions in Lemonal that is slowing progress on issues confronting the village.

Maypen Village

Maypen is located about six miles (10 km) off of the Northern Highway. There are only nine households, with roughly 59 people (Moreno 2003a). The residents were traditionally hunters and fishers, though now many of them work in Belize City.

4.4.4 Cockscomb Basin Wildlife Sanctuary

Cockscomb Basin Wildlife Sanctuary (CBWS) was created in 1984 as a Forest Preserve. In 1986, due to the high concentrations of jaguars found in the basin, it was designated a jaguar preserve. In 1990, the sanctuary was expanded to include over 100,000 acres (BAS n.d.) and was declared a wildlife sanctuary in 1997. Cockscomb Basin has received international attention as the only jaguar reserve in the world. The sanctuary is bordered by the Maya Mountains to the south and west and the Cockscomb Ridge to the north. It encompasses an area of approximately 128,000 acres. The landscape of the area consists of broad-leaved evergreen tropical forests, hilly topography, and includes river flood plains. Most of the forest area found in CBWS is primarily young second growth forest, except for areas along the western edge, which, due to relatively inaccessibility of the area, remains virtually undisturbed primary-growth forest (BAS n.d.).

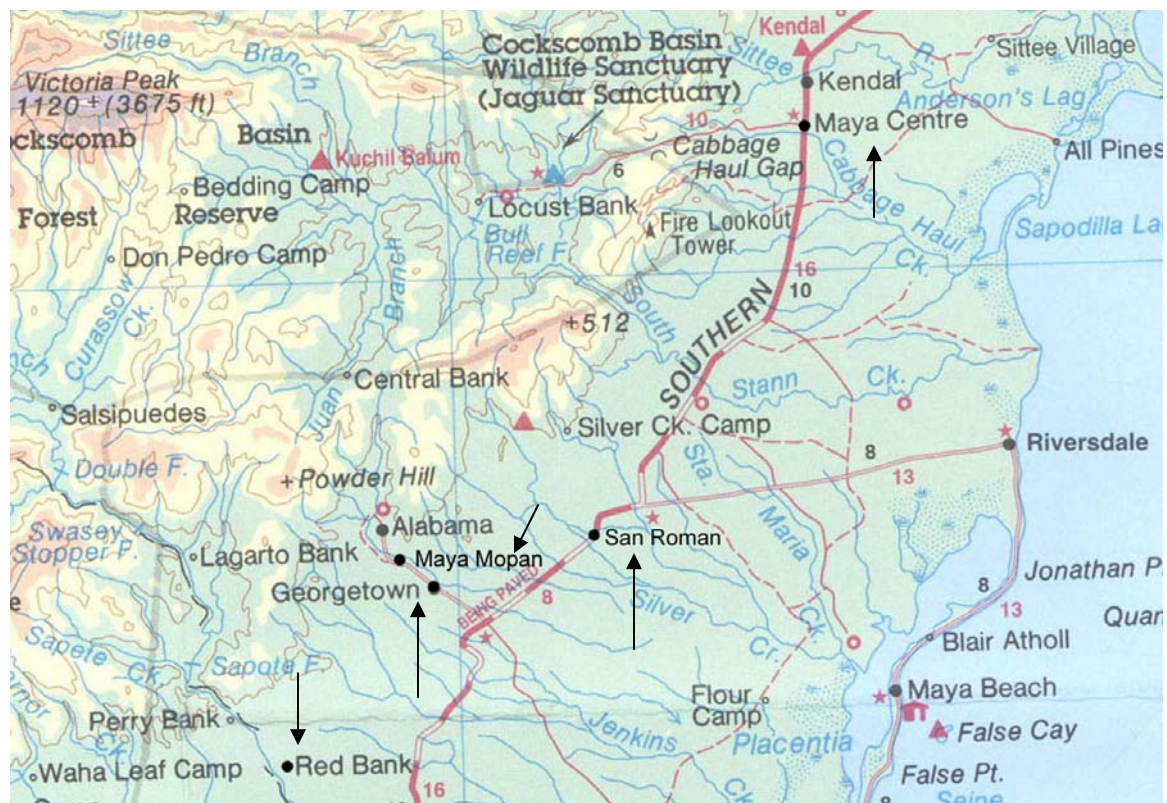
The ancient Maya were the first known human inhabitants in this area as evidenced by the ruins of a minor ceremonial site, Chucil Baalum, dating from the classic period of their civilization (circa 250-1000 A.D.) (Centralamerica.Com 2000). There are several Maya communities along the buffer zone of the sanctuary, as well as one Garifuna community. The villages visited for the purpose of this study were Maya Mopan,

Georgetown, San Roman and Red Bank along the southern edge and Maya Centre along the western border. Santa Rosa, Mayan King, Kendall, Sittee River, Hopkins, Silk Grass and San Pablo are also situated near the sanctuary and are potential stakeholders in the future of CBWS (Isla Villar unpublished).

Similar to the situation at the Crooked Tree Wildlife Sanctuary, there has been some tension between local communities and BAS. Most of the residents of the buffer zone communities gathered food and materials for fuel and construction from inside the Cockscomb area before it became a wildlife sanctuary (Moreno 2003a). A major incident also occurred when nine families were removed from inside the sanctuary when it was first established (Moreno 2003a). However, several family members were given jobs within the sanctuary, thereby alleviating some of the animosity.

Between 1980 and 2000, the population of this area grew from 534 to 2875 people, for a growth rate of 438 percent. The Mayan people that inhabit these communities are predominantly from the southern Toledo district. Many of these communities now have electricity and running water, and health services are improving (Moreno 2003a).

Map 5: Cockscomb Basin Wildlife Sanctuary Buffer Communities (International Travel Maps n.d.)



Following are brief descriptions of the villages visited during the course of the study.

Maya Center

Maya Center has a population of 293 of Mopan Mayan descent. It is located directly on the Southern Highway and serves as the entrance to the CBWS headquarters and tourist center. The Maya Center Women's Group has established a successful gift shop next to the road leading into the sanctuary, and is responsible for obtaining entrance fees. While many of the residents work on nearby citrus farms, many are also involved in the tourism sector. By its very location, Maya Center receives the majority of the tourists visiting CBWS and enjoys a close relationship with BAS. Roughly ninety percent of Maya Center residents are literate, and the standard of living here is relatively high. Currently, the Maya Center Village Council Chairman is also the Director of the Cockscomb Basin Wildlife Sanctuary. Five of the eight other employees at CBWS are from Maya Center (Moreno 2003a).

According to the interview results, some residents reported that tourism began slowly after the Wildlife Sanctuary was established, but has been consistently increasing, except for a lull after the events of 11 September 2001. The Women's Co-op has been selling locally made crafts since 1988, and they are responsible for collecting entrance fees to the sanctuary from tourists. However, some individuals in the interview results feel that they are not providing adequate information about the village and are referring tourists only to select business in the community. A businessperson who resides outside of the country owns the land surrounding the village, but 1000 acres have been donated to the community. Within the community, there is a divide between religious sects that makes it difficult to get full community support for any action.

Maya Mopan

The village of Maya Mopan is located about one mile west of Georgetown village. The population is roughly 420 people, although villagers are considering opening some of their lands to outside Mayan families. Current economic activities include milpa farming and employment at the shrimp farm (Isla Villar unpublished). Some of the younger community members hold teaching jobs in the area (Moreno 2003a). Community projects include a corn mill, cacao cooperatives and honey production.

According to villagers in the survey results, Maya Mopan is fairly unified, and large-scale projects have been completed in the past. However, some individuals have commented that under the current leadership there have been divisions between the educated and the uneducated populations of the village. The village is currently interested in developing a tourism industry, but there is no entrance to the Wildlife Sanctuary from the village. However, some villagers in the interview results claimed there are more jaguars in Maya Mopan than in the areas that tourists currently visit.

Georgetown

Georgetown is located about one mile east of Maya Mopan and has a population of roughly 760 people. While most Garifuna live in coastal villages, Georgetown is an exception. Georgetown is the only inland Garifuna village in Belize. It was founded in the 1960's when the GOB granted Garifuna farmers permission to settle the land they had been farming for years (Georgetown Community Member 2003). Roughly 30 percent of the people work on banana plantations, while another 30 percent work on independently owned farms. Currently, there are many in the community who want to draw tourism into the area (Isla Villar unpublished). A big problem in Georgetown is that many of the young people must leave to find jobs elsewhere (Moreno 2003a).

One local person identified the current economic state of the village as a crisis, since there is no work in the community. Many young people leave the village in search of work, contributing to the wide-spread phenomenon of 'brain-drain.'

Red Bank

The population of Red Bank is roughly three hundred. The town is composed of both Kek'chi and Mopan Mayas. Originally a dormitory site for plantation workers, there is a certain lack of community cohesion that may stem from its beginnings. Red Bank is known for its Red Macaw population, which migrates annually through the village (Isla Villar unpublished). In the past, the villagers hunted and ate the Macaws until a local NGO, the Programme for Belize, made efforts to stop this practice. They attempted to demonstrate the benefits that could come from increased tourism if the residents stopped eating (Eltringham 2001). They were unsuccessful and now the tourist lodges paid for by the NGO lay largely unused (Isla Villar unpublished). Some villagers in Red Bank stated during the interviews, that the community is disorganized and it is difficult to bring people together for meetings or to take action.

San Roman

San Roman has a total population of about 350 people, and it located on either side of the Southern Highway. Like Red Bank, it is composed of both Kek'chi and Mopan Mayas. Many of the local people work on banana plantations or on shrimp farms, and milpa farming is practiced by a majority of households and is a primary food source. The community is very poor and suffers from internal political divisions (Moreno 2003a). There are no known community based projects at this time (Isla Villar unpublished).

4.5 Belize Audubon Society Co-Management Project Components

4.5.1 Introduction

The co-management agreement between the GOB and BAS does not involve the buffer communities in the co- management of the areas. As a result of the increasing interest in involving local communities in protected area management, BAS initiated a co-

management project in June 2000 along with the PACT co-management project in 1999, between the MNREI, BAS, and buffer communities at CTWS and CBWS (BAS 1999). The project was “designed to involve relevant stakeholders in ecosystems’ management to promote biological diversity and ecological integrity through sustainable development activities.” Specifically, the relevant stakeholders are the community leaders/members, youth, women and the unemployed in the buffer villages at CTWS and CBWS, as well as, the government to Belize and BAS (Andrade 2000; BAS 1999).

The Belize Audubon Society and GOB have been committed to developing co-management between NGOs and communities in order to strengthen its protected area management capabilities and effectiveness in protecting Belize’s biodiversity. The GOB supports BAS’s efforts and indirectly benefits since it does not have adequate funding and resources to manage the protected areas (BAS 1999).

The project, titled “The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as Centers for Co-Management of Protected Areas”⁶ was originally scheduled to end in 2003. An 18 month extension was granted due to the natural disasters of Hurricane Keith in 2000 and Iris in 2001, making the ending date September 2004 (54 months) (Andrade 2000).

The project is funded by the EU under the thematic area “Watershed and wetlands conservation through sustainable management.” The EU provided 80% of the total budget (BAS 1999).

The BAS personnel involved in the project include the Executive Director, a Project Coordinator, a Protected Areas Manager, an Environmental Education Coordinator, a Community Liaison Officer (CLO), a Marketing Coordinator, two Park Directors (one at CTWS and one at CBWS), and 8 wardens.

The project initially started in August 1999, with intent to establish communication and share information about the protected areas with the buffer communities. However, there was no community involvement prior to the EU grant (Andrade 2000). A comprehensive long-term co-management plan for each site was not developed since no national framework for co-management exists. Therefore, this project tested a co-management model developed by BAS.

According to the yearly reports to the EU, the purpose of the project was to “to establish co-management and capacity systems with communities using socioeconomic incentives with a view to contribute to biological diversity and ecological integrity” yet in the logical framework, the purpose is identical to the main objective in the yearly reports: “Involve relevant stakeholders in ecosystems’ management to promote biodiversity and

⁶ The BAS Co-Management project functions along with the Human Development and Capacity Building sector of the EC Regional Indicative Programme for the Caribbean and the sustainable economic and social development sector of the National Indicative Programme; the Caribbean Natural Resources Institute (CANARI); the Mesoamerican division of the World Conservation Union; the National Audubon Society’s Latin America and Caribbean program; and Birdlife International (BAS 1999).

ecological integrity through sustainable development activities” (BAS 1999; Salas and Andrade 2001; Catzim 2002b).

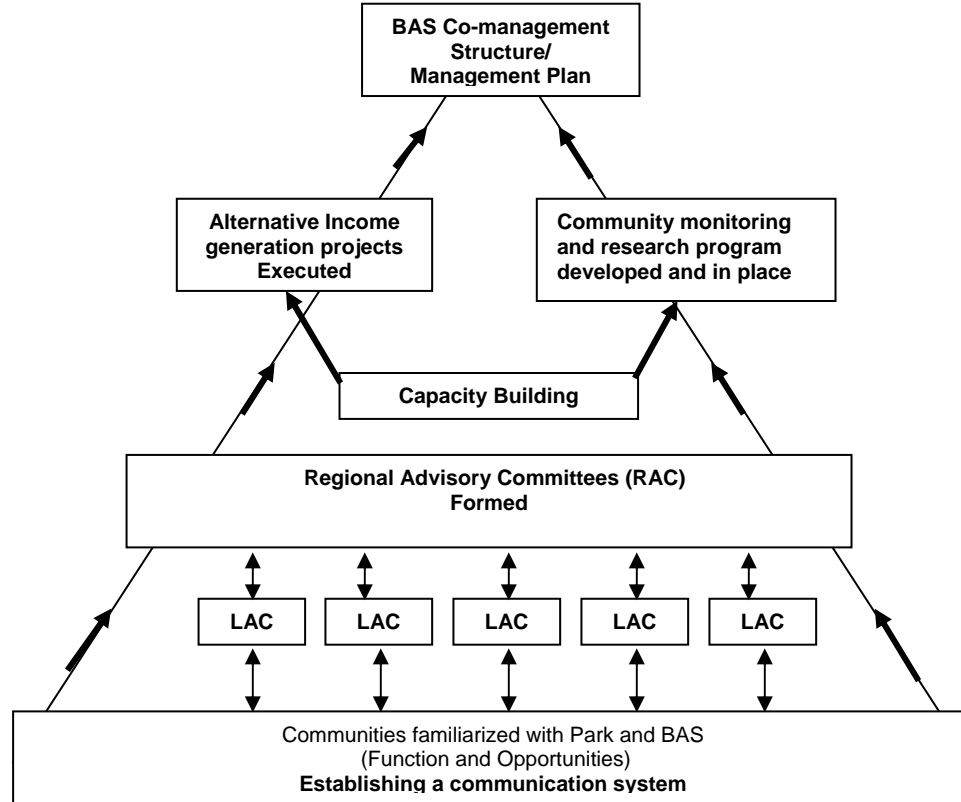
The logical framework was first documented in the second yearly report from October 2001 – September 2002 and it is unclear whether or not this is the same framework used for the implementation of the project or if it was developed after the implementation of the project. The expected results of the project include the following: 1) “Establish an efficient participatory management structure for CBWS and CTWS, 2) Community members establish ecologically viable economic activities (in-situ and ex-situ), 3) Community members are qualified resource managers through training, 4) Mitigate threats through monitoring and enforcement pilot projects, 5) BAS’ capacity is strengthened, and 6) Stakeholder awareness of ecosystems’ value is increased” (Catzim 2002b). (See Appendix C for the BAS Co-Management Project Logical Framework).

In order to accomplish the main objective of the project, BAS created six thematic areas to organize the different activities of the project. The thematic areas were 1) Co-management structure, 2) Economic Demonstration Projects, 3) Resource Management Trainings, 4) Education for Sustainability (EfS), 5) Monitoring and Enforcement Program, and 6) BAS Institutional Strengthening. Each of the themes is described below.

4.5.2 Co-Management Structure

The first component of the project, co-management structure, was based on the framework discussed at PACT’s Community Leadership Development training and developed by BAS (Andrade 2002). This model was developed to create a structure to involve and inform the relevant stakeholders with information feedback mechanisms from the community level to BAS’s administrative level. Again, since this was a pilot project, this model has not been finalized. It enabled the buffer communities at the protected areas to participate in an advisory role in the form of Local Advisory Committees (LACs) which were formed to make up a Regional Advisory Committee (RAC) at each protected area (Moreno 2002a). Each of the five buffer communities at both CTWS and CBWS represented themselves with individual LACs (total of ten) and formed two RACs. The RACs then formed into a Technical Advisory Committee (TAC) (Salas and Andrade 2001). The model below illustrates this relationship.

Figure 3: Belize Audubon Society Co-Management Model (Salas and Andrade 2001)



In order to create the LACs, BAS first consulted with the buffer communities by providing information about BAS, the protected area they buffered, and the co-management project to community leaders in the Village Council, *alcaldes*, and other community members who were interested (Salas and Andrade 2001). BAS explained the extent of the project and how the communities could take advantage of the project funds and the opportunities that would result from it. Then, BAS organized field visits at the respective protected area for each community so that the communities could see first hand, what the protected areas had to offer. It was agreed by all the communities to keep the Village Council separate from the LACs in order to alleviate political conflicts. Also, the Village Councils agreed to organize a meeting with the communities to initiate the establishment of the LACs. According to the LAC terms of reference, the members would be appointed by the community and BAS. The members would consist of the following (Salas and Andrade 2001):

- BAS Community Liaison Officer,
- Forest Dept. Forest Officer,
- Village Council Representative,
- Representative of the Fishing Community,
- Representative of the Farming Community,
- Representative of the Churches,
- Representative of the Tourism Industry,

- Representative of the Women's Group,
- Representative of the Teachers,
- Other stakeholder, but not exceeding 10 members.

The role of the LACs is to act as an advisory group to make recommendations for the management, legislation and regulations of the protected area, as well as help to develop the protected area management plans and oversee income generating projects (Salas and Andrade 2001). (See Appendix D for the Local Advisory Committee Terms of Reference).

Once the LACs were established, an officer was elected to the Regional Advisory Committee (RAC) - one for CTWS and one for CBWS. According to the RAC Terms of Reference, the members consist of the BAS Community Liaison Officer, eight LAC representatives, and another stakeholder, not exceeding ten members. This committee was created to bring together the LACs from the different villages to work directly with BAS to do the same things as the LAC but also to address the regional issues of the buffer communities that relate to the management of the protected area (Catzim 2002b). (See Appendix E for the Regional Advisory Committee Terms of Reference).

At CBWS, the RAC consisted of representatives in Georgetown, Maya Centre, Maya Mopan, San Pablo, and Red Bank. In 2002, they were organized around a project to develop a Garbage Disposal Site and wrote a proposal to fund and implement the project. They identified a landfill site with the support of the different Village Councils, the Department of Environment, and the Ministry of Works. The group also registered under the Belize Companies Act which enabled them to qualify for funding from GEF/SGP and other funders. The proposal was reviewed by the BAS Advocacy Director and revised by the committee as of March 2003, according to BAS reports. Besides the garbage disposal project, the RAC discussed the logging issue and jaguar problem in Maya Mopan, how the LACs were having difficulty being actively involved and the progress of the co management project in the communities (Catzim 2003). As of August 2003, it was unclear as to what were the RAC's activities and the garbage disposal site proposal had been rejected. At CTWS, BAS reports mentioned that the RAC met in February 2003 to discuss a GEF project but the meeting was postponed due to lack of attendance (Catzim 2003).

The RACs then elected two representatives to the Technical Advisory Committee (TAC). This committee was intended to be the main advisory committee for the project to discuss issues and make recommendations based on the member's knowledge and experience. According to the TAC Terms of Reference, the members consist of the following (Salas and Andrade 2001):

- Forest Department Protected Areas Officer,
- Fisheries Administrator,
- Chief Agricultural Officer,
- Ministry of Economic Development,
- Coastal Zone Management Authority,

- European Union,
- PACT Co-Management Project Coordinator,
- Mesoamerican Biological Corridor Project National Liaison Officer,
- CBWS community representative,
- CTWS community representative,
- Northern Belize Biological Corridor Project (PfB) Coordinator,
- BAS Executive Director, and
- BAS Project Coordinator

The role of the TAC is to “1) review all project reports, 2) ensure that the materials produced for the project promote the objectives of the project, 3) ensure that the communities in the project area achieve maximum benefit from the project, 4) assist in promoting the project objectives with policy makers and other stakeholders, 5) keep the project coordinator abreast of information that may impact the project, 6) give guidance to the project Coordinator, and 7) meet on a quarterly basis” (Salas and Andrade 2001). Because of the representatives on the committee, there was a great opportunity to discuss their experiences, expertise and lessons learned in order to strengthen the co-management process (Salas and Andrade 2001). The TAC did not meet the second year of the project due to changes in administration but planned to reconvene the third year. As of August 2003, this had not happened.

4.5.3 Economic Demonstration Projects

The second component of the Belize Audubon Society Co-management Project was the use of economic demonstration projects (EDPs) to offset the negative effects of the protected area on people’s livelihoods. These EDPs were intended to be environmentally friendly and economically sustainable (BAS 2002). In the project proposal submitted by BAS to the European Union, BAS cited ‘lack of viable economic alternatives’ as one factor contributing to a lack of participation on the part of buffer zone communities. Community participation is a critical component of ensuring long-term biological diversity and ecological integrity of Belize’s ecosystems. Hence, by ensuring alternative income to residents, BAS theorized that the residents would have a socio-economic incentive to participate more fully in the protection of biodiversity. The economic activities were designed to be “implemented, tested, and modified for replicability in other areas” (BAS 1999).

The Belize Audubon Society worked with lending institutions in Belize to secure loans for the communities. These institutions included the Belize Enterprise for Sustained Technology (BEST), the Development Finance Corporation (DFC), the Small Farmers and Business Bank and other small business finance agencies. Communities were encouraged to take these loans after BAS provided them with the initial start-up capital, equipment, materials and training (BAS 1999).

The proposal identified specific projects to the EU and also called for feasibility studies of those projects (BAS 1999). According to the proposal, at CTWS, residents had expressed interest in establishing a gibbon-rearing facility, a cashew and cohune nut-

processing facility, fruit preservation and processing, and a community fish farm. At CBWS, residents were interested in bee-keeping and honey production, medicinal plant and aromatics production, and craft production. Other possible projects identified in the proposal included iguana and crocodile culling and coffee production. Moreover, the proposal called for identifying “two additional *in-situ* projects per site and two additional *ex-situ* projects per site (BAS 1999).

Training, consultations on marketing, and collaboration with other sites were all called for in the proposal, as were annual workshops between project communities and other stakeholders (BAS 1999).

The Projects

At CBWS, a consultancy report by Pablo Isla Villar conducted over a twelve-day period provided background for the “economic opportunities for the buffer zone communities [at CBWS] in order to prepare them to the co-management of the protected area” (Isla Villar unpublished). It was conducted before the BAS EU proposal was written, and served as a basis for how the EDPs should be determined. This report was based on interviews with relevant stakeholders in each community, and called for several specific components for the EDPs. First, the report stated that BAS should maintain a maximum amount of visibility of its own participation. Second, it recommended guidelines for economic projects. It stated that while these should not be detrimental to biodiversity, they should not necessarily relate conservation priorities. Existing groups should be encouraged to get involved with these projects and new groups or individuals should also be encouraged to participate. The plan recommended no minimum set group size. A key guideline in the report was that groups or individuals should contribute part of the start-up funds for the project, and since the project would be set up primarily to generate income, the group or individuals would be induced to pay this initial investment. Lastly, the report recommended that BAS should provide technical assistance throughout the process, and provide a grace period on loan repayment for projects that take longer to produce profits (Isla Villar unpublished).

The actual projects called for in the BAS EU co-management proposal were determined through consultation with the buffer zone communities. This consultation was conducted by BAS officials, though it is unclear exactly which community members were interviewed as documentation in this area is lacking. According to the Year 1 EU Report, these projects were reconfirmed with the affected communities before the initial proposal was submitted to the EU (Salas and Andrade 2001).

The next step in the economic demonstration process involved meeting with the Ministry of Agriculture to determine feasibility markets for the proposed projects. Through the Ministry of Agriculture, BAS was introduced to other agencies working on three of these projects, including cashew processing, fishing farming and honey production. Belize Audubon subsequently became a part of the Food and Roots Committee, which represented all the relevant organizations from various industries. These included the Ministry of Agriculture, the Belize Trade and Investment Development Service

(BELTRAIDE), the Inter-American Institute for Cooperation on Agriculture (IICA), the Cooperatives Department, and the Taiwanese Technical Aid Mission. These organizations committed their assistance to BAS in developing the cashew cooperative, but did not commit any assistance for honey production. No further mention is made in the Year 1 Report or Year 2 Report on fish farming (Catzim 2002; Salas and Andrade 2001).

The projects cited above, including the cashew coop, fish farming, gibbon rearing, and the honey coop were also listed in the EU proposal. According to BAS officials, once the projects were included in the proposal, the project could not be changed; that is, funds were earmarked solely for those projects and could not be redirected. Moreover, there were site-specific; that is, they were slated for specific villages (Catzim and Moreno 2003).

Cashew Coop

The Cashew Coop was the largest economic development initiative to come out of the co-management project. As stated above, the various organizations on the Food and Roots Committee committed themselves to assisting in the formation of cashew coop. Not stated in any of the reports is the fact that a Brazilian cashew company was attempting to move into the area (Catzim and Moreno 2003). In an effort to create a competitive market and keep the Brazilian company out, the Food and Roots Committee members worked together to broaden the scope of the project and create a competitor to the Brazilian company (Catzim and Moreno 2003). This pressure seems to have caused BAS to move away from the initial plans of basing the processing plant in Crooked Tree. The village of Sand Hill, about 15 miles southeast of Crooked Tree, was chosen as the site for the cashew processing facility (Catzim and Moreno 2003).

A Steering Committee was formed to direct the Coop, which was officially licensed as the Belize Cashew Producers Cooperative Society Ltd. The following organizations were appointed by the government to serve on the Steering Committee: The Ministry of Agriculture, BELTRAIDE, IICA, DFC, Small Farmers Business Bank (SFBB), and BAS. The executive body of the Coop was composed of community members from Crooked Tree and the other major cashew producing community in the area, Burrell Boom (Catzim 2002b). The community members involved in the project received loans to help them get started. Many members from Crooked Tree dropped out after the factory was moved to Sand Hill, as they felt that they had been betrayed. Many also felt that coop members did not have a real voice in decisions, and stated that a member of IICA was making all of the decisions regarding the project (Catzim 2003). Crooked Tree was the only CTWS buffer community involved in the project.

Equipment for the Coop was bought from El Salvador based on the recommendation of a technical expert. The expert had visited a cashew processing plant in El Salvador and felt that the equipment would be suitable for the needs of the Belize cooperative (Catzim 2002b). However, in Crooked Tree and surrounding villages, the people roasted their

cashews to give them a distinctive, Belizean flavor. The cooker bought in El Salvador for the Coop processing facility was a steamer, not a roaster.

In Crooked Tree, cashews are processed by roasting in small amounts. Cashews are picked in small amounts and sold for cash to neighbors, family members, and friends. If cashew producers sold their nuts to the cashew coop, there would be a year's delay before any money was generated, so the cashews would be given to the coop on credit, although the price per pound would remain the same as selling to neighbors (Richards 2003). As a result, the factory, which was scheduled to produce cashews by May, 2003, was not functioning as of July 2003.

Ben Richards, a Peace Corps Volunteer who had come to Crooked Tree to help establish the Cashew Coop, stated, "at the time, the [cashew coop] project was not presented as co-management, but [rather] that BAS was dedicated to getting equipment for the factory." Richards also stated that he was unaware of both the local advisory committee and regional advisory committee (Richards 2003).

Fish Farming

The fish-farming project was initially slated for development at the village of Lemonal, but continuing social and land-tenure problems in that village led the project coordinator, BAS community liaison officer and CTWS park director to reconsider the plan. After some deliberation, they determined that smaller, more manageable projects would be better for the community. Members of Crooked Tree Village showed interest in developing the fish farm in light of this development, but nothing concrete has yet been set forth (Catzim 2003).

Honey Coop

Mayan community members living in Maya Mopan were already engaged in honey production when BAS conducted a feasibility study of developing a honey cooperative. However, they were not a registered cooperative. BAS, with the help of the Ministry of Agriculture and IICA, provided training and education in how to set up a cooperative, including the operation and legal components of such an endeavor (Catzim 2002b). BAS provided the members with materials and equipment, including overalls, smokers, wax and hives (Catzim 2002b).

As of September 2002, the Ministry of Agriculture was managing the project, though BAS solicited help from BEST to assist. At an annual expo, BAS displayed the products of the honey coop, and in so doing helped the coop establish a connection with a successful honey producer in the Orange Walk District (Catzim 2002b).

Maya Center Women's Group Craft Center

The Maya Center Women's Group had been successfully selling gifts since the opening of the CBWS in 1988 (Saqui 2000). Throughout the years, the group has worked closely

with BAS, and BAS was therefore responsive when the women requested help in building a new craft center. The women were able to contribute 25 percent of the costs up front, and after a few design changes brought the price of construction down, they were able to contribute 50 percent of the cost of the new building. With a continued rise in tourism, the new building was an important step in keeping up with increased visitation and demand. BEST is currently working with the women's group in the areas of pricing and the diversification of products (Catzim 2002b).

Alternative Livelihood Exchange

In August 2002, Program for Belize (PfB), the Meso American Biological Corridors Program, and BAS organized an exchange program between community representatives from Maya Mopan, Georgetown, Maya Center, and San Pablo. This study-tour enabled these representatives to share their experiences in alternative livelihood activities that did not rely on traditional extraction such as hunting and fishing, with other community representatives involved in the northern Belize Biological Corridors project. It was also an opportunity to expose participants to alternative livelihood opportunities; for participants to learn about other possible income generating projects conducted in central and northern Belize, such as non-timber forest products, traditional preserves, straw broom production, agroforestry, and ecotourism; and to encourage communities to explore and get involved in alternative livelihood activities compatible with the biological corridors concept (Catzim 2002b). BAS partially covered the expenses of four community members from villages around CBWS, while PfB covered the remaining expenses (Catzim 2002b).

Organic Cocoa Project

Currently the village of Maya Mopan produces one-third of all the cocoa produced in Belize. A cooperative was formed by members of the village, which secured 500 acres of land to attempt to increase production by 2000 percent. The cooperative requested for BAS's support because the land borders the sanctuary. More importantly, since organic cocoa requires shade, the farm would serve as a buffer to the sanctuary. The cooperative has invited farmers from Red Bank, Santa Rosa, San Roman, and Maya Center to participate, although George Town farmers have informed the Maya Mopan Cooperative that they are not interested (Catzim 2003).

Tourism Development

Following the leadership training sessions sponsored by BAS, several community members demonstrated an interest in tourism-based projects. BAS documents state that 'several' individuals were given micro-enterprise loans to start their own initiatives (Catzim 2003). Two community members from Crooked Tree and Maypen Villages more recently worked on a tourism project to encompass all five buffer zone communities around CTWS. They are seeking to create a Master Plan that lists the tourism possibilities in all villages, and from that plan each village could develop their own tourism initiatives (Moreno 2003b).

4.5.4 Resource Management Training

The third component of the BAS co-management project is Resource Management Training. This component was intended to provide community members with the skills and knowledge to undertake protected area management and work more efficiently in sustainable development initiatives. The specific training that took place is described below.

Leadership for Community Development Training

Community members bordering CBWS, CTWS, and Blue Hole National Park engaged in Leadership for Community Development weekend training sessions between July and December 2001. The curriculum included training in Community Development Planning, Leadership for Community Participation and Advocacy, as well as Sustainable Livelihoods, Micro-enterprise Planning, Micro-enterprise Management and Environmental Conservation. The training was jointly funded by HIVOS, a Dutch Humanist group, the MacArthur Foundation and the EU and conducted by contracted specialists. All of the participants were interviewed and selected by BAS on the basis of their individual leadership abilities (BAS 2001).

The Community Development Planning training module examined the major obstacles in community development, importance of community planning, as well identifying practical methods for getting the community involved in the planning process (Salas and Andrade 2001). The Leadership for Community Participation/Action training module discussed how leadership styles can enable different community members to actively participate in the development process. The Advocacy training module taught participants how to develop their own advocacy campaign. As a result of this module, the buffer communities of CTWS met with their local area representative to lobby for a multi-purpose building in Gardenia and new highway signs for the entrance of Crooked Tree Village. Also, at CBWS, Georgetown and Maya Mopan lobbied for the installation of an adequate community water system. Both sites were successful in acquiring their requests (Catzim 2002b).

The Sustainable Livelihoods training module introduced participants to the concept of sustainable livelihoods and how it could be applied to their lives in Belize. Specifically it discussed the areas of agriculture, forestry, fisheries, and tourism. The Micro-Enterprise Planning and Management module introduced the participants to the process and concepts of planning and implementing a micro-enterprise. During the sessions, participants discussed the necessary skills and knowledge to run a successful business and as a result, some participants developed a micro-enterprise plan and received funds from BEST (Catzim 2002b).

Proposal Writing Workshop

A Proposal Writing Workshop funded by GEF was conducted in January 2002, along with the University of Belize to promote self-sustainability. The workshop presented basic skills for developing proposals for funding from the GEF/UNDP small grants

program. The CBWS buffer community participants developed a proposal to address the garbage disposal issue in the area (Catzim 2002b).

Communication Skills Program

During the formation of the Local Advisory Committees, BAS partnered with the National Communication Skills Program of the Ministry of Education to teach some of the community members of Maya Center and Maya Mopan language and writing skills necessary to effectively participate in consultations within their communities (Salas and Andrade 2001).

Natural Resource Management Training

There were efforts to collaborate with PACT and St. John's Junior College, a Jesuit tertiary level institution, in developing a national Natural Resource Management Training Program (Salas and Andrade 2001; Catzim 2002b). During the second year of the co-management project, BAS met with community members gain support for the training session. As of September 2002, the Resource Management training had not been conducted and was rescheduled for the third year of the co-management project. There were also plans to establish natural resource management training facilities at both CTWS and CBWS (BAS unpublished).

Exchange Program

Separate from the Alternative Livelihood Exchange Program that was discussed above, community members from the CTWS buffer communities traveled to Mexico to learn how local communities benefited from protected areas in the form of tourism (BAS unpublished). Also, the Chairperson of the May Pen Village Council, the BAS Community Liaison Officer and Project Coordinator visited Guatemala⁷ in 2002. This trip was intended to expose the Chairperson to tourism in other countries and to compare that experience with tourism in Belize, as well as, to strengthen BAS's understanding of tourism at the community level. During this trip, the participants contacted groups involved in the management of various types of protected areas and local artisans who shared their techniques and marketing strategies. They focused on the "different types of attractions; tourist facilities and services; management of the area; whether tourism appeared sustainable at each site; how communities contribute to the sustainability of tourism in the area; and the benefits derived by surrounding communities from the level of tourism" (Moreno 2002b). From this experience, the participants learned that in order for tourism to be sustainable in protected area management, it must provide "direct, tangible economic benefits 'common man' receives as a result of protecting an area" rather than from regulations (Catzim 2002b; Moreno 2003b).

Also, in September 2002, the treasurer of the Crooked Tree Village Council, the Community Liaison Officer and the Project Coordinator attended the VI Congress of the

⁷ Trip to Guatemala was funded by Organization of American States (OAS). Sites visited included Peten, Guatemala City, Atitlan and Antigua (Moreno 2002b).

Mesoamerican Society for Biology and Conservation regional seminar in Costa Rica. They attended a workshop titled “Local communities’ participation in the management of protected areas and the conservation of biodiversity.” This seminar marked the first time representatives from all the Central American countries gathered to discuss co-management of protected areas in the Mesoamerican region and the Caribbean. At the meeting, the development of a regional network was discussed to share experiences and lessons learned from co-management projects. This experience could provide a basis for other countries to learn from and for the creation of a regional concept for co-management (Catzim 2002b; Catzim and Moreno 2002).

4.5.5 Environmental Education

The fourth component of the project was Environmental Education (EE). One of the Ministry of Education’s main goals for education in Belize was to develop an awareness, sensitivity and commitment to conserve and protect our natural resources and environment (Government of Belize 2004). In 1995, a National EE Strategy was developed in Belize. It was developed with the help of the Natural Resource Management Protection Project (NARMAP), which had participants from the GOB, USAID and the World Wildlife Fund (Medina 1995). They came together for a two day conference to set priorities and define goals and objectives for EE in Belize. During the conference the problems and misconceptions of EE were also addressed (Medina 1995). The National EE Strategy was then distributed to those involved in EE through out the country.

The Belize Audubon Society and Environmental Education in Co-management

BAS was created under the auspices of EE; however its focus has evolved to protected area management. Currently, BAS remains involved in EE and has played a role as a part of the co-management project with CTWS and CBWS. The co-management program uses the phrase Education for Sustainability (EfS) when speaking about its EE programs. EfS encompasses all the characteristics of EE but in addition to the teaching about the environment, EfS includes the ideas of the equity and economy into its programs and activities (BAS 1999). Within the EE thematic area, BAS stated four goals:

- Create interactive education for sustainability programme for all relevant stakeholders;
- Recruit students and youth to participate in EfS theater troupes and presentations to communities;
- Produce brochures and posters to complement the EfS programme; and
- Create national public education campaign utilizing the media sources to increase knowledge about BAS and the importance of protected areas and ecosystems.

Schools

Presentations

The primary focus for BAS EE efforts has been in local area schools. When requested, wardens have given lectures and slide presentations to the students. In October 2002, wardens attended a skill building workshop in teaching environmental education (Wade 2002).

Kits

In the third year of the project, an environmental education consultant was hired to coordinate and develop an Environmental Conservation Carnival, that would take place at schools across the country (Salas and Andrade 2001). In partnership with the Old Woman's Creek Estuarine Reserve (OWCER) in Ohio, USA, another kit and a display on songbirds was developed for CTWS. Other themed activity kits on biodiversity and ecosystems have also been produced that teachers can borrow and use in their classrooms. The teachers of CTWS and CBWS were also provided with training workshops to familiarize them with these the topics and contents of these kits (Wade 2002).

Special Educational Events

World Wetlands Day was celebrated in February at CTWS. Thirty children were introduced to wetlands through display, presentations and a nature walk (Wade 2002). CTWS and CBWS also hold activities every Earth Day for students (Catzim 2002b). In April 2002, Earth Day was celebrated at CTWS with over 300 students from surrounding villages (Wade 2002).

Formal Sector Linkages

Efforts were made to work with the ministry of education to help infuse the concept of EfS into the national curriculum (Catzim 2002b). BAS was working with national education institutions, such as the University of Belize, to develop and implement trainings for teachers and community members (Wade 2002).

Tourism

BAS provides tourists with environmental communication and environmental interpretation through the visitor centers, exhibits and trail signage at CTWS and CBWS (Salas and Andrade, 2001). In the second year of the project, the visitor centers were upgraded, by improving existing and adding new educational displays, to provide better services to both tourists and community members (Salas and Andrade, 2001). In CTWS, an artist from the United States worked with local educators to develop and paint murals on the walls of the visitor center. Nature walks are also provided at CBWS for an additional fee (Wade 2002).

Community

Leadership Training

In year one of the project, BAS partnered with the Belize Enterprise for Sustainable Technology (BEST), in the development and implementation of the Leadership for Community Development training program. Fifty-four community members participated in this project. In year two of the project, BAS identified some follow-up activities that they hoped to implement. These activities would be designed to help community members apply what they had learned in the original training program (Wade 2002). In year two of the project, one of the follow-up activities was implemented. A small number of community members were able to participate in a proposal writing workshop put on in partnership between BAS and the University of Belize (Catzim 2002b).

Media

Throughout the month of April 2002, Radio announcements were used to raise awareness of environmental issues, promote the protected area and opportunities within the protected area. Also, video clips of the protected areas were shown on television on a daily basis.

4.5.6 Monitoring and Enforcement

The fifth component of the project was a monitoring and enforcement program which was intended to reduce the threats and encroachment at CTWS and CBWS. The project planned to develop a water quality monitoring project that would train staff and community members in sampling techniques. The project also planned to develop a wildlife assessment project which would train community members in wildlife monitoring techniques, bird censuses and other biological assessments; and to establish a community 'watchdog' or deputized community patrol which would use non-lethal weapons techniques, legislative training and radio communications training. Also, the monitoring and enforcement program would implement the regional monitoring and evaluation protocol for protected areas management developed by the Regional Environmental Project for Central America/Central American Protected Areas System (PROARCA/CAPAS) (BAS 1999).

In 2001, as part of the monitoring and enforcement program, two BAS staff (the Co-management Coordinator and Protected Areas Program Director) and two community members from CTWS (Principal of Biscayne Government School and Principal of Crooked Tree Government School) attended a Staff and Community Exchange Program with the Old Woman Creek Estuarine Research Reserve (OWCNERR) in Huron, Ohio (Catzim 2002b). Here, the participants were trained in water-quality monitoring, bird monitoring and census and enforcement techniques. Once they completed the training in Ohio, they felt that the schools in Belize would be able to help with the water quality monitoring if they had the training and equipment; therefore, the BAS Project Coordinator agreed with the University of Belize to design and conduct the water quality

monitoring program for CTWS (Catzim 2002b). The water quality monitoring program and enforcement training were scheduled to begin in 2003, including the relevant buffer communities (Catzim 2002b).

4.5.7 BAS Institutional Strengthening

The sixth and last component of the co-management project was BAS's institutional strengthening. This included: collaboration with the University College of Belize to update and expand the current warden training program; the creation of resource centers at CTWS and CBWS; hiring relevant staff for the project; and networking with other national and regional organizations in co-management activities and the creation of mechanisms to exchange experiences and lessons learned (BAS 1999).

In 2002, the CTWS and CBWS wardens participated in education, advocacy and wildlife monitoring training sessions. The education training instructed the field staff in the preparation of educational programs and provided the tools to develop outreach programs. The advocacy training focused on the identification of potential problems at the protected areas and how to develop an advocacy campaign to address these problems. The wildlife monitoring training concentrated on the biological aspect of the protected area, such as animal track identification, wildlife sighting and flora recording. The actual comprehensive monitoring program was scheduled in 2003 (Catzim 2002b).

Two BAS staff members completed a one-year leadership training session in 2002, which PACT conducted for its co-management project, in order to inform and prepare themselves for the BAS co-management project (Catzim 2002b). Of the two staff members to complete this training, only one, the Director of the CTWS, was still employed by BAS in 2003 (Catzim 2002b).

The resource/visitor center at CTWS underwent several upgrades. This included a boardwalk interactive exhibit⁸ to teach visitors about the biological diversity and ecological importance of the CTWS wetlands, as well as the influence of the local Creole culture and activities on the sanctuary. Also, there are resource materials (field guides to birds, plants, reptiles, etc) were also added to the newly renovated Visitor Center (Catzim 2002b).

According to the 2002 EU report, the design and development of the resource/visitor center at CBWS was discussed by the BAS Education Coordinator and the Project Coordinator. They visited several National Audubon centers in Florida to develop a new visitor center at CBWS that would "adequately meet the needs of a growing tourism industry as well as the need for adequate interpretive exhibits" (Catzim 2002b). As of 2002, the Education Coordinator established a development committee to assist in the formation of the plans for the visitor center (Catzim 2002b).

⁸ The boardwalk exhibit was constructed with the help of an American artist residing in Crooked Tree Village, a local educator, and the BAS Education Coordinator.

After the first year of the project, BAS came to the conclusion that the CLO and Park Directors needed to be separate people because of the amount of responsibilities inherent in both positions. A CLO was hired to work with the buffer communities at both CTWS and CBWS. Even though this position resulted in increased effectiveness, BAS realized that a second CLO was needed to work only with the buffer communities of CTWS, with the existing CLO focused on the buffer communities of CBWS. The Project Coordinator changed twice within a six month period, causing delays while the new individual familiarized themselves with the project and communities. Another disruption occurred when the European Commission closed its office in Belize and changed its staff twice in Brussels within the second year of the project (Catzim 2002b).

BAS has expressed an interest in strengthening its network with other organizations doing co-management in Belize and in the region. Whether this entails contracting specialists to conduct its training, sharing its experiences with other organizations, or providing technical support to the communities, BAS has expressed the importance of sharing its experiences and consulting for outside advice. BAS identified the Co-management Seminar in Costa Rica as having the potential to act as a forum for BAS and other regional organizations to work together toward successful co-management agreements in the region (Catzim 2002b).

4.6 Project Monitoring and Evaluation

Monitoring and evaluation of the project was initially scheduled to occur at annual meetings set up by the project staff and consultants. In addition, an independent survey was intended to be used to determine the efficacy of the Education for Sustainability and to determine the change in people's perceptions and attitudes. These evaluations were not conducted for the first year of the project. The second year evaluation became the charge for this study prepared by University of Michigan research team. The logical framework for the project lists the objectively verifiable indicators and sources of verification for the overall objectives, purpose, expected results, and activities (Catzim 2003). (See Appendix C for the Co-Management Project Logical Framework).

Chapter 5: Methodology

This project is intended to fulfill the requirement for a third-party evaluation of the progress of the co-management project, as set forth by European Union (EU) funding. This report is based on data gathered through field research conducted between June and August, 2003, from a variety of stakeholders involved in the Belize Audubon Society (BAS) co-management project, including: BAS staff members (Executive Director, Community Liaison Officer, Co-Management Program Coordinator, Education and Advocacy Coordinator and sanctuary wardens), Government of Belize officials (Forest Department), other Belizean NGOs involved in co-management (Toledo Institute for Development and Environment (TIDE), Community Baboon Sanctuary and Protected Area Conservation Trust (PACT)) and community members living in the buffer zone communities of Crooked Tree Wildlife Sanctuary (CTWS) and Cockscomb Basin Wildlife Sanctuary (CBWS). Further information was gathered by reviewing BAS co-management project documents and national legislation pertaining to protected areas in Belize. Some of the key reports reviewed include: the original proposal BAS submitted to the EU, monthly and yearly progress reports submitted by BAS to the EU (as of March 2003), BAS staff field notes, management plans at both CTWS and CBWS, training and education documents developed by BAS, the Village Council Act, the National Park System Act and the Memorandum of Understanding between BAS and the Government of Belize.

The research team developed an interview protocol based on the aforementioned co-management documents supplied by BAS and based on information gathered through discussions with BAS project staff. Interview questions for each group of interviewees were developed based on five of the six thematic areas set forth in the BAS Co-management proposal to the EU: the structure of co-management, economic demonstration projects, resource management training, environmental education, and BAS strengthening. The intent of examining the BAS strengthening component was not to examine the internal competency of the organization, but rather to examine the interactions of BAS staff with local communities in order to gain insight into the effectiveness of the project. Due to time constraints and a lack of baseline data, the research team did not conduct an assessment of the sixth thematic area of the co-management project, monitoring and enforcement.

Different protocols were developed for each of the different stakeholder groups including: BAS officials, Government of Belize officials, other Belizean NGOs involved in co-management, community members and children of the community. These protocols were approved prior to field research by the University of Michigan's Institutional Review Board (IRB). After an initial interview within each group was conducted in the field, the focus of the protocols was further refined in order to account for cultural differences. (See Appendix F for Interview Protocols).

In addition to open-ended interview questions, a general survey using a Likert-type scale and an open ended survey that focused on the barriers to co-management were developed to obtain additional feedback from community members. Initially, a one to five scale was

developed for the survey, but in the field it was determined that community members were having difficulty understanding this scale. The scale was then changed to allow for responses in the form of yes, maybe/some, or no.

The first week in country, two members of the research team conducted initial site visits at all 10 communities with Nellie Catzim, Belize Audubon Society Co-Management Project Manager and Heron Moreno, Belize Audubon Society Community Liaison Officer. During these initial visits the team was introduced to key members in each of the communities, including Village Council chairs and members who had been active in the co-management project to date. These initial visits provided contacts and gave a brief overview of each of the communities' unique dynamics and cultural differences.

Community interviews began in June. Care was taken to spend time meeting the community members before setting up an interview. Many of the community members were hesitant to talk with the project team due to negative experiences with previous researchers. Once the initial participants were interviewed, additional interview participants were recruited from referrals obtained from initial interviewees. Participants were also selected at random through meetings with people at businesses and homes around the villages. Child participants were recruited through their parents. Most often, parents were asked after their interview, if one of their children over the age of twelve could be interviewed. Seventy-eight interviews with community members were conducted, 38 in CTWS and 39 in CBWS. (See Appendix G for Demographics of interviewees).

The research team also attended several community meetings that were either organized by BAS or one that was in conjunction with an already scheduled community-wide meeting. Attending the meetings provided valuable insights and observations of the interactions between BAS and the local communities, as well as providing information on the interactions of the community members with one another.

The project team was able to spend a substantial amount of time in some of the communities and record observations, especially the village of Crooked Tree where the project team stayed while collecting data at CTWS buffer communities. Thus, in addition to interviews, information was gathered from informal conversations and time spent with the community members.

Interviews were conducted with at least two project team members present. One interviewer would verbally conduct the interview while the other took notes. When possible the interview was digitally recorded with the permission of the interviewee. Notes from the interviews were transcribed either in the field or upon returning from Belize.

Once all the interviews had been transcribed, all community member interviews were separated into major topic headings (Demographics, Village Council, View of Protected Area, Role of BAS, LAC, Economic Demonstration Projects, Leadership Training, Environmental Education, Barriers and Survey) in a spreadsheet matrix. Once all of the

data was sorted into appropriate headings, project team members analyzed data looking for major trends that were repeated throughout the data as well as specific remarks. Project members then individually summarized these findings by major topic headings. The general survey and the barriers survey were analyzed qualitatively.

Data results were then categorized based on examples of collaborative management feasibility questions, as outlined by Grazia Borrini-Feyerabend (1995). These broad categories helped to break down the feasibility of collaborative management into six thematic areas: legal, political, institutional, economic and socio-cultural feasibility. Thus, the thematic areas provided a framework to analyze results to examine how the various stakeholders interacted and the capacities of the stakeholders to be involved in co-management. Legal feasibility pertained to the national legal framework set forth by national policies on protected areas. Political feasibility examined the political willingness of the stakeholders to be involved in collaborative management. Institutional feasibility addressed the institutional capacities of the various groups to interact and collaborate with one another, which included the organization of each and ability to communicate with one another. Economic feasibility addressed the issue of economically sustaining the co-management project and ways in which local communities' economic needs should be addressed and made compatible with conservation. Lastly, socio-cultural feasibility addressed the cultural feasibility of sustaining co-management, whether local communities were informed on the issues or valued the protected area, and whether traditional lifestyles conflicted with conservation efforts. Furthermore, Borrini-Feyerabend (1995) set forth indicators of the collaborative management process. These indicators provided a means of analyzing the process by which co-management was being established in the area. (See Appendix H for a complete list of Collaborative Management Indicators and Feasibility Questions).

Recommendations, next steps and areas for further research were then developed based on the analysis of the data results.

Chapter 6: Results and Discussion

6.1 Introduction

As illustrated in the co-management chapter, the process by which co-management is implemented has a multitude of implications for the success or failure of the project. As Borrini-Feyerabend (1995) states, an assessment of the feasibility of establishing co-management must be complete and partnerships should be formed prior to entering into any co-management agreement in order to form an effective co-management regime. This is exemplified in the Sierra de las Minas Biosphere Reserve Guatemala case study (Secaira 2001). Late in the process, managers recognized that not including the key stakeholders in the reserve's formal decision-making in the early stages, proved a critical issue for establishing partnerships. They concluded that their efforts would have been better spent involving and educating key constituents in resource management at the beginning, rather than to immediately set up a representative oversight board. Establishing a board should be a long-term goal and would require establishing key relationships first (Secaira 2001).

Examining the process by which the co-management project began in Belize is out of the scope of this particular research project. However, based on observations and interviews with Belize Audubon Society (BAS) staff and local community members, some issues were identified that refer back to the way the process began. First, two fundamental aspects of community participation are that 1) stakeholders must be aware and knowledgeable of the issues, and 2) that the lines of communication and information sharing must first be established. In addition, in order to develop a project that addresses the needs of the community, an assessment of the community should be conducted. That said, BAS conducted only a limited preliminary assessment of the communities in order to develop the scope and components of the co-management project. Furthermore, lines of communication have not adequately been established between BAS and communities. As will be discussed in the following sections, this appears to have led to the disengagement on the part of the communities, and in some cases, perpetuated the already established tensions between BAS and local communities. Education and training may be facilitating mechanisms to form these necessary relationships; however, components of the project such as Economic Demonstration Projects and forming Local Advisory Committees may be more successful once the partnerships are formed.

This problem stems from the organization's inherent lack of financial and human resources that are required to work with local communities. The organization's mission and focus has been natural resource management—not community development. In order for BAS to conduct a thorough assessment of the local communities' needs would require sufficient time and additional funds. However, BAS was faced with strict grant deadlines, so it stands to reason that the organization was only able to conduct a preliminary assessment of the local communities. The problem was further complicated by stipulations placed on funds awarded to the organization. These stipulations were also based on the preliminary assessment. Thus, in order for BAS to conduct a thorough assessment of the communities and to develop the institutional base within the

communities that is necessary to implement co-management, they first needed funds to develop the partnerships necessary for the implementation of a co-management project.

Furthermore, several overarching barriers exist to forming collaborative relationships that have implications on all components of the project. According to BAS documentation (Catzim 2002b; Salas and Andrade 2001) of the co-management project, there were several challenges that existed before the initiation of the project and throughout the implementation of the project that has affected the formation of collaborative relationships. In the proposal to the European Union, the fundamental problem stated by BAS is the “lack of people’s contribution to the sustainable development of the country’s natural resources” (BAS 1999). Also, unemployment, misconceptions about conservation, feelings of isolation, lack of viable economic alternatives and environmental stewardship, and poor communication between stakeholders existed before and during the implementation of the project, making it difficult to incorporate the involvement of local people in protected area management. It is also important to reiterate that no national framework for co-management has been developed for stakeholders to which to abide, and the capacity of the Government of Belize is limited in its capacity and resources to provide additional support and feedback to BAS. Compounding these problems, the natural disasters of Hurricane Keith (in 2000) and Iris (in 2001) set back the implementation of the project six months since both sites were heavily damaged and attention was focused on rebuilding the communities.

At the organizational level, there were challenges that affected BAS’ ability to form collaborative relationships with the communities. According to BAS reports, the challenges of implementing the project included the following:

- The administrative time required by the project manager to revise reports, budgets and work plans, as well as clarify issues that had not been resolved (Catzim 2003).
- There was a lack of continuity in staff. The Project Coordinator changed twice, and the Community Liaison Officer and European Union personnel also changed during the implementation of the project. As such, extensive time was spent familiarizing new employees with the project, its objectives, activities, and the villages. This set back the project activities and the formation of the Local Advisory Committees, Regional Advisory Committee, and Technical Advisory Committee. Also, information was lost in the transition and community outreach was disrupted as villagers had to become accustomed to new staff (Catzim 2002b).
- There was a lack of detailed reports from the initial planning phase of the project, and misplacement of documents, along with changes in staff, made it difficult to develop complete reports on project planning (Catzim 2002b).
- There was a lack of sufficient vehicles in the beginning of the project to reach the villages, which prohibited BAS from moving forward with the project. A vehicle was eventually purchased to resolve this, but time was lost in building relationships with the villages (Catzim 2003).

According to the survey results of this evaluation, it is apparent that there are many challenges or barriers which affect the implementation of the co-management project at all levels. The following barriers were identified by both the villagers surveyed and BAS staff: 1) there is a lack of local leadership; 2) not enough people are involved in community issues; 3) active villagers in some villages have relocated; 4) misconceptions of protected areas management persists at the community level; 5) relationships between BAS and the villages need to be strengthened; 6) BAS staff is too small and overworked to adequately “reach” the villages; 7) adequate communication between all stakeholders is lacking; and 8) and there is not enough time to accomplish the project activities and for villagers to get involved. (See Appendix I for responses to Survey- Barriers). These barriers must be addressed at the local and organizational level, and require the cooperation of all the stakeholders in order for collaborative partnerships to be developed.

6.2 Co-Management Structure

6.2.1 Process

In the process of co-management, the stakeholders must be aware of the issues and the project activities, as well as actively communicate with each other in order to collaborate in protected area management. The co-management model, which consists of the Local Advisory Committee, Regional Advisory Committee, and Technical Advisory Committee has the potential to provide a mechanism for information sharing among stakeholders and for them to be actively involved in developing protected area management strategies. It is important to note that both the villagers surveyed and BAS did not see the Local Advisory Committee, Regional Advisory Committee, or Technical Advisory Committee as a barrier to forming collaborative relationships. In terms of the actual structure of the Local Advisory Committee, they felt that it was a good idea that could facilitate communication between BAS and the communities and could work if the committees organized around specific activities which would benefit their communities and the protected area ecosystems. However, while the idea was good, several noted that, given the barriers stated above (lack of local leadership, lack of enough people involved in community issues, relocation of active community members, misconceptions of protected areas management, need for strengthening BAS and village relationships, lack of adequate human resources, and lack of communication and time) it would be difficult to implement. Based on observations, interviews, and review of the BAS reports, these committees were not meeting on their own, were not engaged in any specific projects, and were not adequately established in order for information sharing to occur.

Of all of the Local Advisory Committees at CTWS, Biscayne was documented as “the only CTWS buffer community that [had] demonstrated commitment and persistence” (Catzim 2003). In August 2002, the Local Advisory Committee was organized with support by the Village Council to develop a tourist butterfly nursery in Biscayne. The Local Advisory Committee conducted several meetings with BAS to discuss the proposal, yet by November 2002, meetings ceased and the Local Advisory Committee members left due to religious and personal conflicts. As of August 2003, the Local

Advisory Committee was non-functional and the butterfly nursery project was at a stand still. The other Local Advisory Committees at CTWS were documented in BAS reports as not demonstrating any interest in becoming active with regular meetings. These statements were supported by local interviews and observations. Numerous reasons were cited in the interviews such as skepticism of chosen members, members moving out of the area in search of jobs and other opportunities, political and religious differences, no clear activities for the group, inconsistencies in BAS and Local Advisory Committee follow-up and follow-through and a lack of priority that villagers place on protected areas management. As of August 2003, the CTWS Local Advisory Committees had not conducted any meetings.

At CBWS, it was BAS' view that the Local Advisory Committees were more organized and understood its roles. Maya Mopan had the most active Local Advisory Committee due to its high literacy, close proximity to CBWS, employed BAS wardens from the village (Catzim 2002b). Compounding these attributes, the Community Liaison Officer was able to spend more time there than at CTWS (Moreno 2002a). Maya Mopan's Local Advisory Committee was organized around the illegal logging problem occurring outside its village. The village was working to protect the area around a waterfall. Yet as of August 2003, it remained unclear whether or not this issue had been resolved. The researchers observed that Maya Mopan was still organized, especially the *alcalde*, but the state of the Local Advisory Committee as a separate committee was unclear.

The other Local Advisory Committees at CBWS were not well organized. In Georgetown, the Local Advisory Committee had problems with loss of members due to jobs and other opportunities, lack of community support or interest, and the fact that the participants of BAS' Leadership for Community Development Training were not participating. As of August 2003, the same issues persisted. As for the other Local Advisory Committees, documentation of their process was scarce, but the evaluation results indicated they were considered non-functional since they had not met or been actively engaged in a project.

It was apparent that the Local Advisory Committees in all the villages at both CTWS and CBWS, did not meet regularly (intended to meet once per quarter according to the Local Advisory Committee Terms of Reference, Appendix D). The documentation of exactly how many Local Advisory Committee meetings had been held since the initial implementation of the co-management project was difficult to ascertain due to the villagers' confusion of the role and responsibilities of the Local Advisory Committee, as well as a lack of adequate documentation. The survey identified that 80 percent of 57 respondents were familiar with the Local Advisory Committees. Of these, 41 percent stated that the Local Advisory Committees did not meet, 13 percent stated that it met occasionally, and only four percent stated that it met regularly. Common statements heard in all of the villages at both at CTWS and CBWS were that "the [Local Advisory Committee] has not met for two years," and that "the [Local Advisory Committee] is not really active." There were also conflicting responses within the same village, with one resident stating that the Local Advisory Committee meets regularly and one resident saying that it never meets. These responses reinforce the conclusion that there is confusion concerning the structure and purpose of the Local Advisory Committees. At

CBWS, some residents thought that a presentation conducted by BAS was a Local Advisory Committee meeting, and it is possible that this perception occurred in other villages as well.

Given the fact that the Local Advisory Committees were not meeting regularly, it was difficult for the Regional Advisory Committees to effectively develop and play an active role. According to the BAS reports, the only Regional Advisory Committee formed was at CBWS. Representatives in Georgetown, Maya Centre, Maya Mopan, San Pablo, and Red Bank organized around a proposal for a Garbage Disposal Site in 2002. Even though the group members were not Local Advisory Committee members, this group was designated as the Regional Advisory Committee for CBWS. It is unclear why the members were not selected according to the Regional Advisory Committee terms of reference defined by BAS (Appendix E); that is, why Local Advisory Committee members were not chosen for the Regional Advisory Committee. At CTWS, it is unclear whether or not a Regional Advisory Committee was ever officially formed and, as of August 2003, there was no indication that there were any potential projects. According to BAS reports, the Regional Advisory Committee met in February 2003 to discuss a Global Environment Facility (GEF) project but the meeting was postponed due to lack of attendance (Catzim 2003). This reiterates the fact that the Local Advisory Committee and Regional Advisory Committee structures were not actually functioning in any of the villages according to the original plans of the proposal. As of August 2003, the Regional Advisory Committees were still not functioning at the level the project intended and there was confusion among the villagers as to the purpose of the Regional Advisory Committee, as well as whether or not they existed.

As of August 2003, the Technical Advisory Committee had not met since the first year of the project, apparently due to administrative changes. Yet, BAS recognized that there was a need for the Technical Advisory Committee because of its roles and responsibilities. It is important to point out that the Technical Advisory Committee was not represented in the co-management model and it is unclear whether the Technical Advisory Committee was created after the development of the co-management model or whether it was left out for a particular reason. In any event, as long as the Technical Advisory Committee was not meeting, they were unable to practice their roles according to the Technical Advisory Committee terms of reference.

Villagers' level of familiarity with the Local Advisory Committees is an indication of the level of communication that has occurred between BAS and the communities. Community members surveyed were asked if they were familiar with the Local Advisory Committee within their own village or surrounding villages. The levels of familiarity with the Local Advisory Committee varied on whether or not the committee existed, what the member's roles were, and how the members' participation fit into the co-management structure. Of the 57 total respondents to this question, 80 percent stated that they were familiar with the Local Advisory Committee while only 19 percent said they were not familiar. (See Appendix J for Co-Management Structure Results). Though these results show that the majority of the people surveyed were familiar with the Local Advisory Committee, the level of their familiarity with respect to its purpose is unclear. Whether

survey respondents were members of the Local Advisory Committee or not, there was a general observation that people were unclear about the roles and responsibilities of the Local Advisory Committee. Moreover, some of the community members seemed to consider any meeting with BAS officials as a Local Advisory Committee meeting. As stated in the methodology section, the first people interviewed were those referred by BAS; as such, they were more likely to know about the Local Advisory Committee than those who were randomly chosen. Hence, the overall level of familiarity of the Local Advisory Committee within individual communities could be presumed to be much lower than the above results indicate.

6.2.2 Political and Legal Feasibility

Since there is no national co-management framework which defines and clarifies the roles, responsibilities, and rights of stakeholders, the Local Advisory Committee, Regional Advisory Committee, and Technical Advisory Committee terms of reference are the only written description of who should be represented and the roles and responsibilities of the members. These committees play only an advisory role in BAS' co-management project and do not legally have any other rights. A resident at CTWS also pointed out that "No matter how well the [Local Advisory Committee] is working, it's ultimately the government [who makes decisions]." Three stated that the Local Advisory Committee did not have real power or function and that there is no action to motivate it.

Until a framework is developed, the Local Advisory Committees are elected and practice according to the Local Advisory Committee terms of reference. However, the evaluation results regarding membership on the committee did not reflect this level of structure. According to the evaluation results, three villagers expressed disapproval of how the Local Advisory Committee positions were filled, and others felt that the positions should have been elected by the communities. Participants in the training stated that some participants did not end up on the Local Advisory Committee for reasons that were not explained in the interview. They felt that the participants of the training sessions would have made the most qualified Local Advisory Committee representatives. Also, the representatives on the Regional Advisory Committee at CBWS did not reflect the terms of reference. At CTWS, one person made the following comment: "It's a self-selective group; it doesn't represent the community." Three other community members from CTWS said that the Local Advisory Committee had become political with the Village Council. While the views of these three people did not necessarily represent the views of others in the community, given the high level of political tension in some of the villages it is reasonable to think that this may be the case with other individuals. In order to form collaborative partnerships, the stakeholders need to trust the members of the Local Advisory Committee and know the selection process is equitable; otherwise these committees will not have the support of the villagers and will ultimately affect the outcome of the committee's activities.

Political tensions are inherent in communities, and while little can be done by BAS to rectify this, awareness is crucial. Eighteen respondents stated that their own village

councils did not meet very frequently. This was consistent with BAS reports stating that internal community conflicts were problematic. The main reasons stated for poor attendance at the Village Council meetings were political divisions, poor communication and a lack of motivation within the villages, and these made progress on many issues difficult. Village members were divided in their opinion of BAS, which was made more difficult by the fact that the Village Council chairpersons at both CTWS and CBWS were also the head wardens at their respective sanctuaries. Also, some respondents felt that they could not voice their opinions to the Village Council concerning problems with the protected area because of this conflict of interest. As long as the Village Councils have difficulty meeting and addressing their conflicts, it would seem that it would be difficult to expect the Local Advisory Committees or Regional Advisory Committees to do otherwise.

6.2.3 Institutional Feasibility

In order for the structure of co-management to effectively work, the stakeholders must be sufficiently organized. As stated above, the Local Advisory Committees, Regional Advisory Committees, and Technical Advisory Committee were not functioning adequately. One BAS document stated that villagers depended heavily on BAS to call and organize Local Advisory Committee meetings, although, according to BAS this was the Local Advisory Committee members' responsibility (Catzim 2002b). In some of the villages, the members were unaware of the level of responsibility the co-management project activities would entail and they were not sure if their community would support the project activities (Catzim 2003). Since the Local Advisory Committees were not adequately functioning at the intended level, the communities' views and opinions on procedures for the proper management and conservation of the protected area were not being represented in the co-management project. Without this level of functioning, no mechanisms for recommending legislation and regulations relevant to the management of the protected area, or input in the development of the management plan for the protected area, were viable. As long as the Regional Advisory Committees were not adequately organized, villagers were unable to represent themselves in the proper management and conservation of the protected area, and were unable to collaborate with other villages' Local Advisory Committee to address regional issues/concerns that relate to protected area management. Without the Technical Advisory Committee, the project reports and materials produced for the project could not be reviewed to determine whether the objectives of the project were supported or whether the communities in the project area were getting the "maximum benefit" from the project. Also, project objectives could not be promoted with policy makers and other stakeholders. Lastly, the project coordinator could not be updated with pertinent information or be given guidance in the project process.

The most common response regarding problems with the Local Advisory Committee was the lack of BAS's follow-up on the Local Advisory Committee activities. One resident at CBWS stated, "People get discouraged and frustrated; there's no follow through or follow-up from BAS." Another person from CBWS stated that "[BAS] has not come back to let us know what to do." A resident at CTWS said, "...there is no practical

guidance from BAS and [it] didn't consult with Local Advisory Committee on issues." The consistent comments that BAS did not visit the communities more frequently may signify a lack of institutional capacity on BAS's part, namely that the organization does not have the time, money or resources to visit as often as they need to in the early stages of the co-management project. Yet, in order to build collaborative partnerships, the more time and presence that BAS invests, the more it will foster these relationships.

BAS intended the structure of co-management to be self-sustaining, yet given comments such as "At first the [Local Advisory Committee] was active, but BAS wasn't serious" it is difficult to know whether the problem of sustainability is at the village level, with BAS or, more likely, both. The development of a self-sustaining co-management structure is a slow process that requires active pursuit on the part of all stakeholders. Since the Government of Belize plays a minimal role in the management of CTWS and CBWS, it is up to BAS and the communities to ensure that the co-management structure and activities are carried through; yet as noted earlier, the Local Advisory Committees are still depending on BAS to act as the leader. With the lack of sufficient funding and staffing, it is difficult for BAS to be the only stakeholder to ensure that the co-management activities are accomplished. Ideally, the Local, Regional and Technical Advisory Committees would share in this responsibility. It will take time and persistence to get to this point; as one villager from CBWS stated, "Once others see progress, they will join in." A warden at CTWS stated that BAS and the communities need patience and that "it will come to pass." Another stated, "We will get the [Local Advisory Committee] and [Regional Advisory Committee] formed. We hope to get these people active and making decisions for the sanctuary and getting information out to the community."

6.2.4 Conclusion

The Local and Regional Advisory Committees were meant to serve as the structure for co-management and as communication pathways between BAS and the local communities of CTWS and CBWS. However, they have only been in existence since 2000, and this has proven to be too little time to organize the villagers and educate them on natural resource management issues necessary to play an active role in protected area management. The results show that, while the majority of interviewees were familiar with the Local Advisory Committees to some degree, they were unfamiliar with its purpose and roles and responsibilities. Moreover, most individuals stated that the Local Advisory Committees did not meet in their village. While some people did state that the Local Advisory Committees meet frequently, it was observed that their definition of a Local Advisory Committee meeting did not meet the definition as stated in the Local Advisory Committee terms of reference. In other words, community members considered any meeting with BAS as a Local Advisory Committee meeting. Thus, based on both interviews and observation, it was clear that the Local and Regional Advisory Committees in villages at CTWS and CBWS, as well as a Technical Advisory Committee, were not functioning.

6.3 Economic Demonstration Projects

6.3.1 Process

One key element to effective co-management is adequate communication between the various stakeholders and ensuring that all key stakeholders are aware of the issues and projects. Of the 56 interviewees that responded, 75 percent stated that they were familiar with the projects, while 25 percent stated that they were not. (See Appendix K for the Economic Demonstration Projects Data Results).

It is evident that larger projects were recognized as economic development projects sponsored by BAS. For example, at CTWS, the most commonly recognized EDP was the Cashew Co-op, mentioned by 36 percent of respondents from CTWS. Fish farming was mentioned by 25 percent of CTWS respondents, while gibbon rearing was mentioned by 13 percent of respondents. Other projects mentioned by single individuals at CTWS included: a sheep-rearing project, an information center, a sewing project, money to help build the women's center building, loan money for 'machinery', and a tourism management plan. At CBWS, the garbage project and the bee co-op in Maya Mopan both were mentioned by 25 percent of respondents at CBWS. The cacao project in Maya Mopan was mentioned by 15 percent of respondents. Other projects cited by single respondents were: the Maya Center Women's Group craft center, ecotourism, and a pig rearing project. These numbers show that smaller projects that affect only single or few households were not as widely recognized as the larger projects. This also indicates that people were not only unaware of some of the opportunities which BAS provide, but also some ways in which BAS works with communities.

Although the majority of respondents indicated familiarity with these economic projects, several of them were not familiar with the BAS co-management project (see section below on BAS strengthening for more details). Hence, while they were aware that BAS helped to implement economic development projects, they did not necessarily associate them with a broader plan to integrate the communities in park management. While the Isla Villar report (Isla Villar unpublished) states that BAS has to 'ensure maximum visibility of its participation,' there seemed to be a disconnect between the EDPs and public knowledge of the co-management project. This is highlighted by looking at the cashew co-op. One resident stated that, while he had heard of the cashew coop, he was unaware that BAS was associated with it. In addition, a Peace Corps Volunteer who came to Crooked Tree to work on the cashew coop, stated, "At the time, the [cashew co-op] project was not presented as co-management, but [rather] that BAS was dedicated to getting equipment for the factory." This volunteer stated that he had never heard the co-management project, nor of the Local Advisory Committee or Regional Advisory Committee (Richards 2003). If a volunteer brought in specifically to help establish the Co-op was unaware that the project was part of a broader co-management structure, it would stand to reason that community members far removed from the project would not necessarily associate it with BAS either, especially since the factory was located at a distance from CTWS.

Another example of miscommunication was the debate over the type of fish involved in the fish farming project. While three villagers reported that BAS wanted to use tilapia, an invasive fish species, BAS stated on several occasions that it would never have considered such a thing, given that introducing invasive species would contradict their purpose of conservation and have detrimental effects to the environment. The fact that rumors and misconceptions abound is to be expected in any community; however, it does highlight a lack of communication between BAS and the communities, and within the communities themselves as to what has been proposed and implemented for the project.

Another important instance of miscommunication is the fact that the Economic Demonstration Projects have not been targeted to reach those that were most negatively impacted by the regulations of the new protected area, such as fishermen and hunters. As stated previously, it is imperative to know and identify the needs of the stakeholders involved in order to establish the foundation for co-management and in order for the projects to be a success. Otherwise, this may have further implications for the success of co-management, since those who were most affected also harbor the most resentment towards the park. Addressing these targeted audiences specifically may reduce the tension between BAS and the communities, as well as have positive impacts on the conservation efforts. Until there are tangible results or benefits for the villagers, villagers will not be motivated to become involved in protected area management. Without viable alternatives, these audiences, such as the fishermen and hunters, are forced to continue illegally harvesting resources for survival.

6.3.2 Political Feasibility

Political issues are inevitable when financial opportunities arise. One respondent stated, “I have heard that Audubon gives a lot of money for development projects, but only a couple of families benefit and not the whole community.” Concerning the cashew coop specifically, several respondents stated that the only buffer zone community that the coop helps is Crooked Tree Village. One resident of a neighboring village stated, “I’ve heard of the cashew coop, yet it’s only for Crooked Tree.” Moreover, within Crooked Tree, residents were upset that the factory was built in Sandhill, with one resident asking “why is the factory in Sandhill when 90% of the cashews in Belize come from Crooked Tree?” Overall, the total numbers of villagers raising issues concerning the political issues of the Economic Demonstration Projects is low. However, it indicates that some residents perceive that Economic Demonstration Projects are not equitable. While it is impossible to create economic benefits for everyone in the community, it is important to address the needs of the stakeholders and to find alternatives for those negatively impacted by the protected area.

6.3.3 Institutional Feasibility

The institutional capacity of both BAS and the communities is another important element in examining the feasibility of collaborative management. Three residents surveyed at CTWS stated that BAS was unresponsive to community inquiries. One person stated, “We go to BAS with problems, like getting more tourism from the cruise ships, and they

don't always seem to respond.” BAS does not have the capacity to respond to every community inquiry and need. There is only one staff person who is functioning as the liaison to all the communities at both CTWS and CBWS. This is also an indication of the misconceptions on the part of the community members as to the mission of the organization. BAS staff stated that often they are asked by community members to address issues outside the scope of the organization and their mission.

Just as BAS is constrained by human and financial resources, the communities also lack the capacity to work with BAS. For example, one resident stated that “Gardenia want[ed] to set up an Economic Demonstration Project but it fell through. BAS had said they had the money and that the community only had to decide which project they wanted – Gardenia was unable to do so in part due to a change in Village Council leadership.” This sentiment was echoed by another resident who lamented that “the Biscayne projects (Tourism: Butterfly farm, Boardwalk, Resort with cabanas) are still in the planning stage but not going anywhere.” A resident at CBWS also commented on problems with the bee coop: “In reference to bees: the blame of its failure [should be] put on the local people because they couldn't take care of it.” This seemed to be a salient problem for several communities; namely, that they cannot organize themselves to action. This is not the fault of BAS, and BAS should therefore feel no obligation to rectify this. BAS itself has noted in several documents (Salas and Andrade 2001; Catzim 2002b) that internal community problems have hindered community-wide projects.

Given the inherent problems many communities have with working on projects together, it is interesting to note that most people cited smaller projects as types of Economic Demonstration Projects that they would like to see in their communities. This is consistent with the Isla Villar report (Isla Villar unpublished) that recommended that the size of the projects should be discussed with the communities, and that no minimum size should exist. Of the thirty-four people that offered ideas on types of projects that they would like to see, tourism development was consistently cited as an economic development project of some interest, with 53 percent of those responding to this question stating that they were interested in assistance on this matter. At CTWS, the following were also cited by residents as types of Economic Demonstration Projects that they would like to see: cattle raising; pig rearing; deer rearing; and fish farming. At CBWS, the following were also cited by residents as types of Economic Demonstration Projects that they would like to see: craft center; licensed guide training; taxi association; a tortilla factory; cattle raising; pig rearing; yellow ginger; make more trails at the sanctuary; community center/hurricane center; education; and finance training. This comprehensive list highlights the fact that people have many differing ideas about what makes a relevant project and what economic development opportunities are possible in the communities. For the most part, these projects are small and affect only a few households. This highlights once again the fact that many people would like to see smaller projects.

If individual communities have difficulty organizing themselves to action, then having communities come together to work on a project, especially in the early stages, is an unrealistic expectation. That is, if communities can not organize themselves internally,

they cannot be expected to organize and work with other communities. This is apparent in the case of the garbage disposal project. One resident said that the project “did not come about because no funding and did not come up with alternatives [sic].” Some residents raised questions about how this project was determined: apparently, representatives from five communities came together and had to a vote on one project for all of their towns. Since the villages have such different needs and desires, it was perhaps premature to have all communities agree on one project for all.

Despite the problems identified above, six people at CTWS noted the ways in which BAS has helped the communities and has identified ways to work together. One respondent stated that BAS helped the women’s group to get a new building. Two stated that they were able to go through financial training, while two others said that they received loans for a pig-rearing and sewing project. Another person commented that they were able to go to El Salvador for a Cashew Co-op training session. At CBWS, seven people offered similar praise. Two stated that honey is now produced and sold in the local market; one said that the honey co-op got equipment, while another said that BAS seemed supportive and willing to help with the cacao project. Clearly, the projects have helped bring much needed income to the communities, but it will take time before the effects are widespread. Once again establishing relationships with a broader range of the community requires long-term planning and project timelines.

6.3.4 Economic Feasibility

Clearly, introducing economically feasible economic demonstration projects is critical to successful development. However, it is clear that some of the Economic Demonstration Projects were not thoroughly researched. With gibbon rearing, one resident pointed out that “some had an idea about raising gibbon. That would not be a good idea. They take two years to reproduce and usually only have one baby. There would be no profit in this.” This was reiterated by a BAS warden and a warden from the Toledo Institute for Development and Environment (TIDE), who both stated that “rearing [gibbons] doesn’t work well.” A thorough analysis of this project would have discovered these issues before funds were earmarked for this effort in the proposal.

Another example that highlights the importance of careful planning is the cashew co-op in CTWS. In Crooked Tree, people roast their own cashews in small amounts. They pick what they need and sell them for cash to neighbors, family members, and friends. With the cashew co-op, it would take a year before any money was generated, so they would have to give the cashews to the co-op on credit, though they would make the same amount of money per pound as they would selling it to neighbors (Richards 2003). Hence, residents are not motivated to sell their cashews to the co-op. While it is beyond the scope of this project to determine what would or would not be economically feasible, it is nonetheless apparent that a more careful analysis of these projects should have been conducted. This issue also goes back to the importance of the process by which projects are started with communities, since it signifies a lack of sufficient communication.

6.3.5 Socio-Cultural Feasibility

Cultural considerations are critical when choosing any development projects on the part of local communities. Providing these communities with viable economic alternatives is critical for their economic survival, but also culturally significant as well, since they have often practiced their traditional lifestyles for generations. Nowhere is this more evident than in the case of the cashew co-op. A technical expert who visited a cashew processing plant in El Salvador felt that the equipment used at that plant would be suitable for the needs of the Belize cooperative (Catzim 2002b). However, in Crooked Tree and surrounding villages, traditionally the cashews are roasted in such a way that gives them a distinctive Belizean flavor. The cooker bought in El Salvador for the co-op processing facility steamed the cashews. Three residents commented that they did not want to send their cashews to be steamed because they would lose the distinctive flavor.

With regards to fish farming, three people commented that villagers wanted to farm Bay Snook, a native fish that they were familiar with. However, as one person pointed out, “The Fisheries wanted the village to fish Tilapia, which the villagers know nothing about. The leadership was poor because no one tried to educate the village that there was another way instead of Bay Snook. No education was given on Tilapia and how to fish them.” As in the case of buying a steamer for cashews when villagers traditionally roasted them, there seems to be a disconnect here between local knowledge and cultural traditions and the goals of the implementing agency.

6.3.6 Conclusion

As with the Local Advisory Committee, residents seemed familiar with the larger economic demonstration projects that BAS has helped to implement. However, while they were aware of the projects, they were not aware that these projects were part of a broader BAS project to integrate communities into protected area management. Residents did not mention hearing about smaller projects, though these projects would be more manageable given the communities’ lack of capacity to work together. Furthermore, it was clear that not enough research had been conducted in order to choose Economic Demonstration Projects that would address the specific communities’ needs and be economically viable projects. In addition, the terms set forth in the original European Union proposal were too rigid to allow for much needed flexibility in altering projects given changing circumstances. Most importantly, key stakeholders were not identified; as such, the projects, while commendable in many ways, did not address the needs of those most harmed by the establishment of the wildlife sanctuary.

6.4 Resources Management Training

6.4.1 Process Indicators

As Borrini-Feyerabend states (1995), the awareness of stakeholders is a good indication of the success of a project. Almost 85 percent of those who responded were familiar with the resource training that BAS organized for certain community members. (See Appendix L Training Data Results). This exemplifies one area in which BAS is involved

in the communities and establishing a presence with some members of each village. In addition to learning different techniques and strategies to work together, villagers mentioned an increased awareness of BAS' mission. This is not to say that all villagers are clear on the role of BAS and the capacity that BAS has in managing the park. Increasing the villagers' awareness of BAS and its objectives remains a critical piece that still needs to be improved. However, establishing presence and expanding the villagers' knowledge and understanding of the organization through the training sessions have had positive results for BAS, as will be discussed in further detail below.

6.4.2 Political feasibility

Establishing co-management is a highly politicized process which creates one of the most prominent challenges of forming co-management agreements with local communities. Deciding who will be involved and in what capacity can be a contentious process. Furthermore, there is no way to address everyone's needs. However, enabling people to become involved through a variety of means is one way to address a variety of topics relevant to villagers' lives and development of their community. The interview process for the training sessions was one example of this problem. Villagers expressed disapproval about the interview process and stated the process in which trainees were selected was not equitable. Another example of the politicized process was resentment on the part of several respondents from CTWS that the information learned in the training sessions was not shared with the whole community. However, two respondents said that the training sessions were not applicable to everyone; therefore, it does not seem logical to have everyone involved. Overall, having a more equitable selection process may have prevented negative feelings on the part of some community members.

6.4.3 Socio-cultural feasibility

As discussed throughout the chapter on co-management, one of the critical aspects of implementing an effective co-management regime and effective community participation efforts is the community's knowledge about the issue—protected area management and conservation. BAS recognized this fact and acknowledged that devising a training program can make a difference in the participation and the level of commitment of community members buffering the protected area. Thus, the Community Development Planning training module was developed in order to enhance the community members' leadership capacity and ability to work together. This capacity would lead to increased community participation in the project by expanding knowledge on various aspects of co-management and building trust in the process.

Overall, the research indicated that the resource management training did achieve the aforementioned goal and did have a positive impact on some of the residents who participated. Six of the respondents stated that they felt the information received at the training was valuable and useful information and felt that, in varying capacities, their leadership skills had improved. A resident at CTWS said that "the trainings brought a whole new awareness to people here who would otherwise not have gotten the information." Furthermore, residents gained insight into the purpose of conservation.

Some stated that, as a result of the training, their attitudes toward conservation changed. In the long run, this increased awareness may have positive impacts for future successes of the co-management project and aid in getting more people involved in the process. One resident at CTWS said “it encouraged people to go from a traditional way of thinking of preservation to one of building up the community in a sustainable manner...First, I never believed in conservation, but I found out that it is better to conserve than to deplete the resources.” Laying the foundation of understanding was the first critical step in this process.

Four interviewees stated that there was no follow-up from BAS. Other villagers echoed the same problem in casual conversations with them. Thus, while residents felt that they gained valuable information and skills after the training sessions, they were unclear on the application of these skills to their daily lives and wanted more follow up from BAS to learn how to apply these skills. This also exemplifies the overarching problem of lack of communication and methods of dissemination of information between BAS and the communities discussed later in the “BAS Strengthening” section.

6.4.4 Institutional Feasibility

Forming collaborative relationships with the buffer zone communities requires a significant amount of human and financial resources for BAS. However, BAS is constrained by limitations of both these elements, resulting in one of the most salient problems identified by community members—the lack of follow-up from BAS after the training. As already stated, eighteen percent of the respondents complained about the lack of follow-up after the training by BAS.

Change in BAS’ staff also limited its capacity to effectively interact with community members. A resident at CTWS commented that the BAS official from Belize City changed, which created problems for the training. In general conversations with residents, this same problem was reiterated as an overall challenge to forming relationships with community members. As soon as residents were comfortable with one staff member, they would leave and a new staff member would have to start all over with forming trust and relationships.

As discussed in the section on community participation, it is important for the different actors in the partnership to be organized and capable of articulating their interests and point of view on protected area management and the protected area. This obviously requires the people to be informed enough to make decisions based on information instead of emotion. Our observations in the communities indicated that this is a major problem for the communities, but that the training did help address this issue. While, political and religious divisions within and among villages persist and are barriers to co-management, the leadership training sessions did have positive results on the way some villagers relate and work with one another. Three of the respondents said that it gave them an idea of how to achieve something together. This idea was exemplified by one resident at CTWS who said that “we learned how to get together and achieve something.” Three respondents at CTWS and one at CBWS also stated that they can work better with

others as a result of having taken part in the training. One Crooked Tree Village resident stated that “it was very useful-I have made changes in the way I deal with others.” These statements show movement towards bringing the communities together to work together. Other residents at CTWS said that as result of the training we “can network with other community members” and “learn to manage our resources.” Residents at CBWS said the benefits of the trainings were to “work with visitors; give jobs; and develop the garbage disposal project.” In addition to building the capacity with some of the participants of the trainings to collaborate on projects, community members also mentioned that they felt they could influence other members of their community. In fact, two people at CTWS and one at CBWS said that they can influence or teach others in their community. One villager from CTWS said, “Those that were trained can influence the community when they have negative views of the wildlife sanctuary or BAS.”

As previously stated, community members expressed resentment that not everyone in the community was able to attend the training sessions; however, one resident at CTWS commented that this may be because the trainees were already busy with daily responsibilities. Thus, this exemplifies the limited capacity of the community members’ to be involved with the various components of co-management.

6.4.5 Conclusion

The training sessions did address some of the obstacles that the community members face concerning co-management. On a positive note, the participants developed leadership skills, developed communication skills and learned to work together to bridge the gap among community members themselves, as well as between community members and BAS. For others, the training provided an opportunity to learn to lobby their representative for improvements in their village, as was the case for all villages at both CTWS and CBWS. However, there is room for improvement with future trainings for these communities. Specifically, these training sessions have unfortunately reached a small percentage of the overall population for both these sites. In other words, while those who attended the training sessions spoke very highly of them, all residents were not able to attend and receive the same benefits.

6.5 Environmental Education

6.5.1 Process

One integral component of co-management is environmental education as a means of information sharing and keeping stakeholders informed on environmental issues. Thus, education plays a vital role in the preliminary stages of co-management as a way to inform stakeholders on the ecological issues associated with protected areas and in order to allow them to eventually make informed decisions on protected area management. BAS has incorporated an environmental education (EE) program into the local schools at both CTWS and CBWS. The seven wardens that were interviewed at both CTWS and CBWS all mentioned environmental education as part of their interactions with local community members. Furthermore, all BAS officials (from Belize City) mentioned that

BAS had played a role in EE in the schools. One warden and one Belize City BAS official stated that EE activities were being integrated into the curriculum and wardens went to visit schools when contacted by the teachers. Of the 50 interviewees that responded, 58 percent responded that they were aware of BAS coming into the schools to do EE with the children (See Appendix M for Environmental Education Data Results). Thus, BAS recognized the importance environmental education can have in getting information out to community members and have mentioned the critical role education must play in the future of the project.

While it was apparent from the interviews that BAS wardens visit the local schools, there were varying reports how often this occurred; that is, whether it was every two weeks, once a month, or once every two months. When asked how often BAS visited the schools to teach about the environment, three interviewees at CTWS stated that BAS visited the schools two or more times a year and seven interviewees at CBWS stated that BAS visited schools once or twice a year. Thus, BAS may recognize the importance of education in the schools, but it is uncertain the extent to which they are able to provide lessons for the local schools.

One teacher mentioned that she had been able to attend a teacher workshop put on by BAS in which she had learned a great deal and would like to attend more. Thus, this was one avenue through which BAS could reach a broader audience. Developing training for local teachers who could eventually integrate more EE into their lessons would further develop mechanisms of information sharing and communicating. In addition, training teachers to conduct more EE in schools could alleviate the burden from the wardens.

Overall, EE is an area in which BAS was making a positive impact in the local communities as apparent by the number of community members that were aware of BAS' presence in the schools. In addition, the children who were interviewed were able to relate information learned from EE activities in their schools including animals in the protected area, the importance of keeping the environment clean and to not shoot the birds and animals. Although inconsistencies arose when trying to determine how often BAS visited the schools to provide EE activities, it is important that BAS had a presence in the schools.

The main focus of BAS' EE strategies seemed to focus on education in schools, but there appeared to be limited, if any, efforts to educate the adults of the community. Of the 33 interviewees that responded, 52 percent stated that they were not aware of any environmental education for adults. While BAS focused on conducting EE programs in the schools, 97 percent of adult respondents said that they would like to learn more about the protected area and thirty-six percent of adult respondents mentioned they think there should be more EE for adults in the community. These results show a valuable possibility for expanding future education strategies.

6.5.2 Socio-Cultural Feasibility

As indicated by Borrini-Feyerabend (1995), valuing the protected area is important to ensure the long-term success of collaborative management projects. As discussed in the previous section, environmental education is one method BAS utilized to inform children about some of the ecological issues of the protected area. In addition to simply informing children and adults on the ecological issues of the protected area, education is also one means of instilling value in the people of the importance of the protected area.

Based on research findings it is difficult to ascertain whether or not the education program, at this point, is successful in getting the stakeholders to value the protected area. Two children at CBWS made comments about the importance of keeping the protected area clean, stating that it is “so the white people [tourists] will continue to visit.” Thus, although the children did see some value in the protected area, it was based on economic terms and not as a connection with the wildlife or the land. This was further exhibited by the outdoor activities that they mentioned. Although all expressed a love of the outdoors, none mentioned an outdoor activity that had a personal ‘connection’ with nature. This disconnect may stem from providing environmental education activities where the children are not immersed in the environment around them, such as hikes or other activities in the sanctuary. One teacher stated that children did not go out often into the sanctuary because permission must be gained from parents. The children interviewed did mention a couple of special opportunities where they were able to go into the wildlife sanctuary. One child at CTWS had the opportunity to go on a bird walk with their class and another child took a class trip to the visitor center (See Appendix N for Children Interview Data Results).

As evident in the survey results, community members were aware that wildlife and the land around the protected area should be conserved. When asked if wildlife should be protected, 82 percent of the respondents said “yes” and an additional 16 percent said, “somewhat.” The respondents that said “somewhat,” qualified their answer by stating, “as long as they do not interfere with people.” Examples that were usually given were of animals that interfered with their lives such as snakes, crocodiles and jaguars. Similarly, in the survey question regarding protection of land next to the protected area, of the 68 interviewees that responded, 87 percent said, “yes the land should be conserved” and an additional seven percent responded with “somewhat” (See Appendix O for Survey-General Results). This shows that adults in the community felt that there is some value in conserving land and the wildlife of the protected area, but only as long as their lives are not negatively impacted by the protected area. It is beyond the scope of this project to fully assess the extent that these animals impact the communities; however, further research is needed in order to devise a plan to reconcile the conflicts between conservationists and local communities.

In the survey, interviewees were asked whether or not a lack of environmental stewardship in the communities was a barrier to co-management. Twenty-three percent of the 39 respondents stated, “Yes, there is a lack of environmental stewardship in the village;” while 28 percent stated only “somewhat” and 46 percent stated that there wasn’t

a lack of stewardship. Thus, most did not see that a lack of stewardship among the community members as a barrier to co-management. However, comments and actions observed while spending time in the communities tended to dispute these results. One example of this was the number of people observed that kept endangered Amazon parrots as pets. One interviewee stated that such an activity was something that BAS had told them not to do. “They tell us not to take parrots as pets...would you like to see mine?” Other parrots were viewed in cages in which they could barely turn around in, or in cages that were made from fencing tied together that they could easily become caught on.

Other interviewees expressed concerns about not being able to make a living due to restrictions placed on resource extraction in the protected area. One community member said, “People get afraid when the environment is talked about because they feel like their livelihood will be taken away...We need more education about conservation and the environment; also more education on why we should do it.” Given the history of establishing protected areas that has been discussed throughout this report, it is not surprising that community members equate the word conservation with negative impacts on their ability to thrive economically. However, with a clearer understanding of the protected area, existing threats to the protected area and ways of conserving it and providing viable alternatives that are compatible to conservation and development, adults of the community would not have to equate conservation with negative economic impacts. Providing community members the knowledge on these issues remains the fundamental piece of establishing collaborative management with local communities.

6.5.3 Conclusion

Residents and children alike stated that BAS is active in both CTWS and CBWS in bringing environmental education to the school, and that overall their programs are well received and educational. However, the lack of environmental education in the broader community is a serious deficiency in the co-management project. A successful education program is the most crucial element of any co-management regime; if the residents do not care or see the value of protecting the environment. The purpose of all other components of the project, from the Local Advisory Committee to the Economic Demonstration Projects, will be lost on the communities. The fact that so many respondents kept endangered species as pets, or that the children viewed protecting nature as only important so that the ‘white man [tourists] can come to look at it’, is evidence that the values of natural resources protection were not evident to them. As such, community-based conservation projects can never be sustainable. To state again, of all the component of the co-management project, environmental education is the most important. Unfortunately, as far as the broader community is concerned, BAS’ efforts in the area have been minimal.

6.6 BAS Strengthening Ties With Communities

6.6.1 Process

Because the project data mainly deals with the perceptions and attitudes of the residents of the buffer communities of CTWS and CBWS, as opposed to the internal structure of BAS, this section concentrates on BAS' relationship with the communities. One of the goals of the co-management project was to strengthen the relationship between BAS and the buffer communities. This was a necessary first step before the other aspects of co-management could be put in place. Without support from the villages, as well as communication and trust between parties, effective collaboration on Economic Demonstration Projects, training, education, and ultimately the structure of co-management would not be possible. While BAS has been working towards all of these aspects of co-management, their success was largely dependant upon how well they were received by the local people.

To bolster their public image and gain the trust of local people for the buffer zone communities, BAS has increased its presence in the communities with the Community Liaison Officer, who visited the communities on an informal basis as well as in structured presentations at community meetings. While it was unfeasible for several BAS staff to be present at all presentations given to the communities, BAS recognized the importance of exposing more of their staff at these presentations in order to build relationships with the communities and to learn about the issues directly from the communities. This was intended to increase the interactions between BAS and the local people beyond just the village council members and active BAS participants. This has been working, but slowly. When asked how they viewed BAS' role in the community, ten of 45 respondents stated that they had no contact with BAS, while 18 people stated that they had limited contact with the organization (See Appendix P for BAS Strengthening Data Results).

The progress of BAS' efforts to reach community members can be partially gauged by how familiar the people were with co-management or its activities, as well as their responses to the idea of co-management. The villagers familiar with co-management heard about it within the past couple years, either directly from BAS or indirectly through other community members. Ideally, everyone should be familiar with the co-management project, and be well informed in the co-management project activities such as training, Economic Demonstration Projects, and environmental education. Not only is it important for villagers to be familiar with what co-management means, but also about what conservation and protected area management means and how to find economic alternatives which will benefit them and not degrade the environment.

The initial process of beginning a co-management project requires all stakeholders to be aware of the project and its intended function. Answers to the question of whether interviewees were familiar with the co-management project are a good indication of how well BAS had been communicating with the communities. Fifty-eight percent of 50 respondents said that they were familiar with co-management (See Appendix Q for

Familiarity With Co-Management Results). However, several people also commented that they felt that they needed clarification on the definition of co-management, the relevant stakeholders, their responsibilities in the co-management project, and how the process of co-management works.

As part of the co-management project, BAS intended to address misconceptions of protected area management by visiting the villages to educate them about the importance of protected areas and how BAS was managing the areas; yet, sixty-two percent of respondents believed that community members in their village still had misconceptions about protected area management. It should be noted that not all villagers came to the presentations or interacted with BAS on a regular basis. Villagers could not be forced to attend these meetings, so it was the responsibility of those who attended the meetings to disseminate the information. Villagers had been unwilling to commit to projects that they did not understand, yet with more education and presence in the villages, BAS intended to address the villager's questions and clarify how they could work together in the management of the area. As one person said, "You have to win the support of the locals" and they shouldn't be excluded.

Seven out of the eight people who offered an opinion on what co-management meant to them had similar responses: they stated that it is everyone working together for the management of the protected area. One CTWS resident stated that, to them, co-management meant "to work together as a team, focus on one main goal (protect CTWS), and manage an area." Another CTWS resident said that "co-management means we all get in and manage the area, making the rules and enforcing the rules," while a resident of Maya Center said that co-management is "two people making same the decision. If only one is making the decision and then one gets mad, it is not co-management."

In July 2003, BAS organized a meeting in Gardenia and Georgetown to readdress the co-management project and the rules and regulations of the CTWS. The research team was able to attend the meetings in order to observe and evaluate how BAS conducted its presentations to the community and how the villagers responded. The majority of the meetings were conducted in presentation format: a one way dialogue of BAS presenting to the community members. Interaction was constrained and not until the end of the presentation did the villagers ask questions and BAS responded. It was unclear as to what the next steps were to address the problems of the lack of participation in the Local Advisory Committees or any of the other activities of the co-management project. In order for relationships to be formed and project activities to move forward, BAS and the villagers could have taken advantage of these meetings to come up with common goals and objectives and define what they needed to work on before their next meeting. This would also provide an incentive to meet again.

6.6.2 Political Feasibility

While there was not any evidence of any corruption involved with the co-management program, some community members believed that BAS was corrupt. This is very detrimental to the co-management project. Seven respondents, six from CTWS and one

from CBWS, said that BAS had not given money from entrance fees and grants back to the communities. One CTWS resident stated, “We are not involved in proposals BAS writes for the sanctuary, and hear on the radio that the organization gets money for the sanctuary, but we have no idea where that money goes.” A resident from CBWS echoed this sentiment, stating that “the Women’s Group gets 10 percent of entrance fees, but not sure where rest goes; [I] do not see it for the community.” One attendee of the San Roman community meeting stated, “They use our name to get funds and then they don’t give anything to San Roman.” This could also be perceived as a procedural problem stemming from misunderstanding or misconceptions of how money is spent, who is responsible, and how it is supposed to be applied to protected area management. While this misunderstanding of how the co-management project works is the result of a communication problem, it may, in the end, make the project politically infeasible for BAS.

6.6.3 Institutional Feasibility

In building their relationships, the stakeholders’ needs and concerns must be addressed in order to move forward with the co-management activities. Despite the fact that the villages were not adequately represented in the Local or Regional Advisory Committees, 41 percent of the villagers surveyed felt that the needs of their community were considered in park management and 61 percent and agreed that BAS is open to new ideas about park management. Also, 60 percent of the villagers surveyed felt they could personally affect park management.

In order for the villages to be organized around any activities in their communities, they need strong leadership. According to the villagers surveyed, 62 percent felt that not enough people were involved in community issues, causing difficulty implementing village activities that require village participation. Without adequate leadership from, for example the Village Council, schools, or other individuals/groups, it is extremely difficult to motivate village members into active participation. There were numerous reasons for the lack of community involvement such as political and religious differences which can only be resolved at the community level. Therefore, it is difficult to expect the villages to organize themselves within a short amount of time around many types of issues. This affects the co-management project because in order for co-management to reach its objectives, it requires that the communities represent themselves in the Local Advisory Committee and Regional Advisory Committee and that the Village Councils are working bodies which are supported by the majority of the village. It is difficult for BAS to move forward with the co-management project, when the chosen representatives fail to participate or when those who are participating become frustrated with the lack of community support.

6.6.4 Socio-Cultural Feasibility

According the interviews, a sense of distrust was endemic in the relationship between the villagers and BAS. In addition, respondents mentioned that there were not enough BAS staff to adequately reach the community and provide enough local presence to establish

good communication, trust and progress in co-management. Without effective communication, stakeholders did not know what was expected of them and had misconceptions of BAS's role, and what BAS was capable of doing for the villages. As mentioned above, many people became involved with the project because they did not see immediate results and/or economic benefits from the co-management activities. These perceptions hindered the implementation of the co-management project, and considerable time and effort will be required to alleviate these issues.

By working within the cultural framework of the local communities, BAS conducted meetings with the Mayan village of Maya Mopan during their traditional *alcalde* and *fahina* meetings to better interact with the local residents. In July 2003, the research team and BAS were invited to a *fahina* meeting, where the co-management project was addressed along with the rules and regulations of CBWS. In addition, a Wildlife Conservation Society jaguar researcher presented his research at CBWS. The participants were attentive in the meeting and interested in the projects taking place at CBWS, as well as working along with the researcher to set up cameras to determine whether or not jaguars were to blame for killing village dogs. Afterwards, there were other community issues and business discussed relating to the village. There was no opportunity at the meeting for the villagers to discuss the co-management project with BAS.

6.6.5 Conclusion

Like the Local Advisory Committees, many people stated they had heard about the co-management project, but did not appear to fully understand what 'co-management' meant. Thus, it is clear that BAS still has a long way to go in educating the communities on natural resource management and co-management. Not surprisingly, many people still felt resentment toward BAS, and accusations against the organization persisted within the communities along with misconceptions about the protected areas persist. Still, BAS has made great headway in developing closer ties to the communities. Institutional barriers remain on both the side of the communities as well as with BAS. Building relationships with and enhancing the capacity of the communities and BAS requires long-term planning and long project scales.

6.7 Summary

It is clear that many of the problems with the initial establishment of the co-management project still pervade in the individual components of the project as implemented. The lack of thorough analysis of the communities' needs and capacity at the beginning of the project hampers efforts to this day. The problems created have left residents confused over BAS' intentions and goals.

Frequently, the issue of communication arose as a deficiency in the current co-management arrangement. People were unclear what the functions of the Local Advisory Committees were; they did not understand the process by which Economic Demonstration Projects were developed, and they were unclear as to what exactly the co-

management project was and BAS' role in protected area management. While the training and EE programs have been moderately successful, their scope and range was not extensive enough to adequately convey to the communities the purpose of co-management.

As with any large project, political tensions will arise. Given the politicized and divided nature of many of the affected communities, it comes as no surprise that allegations of favoritism and inequities abound concerning the Local Advisory Committee, the training and the Economic Demonstration Projects. The polarized nature of these communities is an inherent aspect of the socio-cultural makeup throughout Belize, and weakens the institutional capacity of the communities. Frequently, the study results indicated that the communities do not, as BAS has said, have the capacity to carry out many of the aspects of the co-management project. Their own institutional barriers create obstacles that will take time to overcome.

On the other hand, BAS has its own institutional weaknesses that need to be addressed. It is clear that BAS does not have the resources, including funding and personnel to give the support that the communities need in the early stages of the project. Moreover the lack of time necessary to effectively implement a project of this scope is a serious weakness.

Despite the difficulties, many areas of the project have shown positive results. Several of the Economic Demonstration Projects have shown some success; participants that attended the training sessions spoke highly of them overall. BAS has established a definite presence in the communities, and is working through many of the institutional barriers that exist within the communities. Said one CTWS resident, BAS has made "Gigantic strides from being stoned by a community to where they are [today]." One resident also commented that BAS was helping to protect the wildlife. Overall, it seems that BAS has worked hard to establish a better relationship with the buffer-zone communities surrounding CTWS and CBWS. While it will take many years before BAS and the communities are able to establish a fully-functional working relationship, it is clear that they have the potential to achieve it.

Chapter 7: Recommendations and Conclusions

7.1 Introduction

The following recommendations are based on readings of other co-management cases, the processes of co-management, and Belize Audubon Society (BAS) documents; discussions with community members, BAS staff, government officials, other NGO officials; and the impressions and perceptions of the research team. While some of these recommendations will be more pertinent to an organization starting up a new co-management project, most of them are meant to enhance the current co-management project underway at Crooked Tree Wildlife Sanctuary (CTWS) and Cockscomb Basin Wildlife Sanctuary (CBWS). Recommendations are given for each of the components of the BAS co-management project and are followed by broader, overarching recommendations.

7.2 Co-Management Structure

Define and Clarify the Roles, Responsibilities, and Purpose of the Local Advisory Committee and Regional Advisory Committee

One of the critical elements missing in community participation efforts is the active involvement of the community members in development of the co-management plan. On one hand, a community's capacity must be built in order for it to be able to effectively participate in the process. On the other, that cannot be accomplished without involvement in the process. It is a paradox. In order for the communities to be effectively involved, they must first be sufficiently organized to contribute to protected area management. However, communities are divided among political parties, ethnicity and land tenure issues. Therefore, they are not sufficiently organized nor do they have the capacity at this point to effectively be involved.

This problem is permeating into the problems with the Local Advisory Committee. It is necessary to clarify the roles and responsibilities of Local Advisory Committee members in relation to protected area management and in relation to BAS because the Local Advisory Committee members are looking to BAS for guidance and direction. Four people at CBWS said they need more guidance and "need to know how to participate," and defining these roles, responsibilities, and purposes of stakeholders would begin to clarify what is expected of them. Not only do they need clarification on what to do, but also what their purpose is and how it fits into the larger picture of sustainable development for their villages and Belize. It may be necessary to revisit the terms of reference for both the Local Advisory Committee and Regional Advisory Committee in order to determine whether the members of these committees have the capacity to actually perform their roles and, if not, determine what the gaps are and how to address them. It is also necessary to reassess whether the selection of the Local Advisory Committee and Regional Advisory Committee members reflected the terms of reference and if they should be revised. It may also be necessary to reassess the membership and level of commitment in order to understand the status of these committees and their

needs. As one villager stated, “work with those already motivated.” As long as members are confused about their roles and responsibilities, the Local Advisory Committee and Regional Advisory Committee will be unmotivated and unable to effectively fulfill their roles. Since the Regional Advisory Committees and Technical Advisory Committees are comprised of Local Advisory Committee members (and other stakeholders in the case of the Technical Advisory Committee) attention needs to be focused on establishing the Local Advisory Committees first, before the other committees will be able to function as well.

In addition to the aforementioned suggestions, another point that needs to be addressed is the fact that the Local Advisory Committee has only an advisory role. Until the Local Advisory Committee has the ability to actually change protected area management policies, feelings of disempowerment will persist among Local Advisory Committee members, and they will be unmotivated to meet. While the communities do need to increase their capacity and knowledge of protected area laws in order to make solid, informed decisions, the ultimate goal should be for them to be able to have more leverage in making decisions. This is something that is many years away, and could only come about after substantial education and training efforts. This is also something that BAS may need to address at the national policy level.

More Follow-up and Follow-through with Project Activities and Increased Communication

In order for the activities of the project to move forward efficiently, all of the stakeholders must follow-up and follow-through with their roles and responsibilities, as well as any decisions made. With this, there must be increased communication among and between the Local Advisory Committee, Regional Advisory Committee, and Technical Advisory Committee. Because the committees have been non-functional for the majority of the project thus far, it has been difficult to develop a solid line of communication to coordinate activities and get feedback. Not only must the villages be informed but also the members of the committees that represent the stakeholders' views.

Continue to Encourage Representation of the Village Council Members on the Local Advisory Committee

BAS should continue to build relations with the Village Council members and encourage their representation on the Local Advisory Committee. Since the Village Councils are represented in the Local Advisory Committee, it is imperative that the villages organize themselves at the local level and take advantage of their ability to practice their rights listed in the Village Council Act. Again, the Act does not clearly state how the council should coordinate with protected area managers, but their representation on the Local Advisory Committee could reinforce community views and opinions for how the area is managed and developed. Also, with the participation of the Village Council's Local Advisory Committee representative, they can develop projects/activities that would provide more of an incentive to meet on a regular basis and encourage them to take action.

Differentiate the Village Council Chairperson and BAS Head Warden

In order to reduce conflict of interests and tension in the villages, separate individuals should hold the Village Council Chairperson and BAS Head Warden positions. This will also reduce the workload for the individuals and enable them to focus more time and resources in their respective jobs. According to the BAS executive director, the decision to prohibit head wardens from serving on the Village Council had already been made as of July 2003 (Andrade 2003).

Re-initiate the Technical Advisory Committee

As important as the stakeholders are, the Technical Advisory Committee's involvement in the co-management project is imperative because of its role in determining whether the objectives of the project are supported or that the communities in the project area are getting the "maximum benefit" from the project. It is necessary to re-initiate the Technical Advisory Committee in order to complete the flow of information to the policy makers. In order for the Local Advisory Committee and Regional Advisory Committee to be effective, it depends on the Technical Advisory Committee's support and educated experiences to guide in the project process.

Improve Documentation

Due to gaps in documentations and lack of details, it has been difficult to understand progress in the project up to June 2003. In order for BAS and the Local Advisory Committee, Regional Advisory Committee, and Technical Advisory Committee to learn from their mistakes and for changes in staff to be informed, it is useful to have detailed documentation of the process in monthly and yearly reports which define the status of project activities, spending of project budget, challenges, successes, and lessons learned in the project. The existing reports did provide a lot of useful information yet there were inconsistencies in reporting that made it difficult to understand the process of project implementation.

7.3 Economic Demonstration Projects

Proposing the Projects

Flexibility is one of the most important components of establishing an effective co-management regime. While it may be too late for BAS to determine projects, other agencies interested in establishing a co-management regime or economic demonstration projects can benefit from the following recommendations.

One warden reported that the communities were not consulted in deciding the projects, but instead had to choose one that was in the original [BAS] proposal. This is important because it demonstrates that, at least to a certain degree, not all community members were involved in deciding the projects. Hence, care should be taken in proposing projects, avoiding reliance on the advice or desires of only a few individuals in the

community, or using only as a basis for a broader program. The focus should be process of how projects will develop with room within the grant proposal to allow for changes in scope and type of projects. That way, those residents left out of the initial planning process will still have the ability to participate later, and projects that were initially proposed can be adapted or altered in the face of changing circumstances.

Those individuals working directly with communities should have the authority and money to back up their promises to the community. As one warden stated, they cannot simply go into communities with development projects because they do not have the funds to back them up. In other words, any BAS staff member, working with the communities, needs strong support and backing of the administration.

Publicity: Make People Aware

Publicizing specific parts of the co-management agreement is a critical step in the co-management process. Given that many residents have heard of some economic development projects in their area but have not heard of co-management, there is a clear gap in ‘advertising’ that needs to be addressed. Anyone who is a beneficiary of a project should be told, both verbally and in writing, that it is part of a co-management project established by BAS. BAS should utilize every opportunity to convey to residents that it is trying to work with them to involve them in the management of the sanctuary. In other words, make sure that individuals understand *why* they are receiving assistance.

Establish Clear Policies

Given the various rumors and misconceptions concerning the economic demonstration projects, it is evident that the residents do not know the guidelines that determine who can benefit from these projects or how they can benefit. As such, it is imperative that BAS make it clear to all residents exactly what BAS can and cannot do for them. The methods for conveying this information can vary. For example, a pamphlet could be made available at the park offices concerning how people can become involved in these projects, and this pamphlet could include information on BAS and co-management.

A protocol should be established for community inquiries, and making the process transparent to allay concerns over favoritism or other perceptions of inequity. Establishing strict guidelines that allow any community member to become involved provided they demonstrate certain qualifications is also important.

Identify Key Stakeholders

Before considering how to implement economic demonstration projects, it is important to closely examine their purpose and function. If the purpose of the projects is to help those residents that have had their livelihoods negatively affected by the establishment of the sanctuary, then the projects should target those individuals. For example, if fishermen in Crooked Tree were adversely affected by new fishing regulations, then economic demonstration projects should be designed to help them before helping others in the

community that were not impacted to such a degree. In the case of the cashew coop, people have clearly been producing and marketing their cashews for generations. They were not negatively affected by the establishment of the sanctuary. Conversely, the fishermen and hunters, who had been negatively affected by the sanctuary, were not helped by the establishment of the cashew coop. It is evident, therefore, that care should be taken in determining exactly which stakeholders the projects are designed to help, and how to most effectively aid them.

Account for Political Issues

Political issues will continue to be inherent in all communities. BAS has taken commendable measures to stay out of community politics, and should continue to do so. One way that BAS could enhance its neutral stance is by following the recommendation above concerning policies. By establishing clear policies, and sticking to those policies, allegations of unfairness and favoritism will lose merit.

Keep the Projects Small

Keeping the projects small is perhaps the most important lesson to be taken away from this section of the study. In the first European Union Report, BAS itself stated that it will be several years before individual villages will have the capacity to work on community-wide projects. Most community members, when asked what sort of projects they would like to see more of, offer projects that are more suited to one or two families. Political tensions and other community issues will not stall projects that are carried out by single households or between friends, and if they do, those problems remain the problem of a few, rather than a whole village.

Once people see that these projects work, they may be willing to work together on larger projects. Moreover, if single communities have trouble pulling themselves together for a project, it will be a long time before many communities can come together and work on a project. Hence, something like the multi-community garbage disposal project is perhaps not a good starting point, while assisting a smaller venue like a women's group or pig rearing is an ideal place to begin.

It should be noted that any agency engaging in similar projects should examine its own institutional capacity and experience before embarking on such ventures. An environmental organization should ease into development projects slowly in order to gain experience. This would entail keeping the projects small and easy to manage.

Account for Cultural Considerations

For every project, concerns over cultural issues should be recognized and acted upon. An otherwise successful project can fail because small cultural details were overlooked. This is quite evident in the cashew coop concerning the use of a steamer rather than a roaster for the cashews, and in community concerns over the possible use of tilapia in fish farms.

7.4 Leadership Trainings

Reach a Broader Audience

Some residents expressed resentment because of the fact that not everyone was involved with the training. While recognizing the logistical and financial burden for the organization to involve everyone is not feasible or practical, this issue may be addressed by reaching a broader audience through establishing a diversity of venues to involve the community members. This includes continuing the training sessions for community members, as well as adult education programs. Furthermore, incorporating meetings with already planned community-wide events may also reach a broader audience. This could help BAS reach more community members and dispel misconceptions and miscommunications between the two parties.

Incorporate Conflict Management Mechanisms

As mentioned in the co-management section of the paper, conflict management is a critical element in sharing responsibility for natural resource management. There have been years of hostility between BAS and the communities stemming from the way in which the protected areas were designated. This hostility will require years to rebuild trust and collaborative relationships among these two key parties. In addition, there is no third party to appeal to in case of conflicts within the management partnership. Thus, one component that should be added to the co-management training component is a conflict resolution entity to act as a third party mediator. Conflicts are a natural part of co-management, and building a standard protocol and line of communication in order to deal with conflicts will prevent conflicts from reaching the point of hostility and may prevent future conflicts.

Develop Hands-On Component of Training

As highlighted in the results section, overall, the community members interviewed thought the training was beneficial. However, some expressed an interest in a practical application approach to incorporate the information learned into “real world” scenarios. They stated they would have found “hands-on” exercises a beneficial part of the training. For example, if the training was “hospitality for the tourism industry” they would have liked to work in a tourist hotel for a few days, to have the chance to interact with tourists and apply these new skills and knowledge. By learning not only the knowledge and skills, but learning how to apply this information, the community members will be able to participate more effectively in the environmental decision-making process for these two parks.

Follow-up

Whether the leadership training or other issues were discussed with the residents, many expressed the desire for more follow-up from BAS. This was also stated by the training

participants who called for more follow-up from BAS in the post evaluation of the training.

Provide Training for BAS Staff

As of August 2003, in the co-management project the training has focused on building the capacity of the communities. One aspect that has been lacking is also building the capacity of the staff, both in the Belize City office, as well as the head wardens, that are charged with the implementation of this project and directly working with the local communities. Providing training to staff could increase BAS's skills and capacity to work with the communities and bridge the communication gap between Belize City staff and wardens in the sanctuary. Examples of training that may be beneficial include: techniques in community participation, community development and meeting facilitation. Other training that may be beneficial should focus on working with a consultant on strategic planning session in order to set long-term concrete goals and objectives for the project.

7.5 Environmental Education

Continue Environmental Education in the Schools

BAS should work to accentuate what is currently showing positive results in the project. By continuing to provide and increasing their presence in the schools, BAS will be building the capacity of future community leaders.

Furthermore, in order to assist BAS in reaching a broader audience with Environmental Education in the schools, BAS could focus on training local teachers on Environmental Education lessons and issues pertaining to the protected area. This could help integrate key ecological concepts into regular lessons throughout the schools beyond what BAS staff members are able to accomplish on their own.

Instill an Appreciation for Nature

Environmental Education includes more than just the transfer of knowledge. It should also include activities for children that will make them aware about why it is important to conserve, give them ideas and skills about how they can conserve and encourage them to take these ideas home to their families. Most importantly, these programs can help to instill an appreciation for nature. This can be done focusing on the environment they live in and creating opportunities for them to become immersed in the environment around them.

Involve the Whole Community in Environmental Education

Just as they are making a difference with the children, BAS can work with the adults of the community to increase their knowledge about the protected area and give them the skills and attitudes they need to become invested in the nature around them. These

activities will result in the desire to play a role in environmental conservation. This can be accomplished by having a presence at and participating in community events such as the Cashew Festival at CTWS or *fahinas* at CBWS. Another way to involve adults of the community is through their children, by developing experiences in nature that adults can share with their children.

Given the interest in the BAS community meeting in Georgetown and the Jaguar presentation in Maya Mopan, it is clear that residents are eager to learn about the protected area. Moreover, residents mentioned after the meeting in Georgetown that they came to see the images projected by the computer. That said, it is clear that if BAS established a weekly or monthly presentation for the communities that focused on some aspect of the protected area, adults and children alike would undoubtedly be interested just to see a movie projected on the wall of the community center. This is the perfect opportunity for residents to watch educational programs and presentations about the protected area. National Geographic or some other organization may even be willing to donate films to BAS for this purpose. These events must be fun and educational.

Increase the Communities' Understanding of the Rules

Within the first year of the co-management project, BAS identified the lack of readiness in the communities to participate in the management of the protected area as one of the challenges of the successful implementation of the project (Catzim 2002b). A solid education program for the communities is crucial for the effective involvement in co-managing the protected area; however, misconceptions regarding the park management and the role of BAS persist. When providing community members with important conservation “rules” of the protected area, make sure to provide reasons why these rules have been implemented and show them how their actions can impact the protected area positively and negatively. Also, the education program should encourage communities to ask questions regarding the rules and regulations of the protected areas so that misconceptions can be addressed. Environmental Education programs are a necessary first step in increasing the understanding of community members and building their capacity to become more involved in the management of the protected areas.

Make Environmental Education the Priority

It cannot be stressed enough that Environmental Education is the most critical component for successful co-management, and should take precedence over all other components. Until community members are ready to protect the natural environment for its own sake, there will never be sustainable management of the protected areas. Rules and prohibitions, as well as incentives, only work as long as they are in place. However, if residents learn the intrinsic value of protecting the environment, it is something that will be passed down from one generation to the next.

7.6 Monitoring and Enforcement

Given funding constraints, it is evident that monitoring, in particular obtaining baseline data, is a difficult task. One possible source of effective monitoring is the use of university students to conduct these studies. BAS has already been making use of student groups from both Belize and other countries, and should continue and expand this program. Insofar as enforcement goes, it is beyond the scope of this master's project to offer recommendations, other than to say that increased personnel and funding would be ideal, if not necessarily possible.

7.7 BAS Strengthening Ties With Communities

Individuals

Much of BAS's co-management success is directly attributed to face to face contact with community members. As such, it is vitally important that BAS continue to have a frequent presence in all of the communities. While there is no 'ideal' number to quantify how often BAS should be present in the villages, it is important that the interactions are achieving a stronger relationship. It is also important for BAS to meet with as many different individuals as is possible. This could be with village leaders, but also with individuals in the schools, churches, local businesses, and simply 'around town.' While this may not be possible all the time given funding constraints, it is nonetheless imperative that BAS get to know other people in the villages. BAS also must clarify to the villages what the organization does and what BAS is capable/not capable of doing in the villages.

Community Meetings

When organizing meetings, BAS and villagers present at the meeting must clearly identify a particular purpose for each meeting. The agenda should outline what needs to be accomplished during the meeting and over time, as well as, address the concerns and interests of those present. BAS should seek feedback from the community members and actively involve them in the discussion. Each meeting should close with specific action items to be completed before the next meeting. These items should focus on how BAS and the communities can work together to come up with solutions and alternatives to the issue addressed. These actions must be small, incremental steps that lead toward goals. These goals should be designed by all stakeholders, with equal precedence given to those goals identified by BAS and those identified by the communities. Once this is done, both BAS and the communities will have had the opportunity to have a voice and influence how things are being accomplished. The meetings must also be more interactive, and cannot rely merely on presentations to the communities. Each success adds to a feeling of accomplishment and strengthens the resolve of all participants to continue with the project. Continued success will encourage additional community members to participate in the co-management project which ultimately strengthens the ties between BAS and the buffer zone communities. Above all, it is important to stress that everyone must have the opportunity to have a voice and influence how things are accomplished.

7.8 Other

Establish Management Zones

On a national level, establishing varying management zones and regulations can facilitate the involvement of local communities in the management of the area. This may also help in addressing those populations who have been negatively impacted by the establishment of the park by allowing them to conduct certain sustainable extraction activities.

However, in order to determine what is or is not permitted in these various zones, more research would need to be conducted on the threats of the area and a biological survey conducted.

An example of effective use of management zones is highlighted the Guatemala case study on the Sierra de las Minas Biosphere Reserve. One success of the case study is that different management zones helped to diffuse some of the initial skeptics who feared they would not be able to extract resources once the land was officially declared protected by law. The four zones created are core, sustainable use, buffer, and recovery zones. While there are stricter regulations within the core zone, the others do allow the communities to continue their traditional practices.

Conduct Program Evaluation

Conducting evaluations at regular intervals and assessing the status of the project is an integral part of the co-management process. This allows managers and community members to address issues that may develop and adjust the path of the future of the project. This also provides another avenue to involve community members. In a case study in Guatemala, community members were involved in annual evaluation of both themselves and the managing NGO of the project. Community members were also involved in setting goals for the following year and required to pledge commitments on their part; thus, the communities had a sense of ownership of the projects, not just endorsement of managing NGO's plan (Secaira 2001).

Plan for More than Three Years

One of the most important recommendations is to give the project more time to come to fruition. Three years is an unrealistic timeframe, and both implementing agencies and funders need to understand that real, tangible results for a project of this type should be expected in decades, not years. If possible, BAS should take steps to secure funds to continue the project in the fullest capacity possible.

Continue at Both Sites

The co-management project was slated for implementation at both CTWS and CBWS. While it may be the case that one site or the other has proven easier to work with given the institutional capacity of specific communities, it is imperative that BAS continue in its efforts to work at both sites. There are villagers at both sites that have invested

considerable time and effort into the various project activities and would like to see co-management work. As many residents in both areas stated, it will take time to effectively implement the program.

7.9 Future of Co-management and Next Steps

The Belize Audubon Society's development of CBWS and CTWS as centers for the co-management project is scheduled to end in September 2004. At the time of this evaluation, there was only one year left in the project and the future of the co-management project was unclear. Based on the results of this evaluation, the expected results listed in the project's logical framework were not being adequately met in order for the project to become a success within the last year. As identified, there are several barriers that are impeding the process, especially within a short time period that all stakeholders must be committed to resolve. Many of these issues are with the communities themselves; however, BAS can take steps to work around these barriers, as identified above.

To highlight the most important recommendations above, with regards to the Local Advisory Committee, BAS needs to clearly define its purpose and function, and to create incentives for Local Advisory Committee members to meet. As long as the Local Advisory Committees and Regional Advisory Committees are unclear of their roles and responsibilities, it is unrealistic to expect them to be meeting on their own and organizing activities for their villages. Economic Demonstration Projects need to be established that are more pertinent to the protection of natural resources, and help those stakeholders most affected by the protected area. Training and Environmental Education need to be made more widespread. Above all, Environmental Education is the most important component of co-management and is the only way to establish a sustainable, lasting motivation for residents to preserve and protect biodiversity. BAS can continue to strengthen its ties with the communities through continued presence and persistence in establishing those ties.

At the time of this evaluation, it was the hope of BAS Executive Director that within the next two to three years, the communities will be working together, holding Local Advisory Committee and Regional Advisory Committee meetings on their own, and developing their Economic Development Projects. Given the results of this evaluation, accomplishing these goals within the next two to three years is unrealistic. It will take several years not only to establish the critical relationships between BAS and the communities, but also to increase the communities' knowledge of resource management issues. The BAS Executive Director stated that BAS was committed to continuing with the project and that its next steps were to strengthen their capacity to evaluate and document the project processes. Even though these steps should have been incorporated at the beginning of the project, BAS is learning from its experiences and is aware that there is a need for improvement with monitoring and evaluating the project. In order to continue with the project, BAS has requested money from the European Union for a follow-up project but it is unknown whether or not this was granted. As stated above, in order to address the social issues confronted by conservation there must be continuation

of this project in order to successfully implement the different components; otherwise, co-management at CTWS and CBWS will not be established and conflicts between the communities and BAS will persist.

Appendices

Appendix A: Government Ministries

(Government of Belize 1999)

Attorney General and Minister of Housing and Urban Development
Ministry of Agriculture and Fisheries
Ministry of Budget Planning and Management
Ministry of Economic Development
Ministry of Education and Sports
Ministry of Finance
Ministry of Foreign Affairs
Ministry of Health
Ministry of Human Development, Women and Youth
Ministry of Investment and Trade
Ministry of National Security
Ministry of Natural Resources, Environment, Commerce and Industry
Ministry of Public Services and Labor
Ministry of Public Utilities, Transport and Communication
Ministry of Rural Development and Culture
Ministry of Sugar Industry, Local Government and Latin American Affairs
Ministry of Tourism
Ministry of Works

Appendix B: Protected Areas and Existing Co-Management Agreements in Belize
(Belize 2001; De Vries et. al. 2003; MNREI 2002)

Protected Area	Year PA Established	Acreage	Co-Management Agencies
Wildlife Sanctuaries			
Aqua Caliente Luha	1998	5,492	Forest Dept., Aquacaliente Management Team (AMT)
Cockscomb Basin Wildlife Sanctuary	1990	128,000	MNREI, Forest Dept., Belize Audubon Society
Corozal Bay	1998	180,500	Not in co-management- managed by Forest Dept. **
Crooked Tree Wildlife Sanctuary	1984	41,297	Forest Dept., Belize Audubon Society
Gales Point	1998	9,095	Not in co-management- managed by Forest Dept. **
Spanish Creek	2002	5,985	Forest Dept., Rancho Dolores Environment and Development Group
Swallow Caye	2002	8,970	Forest Dept., Friends of Swallow Caye (Association)
National Parks			
Billy Barquedier	2001	1,500	Forest Dept., Steadfast Tourism and Conservation Association (STACA)
Aguas Turbias	1994	8,760	Not in co-management- managed by Forest Dept.
Bacalar Chico	1996	12,810	Not in co-management- managed by Forest Dept.
Blue Hole	1986	665	Forest Dept., Belize Audubon Society
Chiquibul	1995	265,262	Not in co-management- managed by Forest Dept.
Five Blues Lake	1994	4,061	Forest Dept, Association of Friends of Five Blues Lake
Gra Gra Lagoon	2002	1,197	Not in co-management- managed by Forest Dept. ***
Guanacaste	1994	58	Forest Dept., Belize Audubon Society
Laughing Bird Caye	1996	10,119	Forest Dept., Friends of Nature
Mayflower Bocawina	2001	7,107	Friends of Mayflower
Monkey Bay	1994	1,799	Not in co-management- managed by Forest Dept.
Payne's Creek	1994	31,676	Forest Dept., Toledo Institute for Development and Environment (TIDE), Management Committee comprised of community representatives
Rio Blanco	1994	100	Rio Blanco Mayan Association
Sarstoon-Temash	1994	41,898	Forest Dept., Sarstoon-Temash Institute for Indigenous Management (SATIIM)
Noj Kaax Meem Eligio Panti	2001	12,936	Itzamna Society
Honey Camp	2000	7,772	Forest Dept, Association of Friends of Freshwater Creek
Natural Monument			
Blue Hole	1996	1,023	Forest Dept., Belize Audubon Society
Half Moon Caye	1982	9,771	Forest Dept., Belize Audubon Society
Victoria Peak	1998	4,847	Forest Dept., Belize Audubon Society
Nature Reserve			
Bladen	1990	99,670	Not in co-management- managed by Forest Dept. **
Burdon Creek	1992	5,255	Not in co-management- managed by Forest Dept.
Tapir Mountain Nature Reserve	1994	6,744	Forest Dept., Belize Audubon Society
Bird Caye (Crown Reserves)	1977	13	Belize Audubon Society and Green Reef
Forest Reserve			
Caye Caulker	1998	94	Fisheries and Forestry Dept., Forest and Marine Reserve Association of Caye Caulker
Chiquibul	1995	147,899	Not in co-management- managed by Forest Dept.
Columbia River	1997	102,940	Not in co-management- managed by Forest Dept
Commerce Bight	1997	5,451	Not in co-management- managed by Forest Dept
Deep River	1990	78,574	Not in co-management- managed by Forest Dept
Fresh Water Creek	1997	61,177	Forestry Dept., Association of Friends of Freshwater Creek
Grants Works	1989	7,906	Not in co-management- managed by Forest Dept

Machaca Creek	1998	3,756	Not in co-management- managed by Forest Dept
Manatee	1959	103,878	Not in co-management- managed by Forest Dept
Mango Creek	1989	35,546	Not in co-management- managed by Forest Dept
Maya Mountain	1979	128,111	Not in co-management- managed by Forest Dept
Monkey Caye	1996	1,460	Not in co-management- managed by Forest Dept
Mountain Pine Ridge	1977	126,825*	Not in co-management- managed by Forest Dept
Sibun	1977	106,392	Not in co-management- managed by Forest Dept
Silk Grass	1997	4,806*	Not in co-management- managed by Forest Dept
Davis Falls in Sittee River Forest Reserve	1977	94,156*	Forest Dept., Friends of the Valley
Swim Pools in Sittee River Forest Reserve	1977	94,156*	Forest Dept., Friends of the Valley
Swasey-Bladen	1989	14,779	Not in co-management- managed by Forest Dept
Vaca	1991	52,352	Not in co-management- managed by Forest Dept
Marine Reserve			
Bacalar Chico	1996	15,575	Not in co-management- managed by Fisheries Dept.****
Hol Chan	1987	4,048	Not in co-management- managed by Fisheries Dept.
Caye Caulker	1998	9,669	Fisheries and Forest Dept., Forest and Marine Reserve Association of Caye Caulker
Glover's Reef	1996	81,237	Not in co-management- managed by Fisheries Dept
South Water Caye	1996	118,121	Not in co-management- managed by Fisheries Dept
Gladden Spit/Silk Cayes	2000	25,600	Fisheries Dept., Friends of Nature
Port Honduras Marine Reserve (PHMR)	2001	100,378	Fisheries Dept., Toledo Institute for Development and Environment (TIDE)
Sapodilla Cayes Marine Reserve (SCMR)	1996	33,401	Toledo Association for Sustainable Tourism and Empowerment (TASTE)
Grouper Spawning Areas	2002	13,462	Not in co-management- managed by Fisheries Dept
Archaeological Sites and Reserves			
Cerro Maya	1976	43	Not in co-man.- managed by Archaeology Dept.
Santa Rita	1995	4	Not in co-man.- managed by Archaeology Dept.
Lamanai	1985	959	Not in co-man.- managed by Archaeology Dept.
Altun Ha	1995	44	Not in co-man.- managed by Archaeology Dept.
Cahal Pech	1995	22	Not in co-man.- managed by Archaeology Dept.
Xunantunich	1995	52	Not in co-man.- managed by Archaeology Dept.
El Pilar	1998	1,997	Not in co-man.- managed by Archaeology Dept.
Caracol	1995	25,000	Not in co-man.- managed by Archaeology Dept.
Nim Li Punit	1995	121	Not in co-man.- managed by Archaeology Dept.
Lubaantun	1995	40	Not in co-man.- managed by Archaeology Dept.
Private Reserves			
Monkey Bay Wildlife Sanctuary	No data	1,070	Monkey Bay Wildlife Sanctuary
Rio Bravo Conservation and Management Area	1988	245,822	Programme for Belize
Community Baboon Sanctuary	1985	12,980	Community Baboon Sanctuary
Shipstern Nature Reserve	No data	18,841	International Tropical Conservation Foundation
Golden Stream Corridor Preserve	1998	9,554	Ya'axche' Conservation Trust
Boden Creek Ecological Reserve	No data	7,600	Belize Lodge and Excursions

* Acreage under review as of April 2003.

** Currently discussing co-management agreements.

*** Forest Dept. negotiating co-management with Friends of Gra Gra (as of April 2003)

**** Forest Dept. negotiating co-management with Green Reef (as of April 200)

Appendix C: Belize Audubon Society's Co-Management Project at CBWS and CTWS Logical Framework

(Catzim 2002b)

Logical Framework as stated in the Technical Annex:

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
Overall Objectives	Ensure biological diversity and ecological integrity of the CBWS and CTWS wetlands are protected, sustained and restored.	CBWS and CTWS wetlands maintain biological populations and ecological systems Determine degraded areas of Crooked Tree that are restored.	Periodic biological assessments Other periodic ecological assessments	
Project Purpose	Involve relevant stakeholders in ecosystems' management to promote biodiversity and ecological integrity through sustainable development activities.	Increase in collaboration between community members and BAS on projects, economic enterprises and training.	Internal evaluation	GOB adopts the National Biodiversity Strategy.
Results	<ol style="list-style-type: none"> 1. Establish an efficient participatory management structure for CBWS and CTWS. 2. Community members establish ecologically viable economic activities (in-situ) 3. Community members establish ecologically viable economic activities (ex-situ) 4. Community members are qualified resource managers through training 5. Mitigate threats through monitoring and enforcement pilot projects 6. BAS' capacity is strengthened 7. Stakeholders awareness of ecosystems' value is increased 	<ol style="list-style-type: none"> 1. Number of relevant stakeholders involved in managing various aspects of the protected areas 2. A significant number of enterprises successfully established and number of individuals involved. 3. Number of businesses successfully established 4. Increase in people applying skills to practices 5. Number of small pilot projects established to mitigate threats. Number of encroachment activities converted to constructive ones. 	<ol style="list-style-type: none"> 1. Internal evaluation 2. Independent evaluation Revenue generation 3. Evaluation surveys Revenue generation 4. Evaluation survey Certification 5. Internal evaluation 6. Internal reports 7. Internal reports 	<p>Both sites are not dereserved, therefore GOB & BAS maintain working relationship.</p> <p>Viable markets increase for alternative products.</p> <p>Community perceptions of protected areas and resource management linked to BAS.</p>

Activities/Inputs	1.Long-term co-management plans 2.Demonstration projects 3.Resource management training 4.Monitoring & enforcement 5.Warden training 6.Education 7.Personnel 8.Project monitoring 9. Administration 10. Contingency	See annex II	1. Internal reports 2. Quarterly financial reports 3.Mid-term and annual project reports	Viable markets exists for alternative products. Wildlife-related demonstration projects are not affected by diseases, other biological factors. Legislative framework conducive to wildlife-related demonstration projects.
				Preconditions All stakeholders interested in pursuing project objective.

Results measured:

Activities	Implementation	Person/s Responsible	Timeframe	Indicators	Expenditures
Long-term co-management plan	The co-management model has been developed and is being tested.	Project Coordinator	Year 1 & 2 of project implementation		
Demonstration projects	Three demonstration projects have been established	Project Coordinator	Year 1 & 2 of project implementation		
Resource Mgmt	This has not occurred	---	---		
Monitoring & enforcement	Both programs are being developed and will be implemented within the next reporting period	Project Coordinator & Protected Areas Manager	Year 2 of project implementation		
Warden training	The staff have received training in the areas of monitoring, education and advocacy	Project Coordinator, Protected Areas Manager, Education Coordinator & Advocacy Coordinator	Year 1 & 2 of project implementation		
Education	This program has been established and is being implemented. Brochures, educational kits and interpretive displays have been developed.	Education Coordinator	Year 1 & 2 of project implementation		

Appendix D: Local Advisory Committee Terms of Reference

(Salas and Andrade 2001)

Local Advisory Committee *Terms of Reference*

Appointment: The Local Advisory Committee members shall be appointed by the Community and the Belize Audubon Society.

Members:

- a) Community Liaison, BAS
- b) Forest Officer, Forest Dept.
- c) Village Council Representative
- d) Representative Fishing Community
- e) Representative Farming Community
- f) Representative of Churches
- g) Representative Tourism Industry
- h) Representative Women's Group
- i) Representative Teachers
- j) Other stakeholder not exceeding 10 members

The role of the Committee is to:

- 1) Recommend procedures for the proper management and conservation of the protected area and serve as a platform to address issues as they arise
- 2) Recommend legislation and regulations relevant to the management of the protected area
- 3) Have input into the development of the management plan for the protected area
- 4) Assist in the development of management and operational plans for the protected area including a multi-use zoning scheme

Operational Procedures:

- Fifty percent of the membership, plus one, shall constitute the quorum. (6-7 members)
- The Committee shall choose one of its members as Chairperson. When the Chairperson is unable to preside at any meeting, the members present shall elect a member to preside at that meeting.
- The Community Liaison will act as secretary to the Committee and shall maintain proper records of its proceedings as minutes of meetings.
- Each member shall appoint an alternate representative to the Committee. This shall be only one person to ensure continuity.
- The decision of the majority present and voting at the meeting shall be the decision of the Committee
- Meetings shall be held at least once per quarter.

Appendix E: Regional Advisory Committee Terms of Reference
(Catzim 2002b)

Regional Advisory Committee
Terms of Reference

Appointment: The Regional Advisory Committee members shall be appointed by the Local Advisory Committee

Members:

- a) Community Liaison, BAS
- b) Representative LAC
- c) Representative LAC
- d) Representative LAC
- e) Representative LAC
- f) Representative LAC
- g) Representative LAC
- h) Representative LAC
- i) Representative LAC
- j) Other stakeholder not exceeding 10 members

The role of the Committee is to:

- 1) Recommend procedures for the proper management and conservation of the protected area and serve as a platform to address issues as they arise
- 2) To serve as the liaison for the LACs
- 3) To address regional issues that are of concern to the buffer communities, as it relates to the management of the protected area
- 4) Recommend legislation and regulations relevant to the management of the protected area
- 5) Have input into the development of the management plan for the protected area
- 6) Assist in the development of management and operational plans for the protected area including a multi-use zoning scheme

Operational Procedures:

- Fifty percent of the membership, plus one, shall constitute the quorum. (6-7 members)
- The Committee shall choose one of its members as Chairperson. When the Chairperson is unable to preside at any meeting, the members present shall elect a member to preside at that meeting.
- The Community Liaison will act as secretary to the Committee and shall maintain proper records of its proceedings as minutes of meetings.
- Each member shall appoint an alternate representative to the Committee. This shall be only one person to ensure continuity.
- The decision of the majority present and voting at the meeting shall be the decision of the Committee
- Each member shall meet with their respective LAC to report on issues discussed and obtain feedback before the next RAC meeting
- Meetings shall be held at least once per quarter.

Appendix F: Interview Protocols

Local Community Members

Interviewees:

Local Advisory Committee (LAC)
 Regional Advisory Committee (RAC)
 Technical Advisory Committee (TAC)
 Village Council
 Steering Committee
 Other Community Members

Methodology: a combination of open-ended, qualitative questions; quantitative scale questions; community meetings

Questions

General Questions

1. Length of time in community
2. Job/Occupation

Project Implementation

Co-management structure

1. What type of interactions have you had with BAS, if any?
2. Are you familiar with the how the CTWS is managed?
3. Have you heard about the co-management project with BAS? If so, what can you tell me about it?
4. How are the Village Council, Local Advisory Committee (LAC), and Regional Advisory Committee (RAC) involved in co-management? {If part of one component}
5. Does the LAC or RAC have any real power over park management?
6. How are meetings organized in your village? Are there public meetings very often? Is it difficult to organize community meetings in your village?
7. How does the Village Council work? {For Village Council Members}

BAS and the community

8. What kind of information does BAS give to communities? Do you find it a useful way to give information?
9. Have you noticed changes in park management in the past two years?
10. Have your attitudes toward BAS changed at all after working with them?
11. To what extent do you monitor and/or enforce the implementation of the co-management project?
12. Do you feel that other communities currently benefit more from (co-management of) the protected area than your community?

Community Involvement Mechanisms

Combined:

1. Have you been involved in any leadership trainings, environmental education or economic development projects (cashew co-op)?

Leadership Training (LT)

1. What were the outcomes of the trainings?
2. What did you learn? How much do you feel you can use the information that you learned?
3. How much do you feel comfortable teaching other community members what you learned?

Appendix F: Interview Protocols

4. Was it applicable to you?
5. What would you change to make it more effective? What would you not change?
6. Why did you take part in trainings?
7. To what extent did it meet your expectations?
8. How did you benefit?

Environmental Education (EE)

1. Do you know of any environmental education programs in the schools?
2. Have you participated in or watched any presentations given by BAS on EE? Was the information useful?
3. Have you seen any fliers or brochures about the sanctuary?
4. Do you wish they would do more? Why?

Economic Demonstration Projects (EDP)

5. What sort of economic development projects are currently underway, for example cashew coop, fish farming, beekeeping, and tourism?
6. Who is involved with the Economic Demonstration Projects?
7. In your opinion, how is it working? Do you have any suggestions for improvement?
8. Why or why aren't people not more involved in participating in EDP?
9. Are you interested in becoming involved and starting your own business? Why or why not?
10. What resources has BAS provided to help these projects?
11. Does the government provide any assistance to help these projects?

Barriers to Co-management

1. What do you feel are the largest barriers to co-management?

Y=Yes

L=Maybe or A Little

N=No

DK=Don't Know or No Opinion

For each question, ask "Why?"

Barriers to Co-management Survey Questions: Do you feel the following are barriers to (are problems for) joint management of the PA between the community and BAS?

- | | | | | |
|---|---|---|---|----|
| 1. Lack of Leadership..... | Y | L | N | DK |
| 2. All the people are not involved..... | Y | L | N | DK |
| 3. Many people leave the community..... | Y | L | N | DK |
| 4. Misconceptions about PA management..... | Y | L | N | DK |
| 5. Lack of Stewardship (concern for environment)..... | Y | L | N | DK |
| 6. Organization of co-management (LAC to RAC to BAS)..... | Y | L | N | DK |

Community Attitudes Survey Questions: Do you agree with the following statements?

- | | | | | |
|---|---|---|---|----|
| 1. Wildlife should be protected..... | Y | L | N | DK |
| 2. It is important to protect the land around CTWS..... | Y | L | N | DK |
| 3. There are benefits of living next to the protected area..... | Y | L | N | DK |
| 4. The protected area has created problems in my life..... | Y | L | N | DK |
| 5. The needs of my community are considered in park management..... | Y | L | N | DK |
| 6. I can influence how the park is managed..... | Y | L | N | DK |
| 7. BAS is open to new ideas on how to manage the park..... | Y | L | N | DK |
| 8. I am concerned about how the protected area is managed..... | Y | L | N | DK |
| 9. I am interested in participating in the new dev project..... | Y | L | N | DK |
| 10. I am interested in learning more about the protected area..... | Y | L | N | DK |
| 11. I am interested in participating in leadership trainings..... | Y | L | N | DK |

Appendix F: Interview Protocols

Other comments on:

1. How BAS manages the PA?
2. Things you would like to see BAS do differently?
3. What does co-management mean to you?
4. What do you feel are the successes (things that are working well) of co-management?

Future of the community/co-management?

1. How do you see the wildlife sanctuary affecting the community 10 years from now?
2. How could the links between the two be strengthened in the future?
3. Other things?
4. Could you please refer us to several other people that you know of who would be willing to take part in this survey (List names on a separate sheet of paper)?

Belize Audubon Society (BAS) officials

Interviewees:

All BAS officials

All BAS Employees

Questions

General Questions

1. Name
2. Previous experience with other environmental groups or NGO's
3. Level of involvement with co-management
4. Amount of time spent at the actual sites.
5. Amount of time spent talking to local community members.

Project Implementation

Stakeholders

1. Who is involved in PA management?
2. Who is involved in co-management?
3. To what extent do you think that all stakeholders involved?
4. How is community input incorporated into management plans? How effective does their input tend to be?
5. Was their input incorporated into the EU grant while writing the co-management plan?

Government Capacity

6. Are there national policies mandating co-management? How effective are these policies? How enforceable are these policies?

Community Capacity

7. To what extent is it difficult to organize community meetings in the villages?
8. How does BAS plan to empower the communities to make co-management sustainable?

Belize Audubon Society's (BAS) Capacity

9. What the roles and responsibilities of BAS regarding co-management?
10. What are BAS's strengths and weaknesses in dealing with co-management?
11. What does BAS have to gain or lose from the co-management project?
12. Are/were there alternative plans for the co-management project if the initial methods did not work?
13. What steps will follow the co-management project? What are alternative measures?

Community Involvement Mechanisms

Leadership Training

12. Were you involved in any of the BAS trainings? What are your role/responsibilities?
13. What were they about? What were the outcomes of those trainings? What did BAS learn about the local communities?
14. How often are they conducted?
15. How is BAS recruiting community members to take part in training?
16. How were trainings, education and leadership workshops implemented? What materials were used? Who conducted the trainings?
17. Who participated?
18. Are partner organizations involved in the trainings? (i.e. U. of Belize, exchange program with Old Woman Creek providing monitoring training to BAS and comm.)
19. How are locals, wardens, educators, etc trained?

Appendix F: Interview Protocols

Environmental Education (EE)

20. In many documents, EE is referred to as “sustainability education.” What do you mean by this term?
21. What’s being done in schools for EE?
22. How is BAS reaching adults in the communities?
23. What kinds of materials and resources are used for each?
24. How is the Local Advisory Committee (LAC) or the Village Council involved in educating local people on environmental issues?
25. How often are EE lessons or workshops held?
26. What is working or not working regarding the EE program?

Economic Demonstration Projects (EDP)

27. What sort of economic development projects are currently underway?
28. Who is involved with the Economic Demonstration Projects? How are they chosen?
29. What sorts of training are conducted regarding the EDP?
30. Is the Village Council, LAC or Regional Advisory Committee (RAC) involved in the trainings too?
31. What are the outcomes of those trainings?
32. To what extent do you feel that local people are interested in becoming local entrepreneurs?
33. What resources does BAS provide to help these projects get moving?
34. Does the government provide any assistance to help these projects?
35. Are there other economic generation ideas (e.g. loans to start businesses, or other)?

Attitudes*BAS’s Attitudes*

5. How do you feel about the co-management project?
6. How do you define co-management?
7. Is it better than the previous management plan/have you seen improvements over the previous management plans?
8. How have your attitudes towards community members changed after working with them for a while?

Community Efficacy

9. What avenue can community members take to effect change in the management of the wildlife sanctuary?

Tourism

10. How does BAS promote tourism in the area?
11. What are the revenues generated from entrance fees to the sanctuary?

Barriers to Co-management

2. In your opinion, what are the different factors affecting co-management?
3. What could be done to the current model of co-management to make it more effective?
4. What do you feel are the largest barriers to co-management?
5. For the following, answer with the scale below:

Y=Yes

L=Maybe or A Little

N=No

DK=Don't Know or No Opinion

Barriers to Co-management Survey Questions: How much do you feel the following are barriers to (are problems for) joint management of the PA between the community and BAS?

6. Lack of enough Leadership within all communities..... Y L N DK
7. All the people are not involved..... Y L N DK
8. Many people leave the community..... Y L N DK
9. Misconceptions about PA management..... Y L N DK
10. Lack of Stewardship (concern for environment)..... Y L N DK
11. Organization of co-management (LAC to RAC to BAS)..... Y L N DK
12. Is enforcement of the park regulations difficult?
13. In general, where are the wardens from; that is, are they from the community itself or from somewhere else?

Successes of Co-Management

1. How does BAS define success for co-management?
2. What do you feel are the successes (things that are working well) of co-management?
3. What has been accomplished in the last two years regarding co-management?
4. In the next two to three years, what do you hope to accomplish (with co-management)?
5. How do you see the BAS interacting with the communities in the next ten years?

Compare with other co-management

Interaction with other NGO's

1. Does BAS hold regular conferences or meetings with other NGO's in Belize? If so, with whom?
2. Do you know what other organizations are working on co-management?
3. How did BAS arrive at this particular model of co-management?

School children

Interviewees:

Any child aged 12 or over (**questions will be asked only if minor's assent and parental consent is given**)

Methodology: a combination of open-ended, qualitative questions; quantitative scale questions;

Questions

1. How old are you?
2. Boy/girl
3. What grade are you in?
4. How many kids are at your school?
5. How many kids are in your class?
6. What's your favorite class?

7. Do they teach you anything about the environment at your school?
8. If so, are environmental education classes fun?
9. Do you feel like you've learned a lot from the classes?
10. What sorts of things have you learned?
11. Can you name any endangered animals that live near you?
12. Do they teach you anything about the environment outside of school?

13. On a scale of 1 to 5, how much do you like to spend your time outdoors?
14. On a scale of 1 to 5, how much do you think that it is important to protect parts of your country, like the wildlife sanctuary that you live near?
15. On a scale of 1 to 5, how important is it to protect the plants and animals in the wildlife sanctuary?
16. On a scale of 1 to 5, how much do you think that you can help protect the wild animals in the wildlife sanctuary?

17. What sorts of things can you do to help protect the wildlife sanctuary?

Other Non-Governmental Organizations (NGO) that manage protected areas (PA)

Interviewees:

Toledo Institute for Development and Environment (TIDE)
Jessie Young Baboon Community Wildlife Sanctuary

Methodology: a combination of open-ended, qualitative questions; quantitative scale questions.

Questions

6. Name of NGO
7. Length of time in position
8. Job Description
9. Length of time with NGO
10. Previous experience

Project Implementation

14. What is the mission of your organization?
15. How many of your staff has contact with communities at the protected areas?
16. Who are the different stakeholders regarding the protected area?
17. How do you interact/work with them?
18. What are the mechanisms in which communities have input regarding the management of the area?
How does this affect implementing management plans?
19. Do you feel the current management hierarchy is effective? To what extent?
20. Who enforces the regulations of the protected area?
21. How do you define success in protecting natural ecosystems?

Community Involvement Mechanisms

Trainings

1. Has your organization conducted any leadership workshops or other training sessions to train the local communities in park management? If so, how were these workshops organized? Who conducted them? What materials were used?
2. To what extent would you consider these workshops effective?

Environmental Education (EE)

3. What sort of environmental activities have been conducted to educate the local people on the environmental issues surrounding park management?
4. Are lessons conducted in local schools? If so, how often?
5. To what extent would you say these methods of EE have been effective?

Economic Demonstration Projects (EDP)

6. Are there any EDP projects underway at your protected area? If so, who is involved with the Economic Demonstration Projects, i.e. tourism?
7. Why are some people involved and not others?
8. Who benefits?
9. What resources does the NGO provide to help these projects get started?

Community Attitudes towards park management

12. What are the challenges you've encountered with local villagers during the establishment of the park?
13. What are the regulations governing the park? How are the rules enforced?
14. What was the area like before the protected area (PA) was established?

Appendix F: Interview Protocols

15. Have people been forced to give up previous ways of life, including hunting, fishing or cutting timber?
16. How have community members reacted to these lifestyle changes?
17. Were the community changes in behavior voluntary? Why?

Compare with other co-management

4. Are you familiar with the co-management practices at Crooked Tree or Cockscomb Basin?
5. Does your organization hold regular conferences or meetings with other NGOs in Belize or elsewhere?

Barriers to Co-management (for those organizations working with co-management)

14. What do you feel are the largest barriers to co-management (working with the local communities)?
15. To what extent do you feel that co-management is working?
16. What would help co-management to be more effective?
17. What could GOB, NGOs, and local communities do to make co-management more successful?

Successes of Co-Management

1. What is your measure of success for co-management?
2. What do you feel are the most helpful elements in co-management?
3. What are the benefits of co-management for all stakeholders?

Appendix G: Demographics of Interviewees

Demographics

The following table lists the numbers of people reporting from each community, as well as their gender and affiliation/job. We also conducted a community meeting in San Roman, with about 30 participants. This is not listed in the table. *Note: In two cases, Crooked Tree and Biscayne, we interviewed two people together. We counted this as one interview. However, when listing the gender amounts, we separated the people. This explains the discrepancies in Crooked Tree Village and Biscayne.*

Village	Men	Women	Group	Total Interviews
CT	11	9		19
Gardenia	5	1		6
Biscayne		4		3
Lemonal	2	3		5
Maypen	1	4		5
CTWS Total	19	21		38
Georgetown	7	9		16
Maya Center	6	1	1 (Women's Group)	8
Maya Mopan	8	1		9
Red Bank	5			5
San Roman	2			2
CBWS Total	28	11	1	40
Total	47	32	1	78

Appendix H: Examples of Collaborative Management Process Indicators
(Borrini-Feyerabend 1995)

Examples of Collaborative Management Process Indicators

- *awareness of stakeholders (of CM issues, events, schedules, rights, responsibilities, etc.);*
- *existence of mechanisms for information sharing and fora for communicating and negotiating agreements;*
- *availability of facilitators to assist in meetings, mediate conflicts, link with different levels of actors in society;*
- *active involvement of stakeholders in developing a management agreement (participation in meetings, expression and defense of 'positions', etc.);*
- *existence of a management agreement among stakeholders (oral or written, formal or informal);*
- *specific definition of stakeholders' functions, rights and responsibilities in the management agreement;*
- *stakeholders compliance with the agreed rights and responsibilities;*
- *stakeholders stated satisfaction with the management agreement;*
- *existence of bodies to appeal to in case of conflicts within the management partnership;*
- *engagement of stakeholders in promoting policy and legal change in support of CM agreements;*
- *with time, extension of the agreement in geographic as well as complexity terms.*

Examples of Collaborative Management Feasibility Questions

Legal feasibility

- *Are there specific laws and regulations that allow or forbid involving various social actors in the management of the PA, or is there a legislative vacuum?*
- *Who can issue permits for exploitation of the PA resources?*
- *Who can decide about revenue sharing?*
- *Who is legally controlling the access to the PA? the agency in charge? A local administrative body?*
- *Is there a trusted judiciary system in place to assure that eventual contractual agreements are respected?*

Political feasibility

- *Is there a political willingness to share the benefits and responsibilities of the management of PAs in the country?*
- *What are the key interests at stake? Is there any interest which is politically dominant and capable of crushing the others?*

- *Are there major commercial, industrial, political or urban interests opposed to the PA who could become part of a management partnership with the ultimate aim of destroying it?*
- *Are corruption and violence affecting PA management?*

Institutional feasibility

- *Are stakeholders sufficiently organized to put forward their interests and contribute their capacities in PA management?*
- *Are governmental agencies capable of interacting effectively with non-governmental stakeholders?*
- *Are there traditional or other authorities capable of eliciting agreements and enforcing rules?*
- *Are there fora for communication and discussion of relevant initiatives?*
- *Are there institutional conflicts (e.g., unclear division of responsibilities between regional and district authorities) affecting the management of the PA?*

Economic feasibility

- *Is there a budget source to sustain the CM process (e.g., specific studies, meetings, communication, facilitation, etc.)?*
- *Are there ways by which local actors can meet their economic needs compatibly with the conservation of the PA at stake?*
- *If needed, is capital available to make the necessary investments?*
- *If needed, are the local people confident enough to invest in entrepreneurial activities?*

Socio-cultural feasibility

- *Are stakeholders informed and knowledgeable about the protected area? About existing threats to it? About ways of conserving it?*
- *Do they value the protected area?*
- *Do stakeholders possess traditional institutions and systems of resource management?*
- *Are stakeholders in conflict regarding the PA resources?*
- *Is there adequate communication between the agency in charge of the PA and the stakeholders? Do they trust one another?*

Appendix I: Survey-Barriers Data Results

Question:	1. YES	1. NO	1. MAYBE	1. DK	2. YES	2. NO	2. MAYBE	2. DK	3. YES	3. NO	3. MAYBE	3. DK
CT	5	1	2	0	6	0	2	0	0	5	2	0
Gardenia	1	1	0	0	2	0	0	0	0	2	0	0
Biscayne	1	1	0	0	2	0	0	0	0	2	0	0
Lemonal	2	1	1	0	3	0	1	0	4	0	0	0
Maypen	3	0	1	0	1	0	3	0	2	2	0	0
North Total	12	4	4	0	14	0	6	0	6	11	2	0
GT	2	2	3	0	4	1	2	0	4	3	0	0
Maya Cen.	2	2	1	0	4	1	0	0	0	5	0	0
Maya Mop	4	2	0	0	2	3	1	0	1	5	0	0
Red Bank	2	1	0	1	2	0	0	0	0	1	2	0
San Roman	0	1	0	0	0	0	1	0	0	1	0	0
South Total	10	8	4	1	12	5	4	0	5	15	2	0
Total	22	12	8	1	26	5	10	0	11	26	4	0

Question #1

There is a lack of local leadership.

Question #2

All of the people are not involved.

Question #3

Many people leave the community.

Question:	4. YES	4. NO	4. MAYBE	4. DK	5. YES	5. NO	5. MAYBE	5. DK	6. YES	6. NO	6. MAYBE
CT	4	0	3	0	1	4	2	0	1	3	1
Gardenia	2	0	0	0	0	1	1	0	0	1	1
Biscayne	1	1	0	0	0	0	2	0	0	1	0
Lemonal	4	0	0	0	3	0	1	0	3	0	1
Maypen	1	2	1	0	1	2	0	0	2	1	0
North Total	12	3	4	0	5	7	6	0	6	6	3
GT	2	3	0	0	1	5	0	0	0	3	2
Maya Cen.	4	1	0	0	0	3	2	0	0	3	2
Maya Mop	5	0	1	0	3	2	1	0	0	5	1
Red Bank	2	0	2	0	0	2	2	0	1	1	0
San Roman	0	0	1	0	0	0	0	1	0	0	1
South Total	13	4	4	0	4	12	5	1	1	12	6
Total	25	7	8	0	9	19	11	1	7	18	9

Question #4

People have misconceptions about PA management.

Question #5

There is a lack of stewardship.

Question #6

The organization of co-management.

Appendix I: Survey-Barriers Data Results

The Survey-Barriers

Residents were asked to state whether or not the following were barriers to co-management or BAS working with their community.

Lack of community leadership

Of 43 people responding, 23 said Yes, 15 said No, and four said Somewhat. One person answered with a Don't Know. At CTWS, 20 people replied, with 13 answering Yes, five answering No and two answering Somewhat. At CBWS, 23 people responded. Of these, 10 said Yes and 10 said No, two said Somewhat and one said Don't Know.

All community members are not involved

Of the 41 people replying to this, 28 said Yes, nine said No, and two said Don't Know. At CTWS, of the 20 people who replied, 17 said Yes, two said No, and one said Don't Know. At CBWS, 11 out of 21 people answered Yes, seven answered No, and one answered Don't Know.

Many community members leave the community

Of the 41 people who replied to this, 12 said Yes, 27 said No, and four said Somewhat. At CTWS, seven said Yes, 11 said No, and one said Somewhat, for a total of 19. At CBWS, five out of 22 respondents said Yes, 16 said No, and three said Somewhat.

Community members have misconceptions about protected area management

Forty people responded to this, with 19 of those respondents from CTWS and 21 were from CBWS. There were 27 Yes responses total, with 14 and 13 of those coming from CTWS and CBWS, respectively. A total of 10 No's were given, with four of those coming from CTWS and six from CBWS. There were 3 Somewhat responses, with 1 from CTWS and 2 from CBWS.

Community members have a lack of environmental stewardship (concern for the environment)

Thirty-nine people replied to this, with eight stating Yes, 19 stating No, and eight stating Somewhat. At CTWS, five out of 17 answered Yes, seven out of 17 answered No, and five answered Somewhat. At CBWS, two out of 22 answered Yes, 16 answered No, and four answered Somewhat.

Organization of co-management (LAC to RAC to BAS)

Thirty-seven people total replied to this, with 15 of those At CTWS and 22 At CBWS. There were a total of five Yes responses, with four of those At CTWS and one At CBWS. A total of 25 people responded with No, with 11 At CTWS and 14 At CBWS. Four people stated somewhat, with all of those respondents coming from CBWS, while three people replied with Don't Know. These were also all from CBWS.

Other Barriers

Following is a list of barriers that the residents set forth on their own.

- Laws are being made without the input of the community.
- Trust – people need to learn how to trust BAS.
- Communication (Two residents said this)
- BAS's biggest barrier is lack of support from the community and from the GOB.
- Human resources.
- Finance; BAS does not have enough money
- Lack of sense of cooperation among villagers (Two residents said this)
- Difficult to manage the difference between people and nature.
- Lack of BAS presence
- Lack understanding of the environment.

Appendix I: Survey-Barriers Data Results

Appendix J: Co-Management Structure Data Results

Familiarity with the Local Advisory Committee

The following table show how many people stated that they were familiar with the Local Advisory Committee. Of the 57 total respondents, 46 stated that they were familiar with the LAC while 11 said that they were not. Twenty-one people did not comment. At CTWS, 21 people stated that they were familiar with the LAC while seven stated that they were not. At CBWS, 25 people stated that they were familiar with the LAC, and four people stated that they were not.

Familiar with LAC?	Yes	No Comment	No	Total Responses
CT	8	4	7	15
Gardenia	5	1	--	5
Biscayne	2	1	--	2
Lemonal	3	2	--	3
Maypen	3	2	--	3
North Total	21 (75%)	10	7 (25%)	28
GT	11	4	1	12
MC	5	2	1	6
MM	4	4	1	5
Red Bank	4	---	1	5
San Roman	1	1	--	1
South Total	25 (86%)	11	4 (14%)	29
Total	46 (81%)	21	11 (19%)	57

Frequency of Meetings

Of the people stating yes to the question above, a total of 35 of them, 13 from CTWS and 22 from CBWS, made additional comments about how often the LAC meets in their village. In addition, there are a few random comments about the Regional Advisory Committee.

- Never (Total 19; CTWS 7*, CBWS 12)
- Sometimes (Total 6; CTWS 2, CBWS 4)
- Regularly (Total 2; 1 CTWS*, 1 CBWS**).
- No more knowledge of it (Total 2; 1 CTWS, 1 CBWS).
- There is no RAC (Total 3; 1 CTWS, 2 CBWS).
- There is a RAC (Total 2, both from CBWS) **
- The LAC is working within existing Village Council Structure (1 from CTWS).

* In Biscayne, one villager said the LAC meets regularly while another said it never meetings.

** In Georgetown, two people referred to a BAS community meeting as a LAC meeting.

*** In Maya Center and Maya Mopan, one person from each town referred to the Garbage Dump Project as the RAC.

Problems

Following are the most salient comments made by villagers about the LAC. Fifteen people from CTWS commented and eleven people from CBWS commented, for a total of 26.

- BAS doesn't do any follow-up (Total 5; CTWS 2, CBWS 3).
- Became political with VC (Total 3, all from CTWS).
- BAS filled positions (Total 3; CTWS 2, CBWS 1).
- LAC has no real power or function (Total 3; CTWS 1, CBWS 2)
- No action to motivate (Total 2, both from CBWS).
- LAC has no purpose (Total 2, both from CBWS).
- Trainees not on LAC (Total 2, both from CTWS)

The Following Comments were made by only one person (with region in parentheses)

- It's a self-selective group (CTWS)
- It's not represent. of the comm. (CTWS)
- Community Problems (CTWS)
- Difficult for BAS to get to comm.
- No practical guidance from BAS
- BAS didn't consult with LAC on issues

Suggestions

Following are the different responses from residents. A total of fifteen people made additional comments, with eight of those from CTWS and seven of those from CBWS.

- Need more guidance (Total 3, all from CBWS).
- Need new elections by the community (Total 3, all from CTWS).
- It would work (Total 2; 1 CTWS, 1 CBWS).

The following suggestions were made by one person each.

- Use LAC to promote new projects (CTWS).
- Put 2 people from LAC onto RAC (CTWS).
- BAS should have another meeting (CTWS).
- Hold a workshop (CBWS)
- House to house communication (CBWS)
- Work with those already motivated (CTWS)
- Could be good venue for networking with other villages (CBWS).

Appendix K: Economic Demonstration Projects Data Results

Familiarity with the Economic Demonstration Projects

The following table shows how many people stated that they were familiar with the Economic Demonstration/Development Projects sponsored by BAS. Of the 56 people who responded, 27 of those were from CTWS and 29 were from CBWS. A total of 42 respondents stated that they were familiar with the projects, with 23 of those from CTWS and 19 from CBWS. Four people from CTWS and ten people from CBWS stated that they were not familiar with the projects, for a total of fourteen.

Familiar with EDP?	Yes	No Comment	No	Total Responses
CT	7	9	3	10
Gardenia	4	1	1	5
Biscayne	2	1	0	3
Lemonal	5	0	0	5
Maypen	5	0	0	5
North Total	23	11	4	27
GT	7	5	4	
MC	6	2	0	
MM	5	3	1	
Red Bank	1	0	4	
San Roman	0	1	1	
South Total	19	11	10	29
Total	42	22	14	56

Types of Economic Demonstration Projects

In this section, we asked residents to state the different types of projects that they know about. Since the types of projects implemented by BAS are very different at CTWS and at CBWS, we divide this section into two parts, each focusing on CTWS and CBWS.

CTWS

The most commonly mentioned EDP is the Cashew Co-op, with a total of twelve people mentioning it. Fish farming was mentioned by eight people. Four people spoke of gibbon rearing, three mentioned a sheep rearing project, and one person mentioned an information center. Other single projects included: a sewing project, money for the women's center, a loan for machinery, and a tourism plan. Two people reported that they had not heard of anything.

CBWS

The garbage project and the bee coop in Maya Mopan both were mentioned five times by residents. The cacao project in Maya Mopan was mentioned three times, while the women's group craft center was mentioned by two people. One person cited ecotourism, while another said that there were no EDPs in their town.

Appendix K: Economic Demonstration Projects Data Results

Problems

Following is a list of the salient problems surrounding the EDPs cited by residents.

CTWS

Cashew Coop

- The idea of co-op is new, use to gathering and processing themselves.
- People did not want to take to factory and wait 6-8 months for payback.
- Feeling in the community: why is the factory in Sandhill when 90 percent of the cashews in Belize come from Crooked Tree?
- There is not the right kind of soil here to grow cashews and take part in the cashew co-op.

Fish Farming

- Lemonal got the project we were supposed to get and then Sandhill got the cashew co-op and no cashews grow there.
- Two stated that the villagers wanted to fish farm bay snook, not Tilapia. The Fisheries wanted the village to fish Tilapia, which the villagers know nothing about.
- BAS didn't survey the land.

Gibnut Rearing

- They take two years to reproduce and only usually have one baby. There would be no profit in this.

CBWS

Bee Keeping

- Operational problems.
- The blame of its failure put on the local people because they couldn't take care of it.

Garbage Disposal Project

- Garbage disposal did not come about because there was no funding and no alternatives.

Other Problems

- All people do not benefit equally.
- BAS has not helped start new projects.
- No proper trainings or technical expertise.

Benefits

Listed below by CTWS and CBWS:

CTWS

- BAS has helped with the women's group and to get a new building.
- Two stated that they got to go through financial trainings.
- Loan for pig rearing.
- Loan for sewing project.
- Was able to go to El Salvador for training with the Cashew Coop.

CBWS

- BAS helped fund the women's group new building.
- They (women's group) get 10 percent of park entrance fees.
- Two people stated that Honey is produced and sold in the local market.
- In reference to cocoa: BAS was very supportive and wanted to help.
- Communities working well together for project, best way to come together for grant.

Appendix K: Economic Demonstration Projects Data Results

Suggestions

Several people had general suggestions as to how the Economic Development Projects could be made to work, and others offered many alternative types of projects that they would like to see in their community. Tourism development was consistently cited as an economic development project of some interest, with four people at CTWS and ten people at CBWS stating that they were interested in assistance on this matter. Cattle rearing was cited by one person each in both CTWS and CBWS as a potential project, as was pig rearing. One person at CTWS also mentioned deer farming. A craft center was cited by six residents at CBWS as a possible EDP. Projects that CTWS residents cited were: Tourism Development (4); Cattle Raising (Total); Pig Rearing (Total 1); Deer Rearing (Total 1); and Fish Farming (Total 1). Residents at CBWS cited the following projects: Tourism Development (10); Craft Center (6); Licensed guide training (1); Taxi association (1); Tortilla factory (1); Raising cattle (1); Pig rearing (2); Yellow ginger (1); Make more trails at the park (1); Community Center/Hurricane Center (1); Education (1); and Finance Training (1).

Appendix L: Training Data Results

Trainings

Familiar with Trainings

The following chart shows how many people were familiar with the trainings. Of the 65 people who answered this question, 54 stated that they had heard of the trainings. Of those 54, 29 had actually attended the trainings. Eleven people stated that they had not heard of the trainings.

Familiar with Trainings?	Yes-attended	Yes but didn't attend	No Comment	No	Total Responses
CT	3	5	9	2	10
Gardenia	3	2		1	6
Biscayne	2	1			3
Lemonal	4			1	5
Maypen	4	1			5
CTWS Total	16	9	9	4	29
GT	5	5	2	4	14
MC	2	4	1	1	7
MM	3	5		1	9
Red Bank	2	2	1		4
San Roman	1			1	2
CBWS Total	13	16	4	7	36
Total	29	25	13	11	65

Types of Trainings

Of those who stated that they had heard of the trainings, 50 gave comments on what kinds of trainings were offered, with 24 of those responses coming from CTWS and 26 from CBWS. Following is a list of the various types of trainings that people remember either participating in or hearing about, starting with those that we commented on the most.

- Leadership (Total 14; CTWS 6, CBWS 8).
- Working within the Community (Total 4; CTWS 1, CBWS 3)
- Conservation (Total 3; CTWS 1, CBWS 2).
- Proposal Writing (Total 3; CTWS 2, CBWS 1).
- Co-management (Total 3; CTWS 2, CBWS 1).
- Management (Total 2, both from CTWS).
- Tour Guide (Total 2, both from CTWS).
- The following types of trainings were listed by one person each at CTWS: How to approach the government; Teamwork; Self-esteem; Advocacy; Book-keeping; Hospitality training; Learning more about society; and Community development.
- The following types of trainings were listed by one person each at CBWS: Economic development; the Benefits and dangers of CBWS; Communication skills; Women's empowerment; Time management; How to price crafts; Conflict management; Entrepreneurship; Sustainable projects; Working with other organizations; and Working with youth.

Benefits and Outcomes

The following responses concern what people viewed as the positive benefits and outcomes of the trainings. A total of 27 people commented, with 19 of those from CTWS and 8 from CBWS.

- The general information was good (Total 4; CTWS 3, CBWS 1)
- Can work better with others (Total 4; CTWS 3, CBWS 1).
- Have better leadership skills (Total 4; CTWS 3, CBWS 1).
- Gave us an idea of how to achieve something together (Total 3; CTWS 2, CBWS 1).
- Can influence or teach others (Total 3; CTWS 2, CBWS 1).
- The material was useful (Total 2, both from CTWS)
- Learned about BAS (Total 2, both from CTWS).
- The following two comments were made by one person each from CTWS: Can network with other community members and Learned to manage our resources.
- The following three comments were made by one person each from CBWS: Work with visitors; Give jobs; and the Garbage disposal project.

Problems

Following is a list of things that residents cited as being problems with the trainings. Fifteen and seven people replied from CTWS and CBWS respectively, for a total of 22.

- There is no follow-up (Total 4; CTWS 3, CBWS 1).
- Information isn't shared with the whole community (Total 3, all from CTWS).
- People don't see progress (Total 3, all from CBWS).
- Didn't achieve its real goals (Total 2, both from CTWS*)
- Not applicable to everyone (Total 2; CTWS 1, CBWS 1).
- Did not like how the trainees were selected (Total 1, from CBWS)
- The following were cited by one individual each from CTWS: Expensive; Trainees are already busy; Too basic; Village Council is not involved; Not 'hands-on'; and the BAS official changed.
- The following were cited by one individual each from CBWS: Did not like how the trainees were selected and No equitable.

Suggestions

Following are comments made by two people from CTWS and four people from CBWS on how to improve the trainings.

- At CTWS, one person each stated that trainings could be improved by: Better scheduling and Educating the community as a whole.
- At CBWS, three people from one stated that Better trainee selection was important, while one person said that Public relations with tourists would be a good training.

Appendix M: Environmental Education Data Results

Environmental Education

Schools

The following table breaks down the responses to questions about environmental education in the schools. A total of 50 people answered this question, with 18 of those from CTWS and 32 from CBWS. Some people gave more than one response/answer.

Environmental Education in the Schools

Comment	CT (10)	Gar. (3)	Bis. (2)	Lem. (3)	CTWS Total	MP (4)	Geo. (10)	MC (7)	MM (6)	RB (5)	CBWS Total	Total
Children are benefiting from education	1				1						0	1
BAS comes to the schools	5		2	3	10	3*	3	3	5**	5***	24	34
BAS takes children to the sanctuary/BAS office	6				6		1			1	2	8
I don't know of any EE in the schools	2	3			5			6	2	1	9	14
Slide shows in school					0	1					1	1
Teachers workshop	1		1		2			1			1	3

*but says not working

**2 people say that it has been a few years since last visit

***used to come, but not anymore

Frequency

The following table sums up the frequency of environmental education in the schools. This data is from adults surveyed.

- Total Comments 10; CTWS 3, CBWS 7.
- No comment. (Total 66; CTWS 73, CBWS 69).

How often?	CT (1)	Gar. (0)	Bis. (1)	Lem. (1)	CTWS Total	MP (0)	Geo. (2)	MC (1)	MM (2)	RB (2)	CBWS Total	Total
0					0						0	0
1-2 times per year					0		2	1	2	2	7	7
2+ times a year	1		1	1(?)*	3						0	3

*regularly

Appendix M: Environmental Education Data Results

Adults

The responses to questions of adult environmental education that is taking place in the communities. Twenty-six people gave answers to this question, with 12 of those from CTWS and 14 from CBWS.

Environmental Education for Adults

Comment	CT (7)	Gar. (0)	Bis. (1)	Lem. (4)	CTWS Total	MP (3)	Geo. (6)	MC (2)	MM (1)	RB (2)	CBWS Total	Total
No education happening (at present time)	4		0	3	7	3	3	2*		2**	10	17
Little education happening	2				2		1				1	3
Should be more education	3			2	5		5		1	1	7	12
'forbidden' signs	1				1						0	1

*used to have night class. Only contact with women's group

**one response was that they came only to tell them what not to do

Appendix N: Children Interview Data Results

Children's Interviews

All have had some sort of environmental education with BAS, mostly in the classroom but a couple had the opportunity to visit the visitor center or go on a bird walk in the sanctuary itself. Most see the value of protecting the animals in the wildlife sanctuary but some don't see as much importance in protecting the land. One comment that was heard on multiple occasions is that it important to protect the animals so the "white people" will continue to come and look at them.

All expresses a love of being outdoors. Doing things like riding a bike and playing basketball and football were mentioned but being in nature was not mentioned.

Appendix O: Survey-General Data Results

The Survey-General Survey

Residents were asked to state whether or not they agreed with the following statements.

Wildlife should be protected

A total of 68 people replied to this question. Sixty-three said Yes, one said No, and four said Somewhat. At CTWS, 28 said Yes and four said Somewhat. At CBWS, 35 said Yes and one said No.

It is important to protect the land around PA

Sixty-nine people replied to this. Of these, 64 said Yes, four said No, and one said Somewhat. At CTWS, 28 said Yes, two said No, and one said Maybe. At CBWS, 36 said Yes and two said No.

There are benefits of living next to a protected area

A total of 65 people responded to this question, with 52 stating Yes, 12 stating No, and one stating Somewhat. At CTWS, 25 said Yes, four said No, and one said Somewhat. At CBWS, 27 said Yes and eight said No.

Benefits listed overall are: tourism (23 responses, CTWS 11, CBWS 12); fishing (four responses, all at CTWS); wildlife (three responses, CTWS one, CBWS two); jobs (three responses, all At CBWS); protect watershed (three responses, all At CBWS), and one response each for the following: BAS helps the community (CTWS), relations with other communities (CTWS), build power of community to work with government (CTWS), appreciation for environment and nature (CTWS), Cashew Festival (CTWS), medicinal plants (CBWS), Craft Center (CBWS), and forests for future generations (CBWS).

The protected area has created many problems for me

Fifty-six people replied to this question, with 20 responding Yes and 37 responding No. At CTWS, eight said Yes and 17 said No. At CBWS, 12 said Yes and 20 said No.

The listed problems are as follows: take away from hunting (four responses, CTWS one, CBWS three); conflicts with farming (four responses, all At CBWS); affects their culture (two responses, both At CBWS), no land for farming (two responses, both at CBWS). At CTWS, the following were listed once: people net fish at night, communication – people did not understand what is going on, and it stops people from fishing. At CBWS, single comments included: undevelopment, not enough employment at CBWS, need for economic alternatives, no equality with BAS, lack of resources for housing material, no land for communities to expand, logging, and jaguar attacks on dogs.

The needs of my community are considered in park management

Fifteen respondents from CTWS answered Yes to this question, while 12 respondents At CBWS also answered Yes, for a total of 27 out of 53 total respondents answering Yes to this question. A total of 15 out of 53 answered No to this question, with seven of those from CTWS and eight from CBWS.

I can influence how the park is managed

Out of 59 total responses to this question, 22 said yes, seven said no, and two said “other” things. Twenty-two of the yes respondents were from CBWS, and 16 were from CTWS, while the no comments were seven and 10, respectively. ***NOTE-five of the people stated that it was possible through larger numbers of people (three from CTWS and two from CBWS)

Appendix O: Survey-General Data Results

BAS is open to new ideas on how to manage the park

There were 55 total respondents to this question, with 29 responding At CBWS and 26 responding At CTWS. Of these, a total of 40 said Yes, with 22 of those coming from CTWS and 18 from CBWS. Five people at CTWS and six people from CBWS answered no.

I am concerned about how the protected area is managed

Fifty-three people replied to this question, with 48 replying Yes and five replying No. Twenty-one people from CTWS and 27 from CBWS said Yes, and four and one said No, respectively.

9-11. I am interested in new EDP, Learning more, and Leadership trainings

A total of 66, 66, and 65 people responded to these last three questions respectively, with 58, 63 and 55 responding positively. Four, three and five people responded No to these categories.

Appendix P: BAS Strengthening Data Results

BAS Strengthening

View of the Protected Area

Benefits

In this section we asked people to comment on what they saw as the benefits are from living near the Protected Area. Below is a list of all comments, followed by the total number of people who made the comment, as well as totals from CTWS and CBWS. Seven people commented, with six of those from CTWS and one of those from CBWS.

View of Protected Area: Benefits

Comment:	CT (5)	Gar. (0)	Bis. (0)	Lem. (1)	CBWS Total	MP (0)	Geo. (0)	M/C (1)	M/M (1)	RB (0)	CTWS Total	Total
Some interaction with BAS	1				1						0	1
Signs and boardwalk	1				1						0	1
Information	2				2						0	2
Keeps outsiders from fishing as much in the lagoon	1				1						0	1
Tourism/money from entrance fees	1				1			1			1	2
Good for future generations, prevents development				1	1				1		1	2

Problems

The following is a list of the problems that respondents saw to living near a Protected Area. Twelve people made comments, with eight of those from CTWS and four of those from CBWS.

View of the Protected Area: Problems

Comment	CT (4)	Gar. (2)	Bis. (1)	Lem. (1)	CTWS Total	MP (1)	Geo. (1)	M/C (2)	M/M (0)	RB (0)	CBWS Total	Total
Change of traditional uses	2				2						0	2
BAS acts unilaterally	1				1						0	1
Don't understand how managed		2			2					1	1	3
No longer a buffer community			1		1						0	1
Only some people benefiting					0			1			1	1
Lack of enforcement to protect the area				1	1			1			1	2
No Change					0	1	1				2	2
No help from BAS to train as a guide etc.					0			1			1	1
Revenue sharing? Where's the money					0			1			1	1

Role of BAS*Presence*

In this section, we asked people to comment on what they viewed as BAS's role in the community. Below is a list of all comments, followed by the total number of people who made the comment, as well as totals from CTWS and CBWS.

- Total Comments 45; CTWS 23, CBWS 22.
- No comment. (Total 31; CTWS 15, CBWS 16).
- Have had limited contact with the organization (Total 18; CTWS 2, CBWS 16).
- Have had no contact with the organization (Total 10; CTWS 9, CBWS 1)
- Have seen changes with BAS, but needs improvement (Total 6, CTWS 4, CBWS 2).
- No real changes (Total 4; CTWS 3, CBWS 1).
- Seen changes in the last couple of years (Total 3, all from CTWS)
- BAS is here a lot (Total 3; CTWS 2, CBWS 1).
- Other (Total 1 from CBWS).

Good for Community

In this section, we look at what each town had to say about the ways in which BAS is good for the community. As there were very few points that overlap, we list the following by CTWS and CBWS. Overall, there are many different reasons why people feel that BAS is good for their respective communities, but it is difficult to pinpoint any broad trends. The only points in which responses do overlap

Appendix P: BAS Strengthening Data Results

are the following: 2 people, one from CTWS and one from CBWS, commented that BAS helps the women's group. Also, in both CTWS and CBWS people commented that BAS teaches them new things.

CTWS

- Helped get the house for the women's group.
- Workshop for women's group.
- Helped with Hurricane Keith aftermath.
- Opinions have changed since beginning.
- Tilapia festival, cashew festival and earth day were all good events that helped the community.
- "It helps that a community member runs the sanctuary."
- Laws changed to allow fishing.
- Assistance with tourism from the headquarters.
- BAS is helping people open eyes to other things.
- One said he has nothing to gain from relationship with BAS and other said now they are trying to get people involved.
- They could help improve things for future generations.
- BAS is trying to involve people.
- One respondent said they would like to get something out of relationship with BAS, but problem is people do not like working with other people.
- BAS fixed road to highway last year.
- They were also invited to cashew coop.
- They were invited to trainings.

CBWS

- BAS helps Women's Group whenever possible.
- A few years ago people did not know about BAS, but now they do.
- They have a good relationship with BAS, but have to keep an eye on the organization.
- One respondent said BAS has good relationship with community.
- BAS is good, they teach us a lot. 1

Problems and Issues

The following types of comments were made by community members regarding BAS's role in the community. Some comments were given more than once by community members.

- Only certain people in the village are benefiting (Total 8; CTWS 2, CBWS 6)
- BAS doesn't give money back to the community; keeps all entrance fees and grants (Total 7; CTWS 6, CBWS 1).
- No follow-through. They talk about projects but don't do them (Total 7; CTWS 4, CBWS 3).
- Lack of communication and trust (Total 8; CTWS 3, CBWS 5).
- They have taken away livelihoods (Total 6; CTWS 4, CBWS 2).
- They don't help promote tourism (Total 5; CTWS 2, CBWS 3).
- Hire wardens only from certain areas (Total 2, both from CBWS).
- The head warden is a problem (Total 2, both from CTWS).

Information Dissemination

Following are the types of comments made different community members.

- Total No Comment 48; CTWS 18, CBWS 30.
- Word of mouth (Total 8; CTWS 4, CBWS 4).
- Through the Village Council (Total 5, all At CTWS).
- Calling key people (Total 3, all At CTWS).
- Flyers/posters (Total 3; CTWS 2, CBWS 1).
- Letters to residents (Total 2, both At CTWS).
- Loud speaker from car (Total 1, from CTWS).
- Meetings (Total 1, from CTWS).

Appendix P: BAS Strengthening Data Results

Suggestions

Of the 45 people responding to this section, 24 were from CTWS and 21 were from CBWS. Comments included:

- Inform the communities more (Total 5; CTWS 2, CBWS 3)
- BAS should have more of a presence in the Communities/come out to the communities more (Total 4; CTWS 3, CBWS 1).
- Educate people on environment (Total 4; CTWS 2, CBWS 2)
- Help promote tourism (Total 2; CTWS 1, CBWS 1)
- Provide with alternative incomes for communities (Total 3; CTWS 2, CBWS 1)
- Environmental monitoring (creek and lagoon) (2 Total, both from CTWS)

Other single comments from CTWS include:

- Educate about the laws.
- Start with smaller projects rather than large ones.
- More workshops.

Single comments from CBWS include:

- Ask for advice from communities before starting projects.
- Train kids as tour guides
- Equal distribution of benefits to all communities.
- Do a project that everyone can benefit from.

Successes

Salient Comments

Sixteen residents offered comments in this section. Nine of these were from CTWS and seven were from CBWS. Listed below are their comments.

- BAS was doing an overall good job with managing the area (Total 5; CTWS 3, CBWS 2).
- There are no successes (4 Total; CTWS 2, CBWS 2).
- Better relations with the communities (2 Total; CTWS 1, CBWS 1).
- Somewhere in the middle (2 Total; CTWS 1, CBWS 1).
- BAS is protected the wildlife (1 CTWS).
- BAS is not operating the way it should be (1 CTWS).
- BAS has done some good things (1 CBWS).

Other Comments or Suggestions

Below is a list of other comments and suggestions offered by respondents. These were gathered at the end of the interview as a way to solicit any extra information. Thirty-five people responded, with 19 of those respondents from CTWS and 16 from CBWS.

Four comments were cited by more than one person. These were:

- Incorporate the communities more (2 Total, both from CTWS).
- Oversee park management (2 Total, both from CTWS).
- Be persistent and patient (2 Total, both from CTWS).
- Create more jobs (2 Total, 1 from CTWS, 1 from CBWS).

The following comments were each stated by respondents from CTWS:

- Keep up trails better
- Give tourists more for their fees
- Offer more than just meetings

Appendix P: BAS Strengthening Data Results

- Do more surveys on public opinion
- Would like to see more things ‘cleaned up’-referring to electricity???
- Show communities where funds go
- Explain actions to communities more
- Don’t tell villagers what to do
- BAS can go back to the other side of the lagoon
- I see BAS and comm. Working more closely for the sanctuary
- Name of the Sanctuary implies that it is only for CT Village
- More trainings

The following comments were stated by respondents from CBWS:

- More education in managing
- Trainings and exchanges with other organization.
- Better surveillance
- Work with youth and women.
- Train tour guides
- Network with tourism co. from BZ city
- Visit more people
- Visit more often
- Respect community ideas-consider them
- Help get LAC moving again
- Inform more often
- Make benefits more equitable
- BAS are the ones in the position to make decisions
- Understands that he must work with all people to get things done

Appendix Q: Familiarity with Co-Management Data Results

Familiarity with Co-Management:

The following table shows how many people answered yes, no, or gave no comment when asked whether they were familiar with the BAS co-management project. Out of a total of 50 people that commented on this, 29 said that they were familiar with co-management while 21 said that they were not. At CTWS, a total of 31 people commented, with 17 of those stating that they were familiar with co-management and 14 stating that they were not. At CBWS, those numbers were 50, 29 and 21, respectively.

1) Familiar with Co-mgmt?	Yes	No Comment	No	Total Commenting
CT	7	3	9	16
Gardenia	2	3	1	3
Biscayne	2	0	1	3
Lemonal	3	0	2	5
May Pen	3	1	1	4
North Total	17	7	14	31
GT	2	8	6	8
MC	5	2	1	6
MM	2	7	0	2
Red Bank	3	2	0	3
San Roman	0	2	0	0
South Total	12	21	7	19
Total	29	28	21	50

Comments

Following is a list of comments and suggestions that people made regarding the co-management project. Only two comments were cited by more than one person. Those are listed first, followed by a list of comments from CTWS and two comments from CBWS.

- Not much has happened with Co-M (2 total; 1 CTWS, 1 CBWS).
- There is no follow-up from BAS (2 Total; 1 CTWS, 1 CBWS).

Comments from CTWS include:

- No law enforcement for LAC to meet.
- Co-M can do little as a whole- up to govt.
- Need clearer definition of responsibilities.
- We should work with BAS to manage CTWS.
- Not sure how BAS involves Community.
- Co-M happening in other communities.
- No one wanted to be part of Co-M Project.
- People should have a say in mgmt of CTWS.
- BAS needs to repeat/remind people of project.
- BAS needs to go house to house.
- There is nothing to Co-manage.
- Everyone is getting fed up about LAC.
- Would like to see Co-M work.

The two comments from CBWS include:

- Need more info on Co-M Project.
- Have to involve the entire community.

Suggestions

Following are suggestions from community members.

CTWS

- There is no follow up. Trainees met a few times, but there has been no follow-up from BAS.
- New method for choosing LAC positions.
- Those who did trainings were suppose to be interim LAC, but did not have clergy or law enforcement.
- Co-management on a whole can do little because government ultimately responsible, i.e. salaries for schools and supplies. No matter how well LAC working it's ultimately the government. I see co-management as a child to the government. It will change for what the government wants and their way of thinking.
- If co-management could really be going, if the LAC could be in place, things could happen faster.
- There needs to be a clearer definition of who has responsibility for certain things, like who should pick up the garbage dumped on the causeway.
- We from the community should work together to help BAS to manage the sanctuary.
- Most of the co-management is going on in Crooked Tree.
- No one wanted to be a part of the co-management project and wouldn't cooperate.
- People should have a say in the way the area is managed, each person should be responsible and want to protect the area.
- If laws dealt with property, the co-management idea would work, i.e. when dry season cannot fish because otherwise spoil, but when the water is high don't allow them to fish either.
- Co-management is implementable, but what is there to co-manage at this time? We have workshops, but ventured into fishing and then told us we can't find feed so can't raise fish. Can we go into anything else—pig raising? I hear Biscayne is raising fish, so why can't we. If they are raising tilapia, why can't we?
- I think all are getting fed-up.
- I think we all would like to see it (co-management) work.

CBWS

- Encouraged BAS to implement. We developed a plan where together we will co-manage the park from there it died down and have not seen co-management since.
- Bas is not helping to start new projects.
- Co-management is not implemented
- Yes, people don't respond to it because in the past when BAS says something it doesn't happen~2 years ago they promised a project and nothing happened – project went somewhere else.
- Now when BAS calls a meeting the people don't show up – it's a waste of time.

Community Members' View on the Meaning of Co-management

Of the eight people that responded to this question, 7 stated that co-management means everyone working together for the management of the protected area. One person stated that they weren't sure what co-management means.

Literature Cited

Abstract

Lane, Marcus B. "Affirming New Directions in Planning Theory: Co-management of Protected Areas," *Society and Natural Resources* 14 (2001): 657-671.

Chapter 1

Borrini-Feyerabend, Grazia, M. Taghi Farvar, Jean Claude Nguingui and Vincent Awa Ndangang. *Co-management of Natural Resources: Organizing, Negotiating and Learning-by-Doing*. Kasperek Verlag, Heidelberg Germany: GTZ and IUCN, 2000.

Lane, Marcus B. "Affirming New Directions in Planning Theory: Co-management of Protected Areas," *Society and Natural Resources* 14 (2001): 657-671.

USAID. *Biodiversity Conservation: A Guide for USAID Staff and Partners*. CDROM. 2003.

Chapter 2

Abakerli, Stefania. "A Critique of Development and Conservation Policies in Environmentally Sensitive Regions in Brazil." *Geoforum* 32 (2001): 551-565.

Barborak, James R. *Institutional Options for Managing Protected Areas. Expanding Partnerships in Conservation*. Ed. Jeffrey A. McNeely. New York: Island Press, 1995.

Barzetti, Valerie. *Parks and Progress: Protected Areas and Economic Development in Latin America and the Caribbean*. Washington D.C.: World Conservation Union, 1993.

Bernard, Ted, and Jora Young. *The Ecology of Hope: Communities Collaborate for Sustainability*. East Haven: New Society Publishers, 1997.

Brandon, Katrina, Kent H. Redford, and Steven E. Sanderson, eds. *Parks in Peril: People, Politics and Protected Areas*. Washington D.C.: Island Press, 1998.

Brandon, K.E., and M. Wells. "Planning for People and Parks: Design Dilemmas." *World Development* 20 (1992): 557-570.

Brook, Amara, Michaela Zint, and Raymond De Young. "Landowner's Responses to an Endangered Species Act Listing and Implications for Encouraging Conservation." *Conservation Biology*. 17:6 (2003): 1638.

- Burnham, P. *Indian Country, God's Country: Native Americans and the National Parks*. Washington, DC: Island Press, 2000.
- Chambers, Nina M., and Sam H. Ham, "Strengthening Regional Planning Through Community Education." *Conservation of Biodiversity and the New Regional Planning*. Eds. Richard E. Saunier and Richard A. Meganck. Organization of American States and the World Conservation Union, 1995.
- Channell, Rob, and Mark L. Lomolino. "Dynamic Biogeography and Conservation of Endangered Species." *Nature* 403 (2000): 84-86.
- Christopher, K. "Dalma Wildlife Sanctuary, Bihar: Prospects for Joint Management." *Building Bridges for Conservation: Towards Joint Management of Protected Areas in India*. Eds. Ashish Kothari, Farhad Vania, Priya Das, K. Christopher and Suniti Jha. New Delhi: Indian Institute of Public Administration, 1997.
- De Vries, Gregory W., Margaret F. Haines, Steven B. Hufnagel, Andrew K. Laird, Kyle D. Rearick, and Osmany E. Salas. "Enhancing Collaboration for Conservation and Development in Southern Belize." Master's project. University of Michigan. 2003.
- Diegues, Antonio Carlos S. "Sustainable Development and People's Participation in Wetland Ecosystem Conservation in Brazil: Two Comparative Studies." *Grassroots Environmental Action: People's Participation in Sustainable Development*. Eds. Dharam Ghai and Jessica M. Vivian. London: Routledge, 1992.
- Diegues, Antonio Carlos. "Commons and Protected Areas in Brazil." The Eighth Bloomington, Indiana: Conference of the International Association for the Study of Common Property, 2000.
- Fagan, William F., Peter J. Unmack, Colleen Burgess, and W.L. Minckley. "Rarity, Fragmentation, and Extinction Risk in Desert Fishes." *Ecology* 83:12 (2002): 3250-3256.
- Gardner, Sarah Sturges. "Major Themes in the Study of Grassroots Environmentalism in Developing Countries." *Journal of Third World Studies* 12:2 (1995).
- Ghai, Dharam, and Jessica M. Vivian, eds. *Grassroots Environmental Action: People's Participation in Sustainable Development*. London: Routledge, 1992.
- Gillingham, Sarah. *Conservation Attitudes of Villagers Living Next to the Selous Game Reserve, Tanzania*. Department of Biological Anthropology, Cambridge University: Tanzania Wildlife Discussion Papers. <http://wildlife-programme.gtz.de/wildlife/publications.html> . 1998. (Accessed October 12, 2003).
- Guha, Ramachandra, and J. Martinez-Alier. *Varieties of Environmentalism: Essays North and South*. London: Earthscan Publications LTD, 1997.

- Guha, Ramachandra. *Environmentalism: A Global History*. New York: Longman, 2000.
- Keller, R.H. and M.F. Turek. *American Indians and National Parks*, Tucson, Arizona: University of Arizona Press, 1998.
- Kolk, Ans. "From Conflict to Cooperation: International Policies to Protect the Brazilian Amazon." *World Development* 26:8 (1998): 1481-1493.
- Kothari, Ashish, Neena Singh, and Saloni Suri, eds. *People and Protected Areas: Towards Participatory Conservation in India*, New Delhi: Sage Publications, 1996a.
- Kothari, Ashish. "Is Joint Management of Protected Areas Desirable and Possible." *People and Protected Areas: Towards Participatory Conservation in India*. Eds. Ashish Kothari, Neena Singh, and Saloni Suri. New Delhi: Sage Publications, 1996b.
- Martino, Diego. "Buffer Zones Around Protected Areas: A Brief Literature Review." *Electronic Green Journal* 15. <http://egj.lib.uidaho.edu/egj15/martino1.html> . 2001. (Accessed March 23, 2004).
- Oliviera, Jose Antonio Puppim de. "Governmental Responses to Tourism Development: Three Brazilian Case Studies." *Tourism Management* 24 (2003): 97-110.
- Poirier, R.A. and D.M. Ostergren. "Evicting People from Nature: Indigenous Land Rights and National Parks in Australia, Russia, and the United States." *Natural Resources Journal* 42 (1992): 331-351.
- Ramsar Convention on Wetlands. "About the Ramsar Convention." www.ramsar.org/index_about_ramsar.htm. 2004. (Accessed January 23rd, 2004)
- Rappole, John H., David I. King, and Jeffrey Diez. "Winter Vs. Breeding-Habitat Limitation for an Endangered Avian Migrant." *Ecological Applications* 13:3 (2002): 735-742.
- Saberwal, Vasant, Mahesh Rangarajan, and Ashish Kothari. *People, Parks and Wildlife: Towards Coexistence*. New Delhi: Orient Longman Limited, 2000.
- Schmidtz, David. "When Preservationism Doesn't Preserve." *Environmental Values*, 6. Institute for Humane Studies. <http://www.aworldconnected.org/article.php/308.html> . 1997. (Accessed October 15, 2003).
- Secretariat of the Convention on Biological Diversity. "Sustaining Life on Earth: How the Convention on Biological Diversity promotes nature and human well-being." <http://www.biodiv.org/doc/publications/guide.asp> . 2002. (Accessed Feb 9, 2004).

- Society of American Foresters. "Conservation Easements."
<http://www.safnet.org/policyandpress/psst/conservation.cfm> . 2004. (Accessed Feb 8, 2004)
- Stevens, Stan. *Conservation Through Cultural Survival: The Legacy of Yellowstone*. Washington, DC: Island Press, 1997.
- Suri, Saloni. "Peoples Involvement in Protected Areas: Experiences from Abroad and Lessons for India." *People and Protected Areas: Towards Participatory Conservation in India*. Eds. Ashish Kothari, Neena Singh, and Saloni Suri. New Delhi: Sage Publications, 1996.
- United Nations Environment Program. "Protected Areas Management Categories."
http://www.unep-wcmc.org/protected_areas/categories/. 2001. (Accessed Feb 8, 2004).
- United Nations Educational, Scientific and Cultural Organization (UNESCO).
 "Convention Concerning the Protection of the World Cultural and Natural Heritage."
http://whc.unesco.org/world_he.htm . 1972. (Accessed Feb 8, 2004).
- West, P.C., and S.R. Brechin. *Resident Peoples and National Parks: Social Dilemmas and Strategies in International Conservation*. Tucson, Arizona: University of Arizona Press, 1991.
- Western, David, and R. Michael Wright, eds., and Shirley C. Strum, associate ed. *Natural Connections: Perspectives in Community-based Conservation*. Washington D.C: Island Press, 1994.
- Wiens, Thomas. "Phillipines: Integrated Protected Areas Project. In The World Bank Participation Sourcebook. Chapter II: Sharing Experiences-Examples of Participatory Approaches." World Bank Institute.
<http://www.worldbank.org/wbi/sourcebook/sb0214.pdf> . 1996. (Accessed October 12, 2003).
- World Conservation Union. "Central America Launches First Regional Wetlands Policy of the World." World Conservation Union Newsletter.
http://www.iucn.org/info_and_news/press/ramsar_2711.pdf . 2002a. (Accessed Feb 4, 2004).
- World Conservation Union. *IUCN Protected Areas Management Categories*.
<http://www.ontarioparks.com/english/iuc.html> . 2002b. (Accessed March 13, 2003).

Chapter 3

- Agrarian Reform and Rural Development (ANGOC) and ELCI International. 1989. People's Participation and Environmentally Sustainable Development.
- Agrawal, A. and C.C. Gibson. "The Role of Community in Natural Resource Conservation." *Communities and the Environment: Ethnicity, Gender, and the State in Community-Based Conservation.* New Brunswick: Rutgers University Press, 2001. 1-31.
- Alexander, Sara E. (2000). *Resident Attitudes Towards Conservation and Black Howler Monkeys in Belize: The Community Baboon Sanctuary.* Environmental Conservation 7 (4): 341-350.
- Babbit, E., P. Gutlove and L. Jones, *Handbook of Basic Conflict Resolution Skills: Facilitation, Mediation and Consensus Building.* Cambridge MA: The Balkans Peace Project, 1994.
- Barborak, James R., Amanda D. Holmes, Gerald R. Mueller, and Jocelyn D. Peskin. "Community Involvement in Establishment, Planning, and Management of GEF Priority Protected Areas in Mesoamerican Barrier Reef System." Final Report submitted to the World Bank by the Wildlife Conservation Society. June 2002.
- Barrera-Hernandez, Lila K. and Alastair Lucas. "Environmental Law in Latin America and the Caribbean: Overview and Assessment." *Georgetown International Environmental Law Review* 12:1 (1999): 207-245.
- Barzetti, Valerie. *Parks and Progress: Protected Areas and Economic Development in Latin America and the Caribbean.* Washington D.C.: World Conservation Union, 1993.
- Belize Audubon Society. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centers for co-management of protected areas." European Union Proposal. Internal documentation, 1999.
- Belize Audubon Society. "EU Rep Visits the Co-Management Project." *Belize Audubon Society Newsletter* June 2002: 34:1.
- Belize Audubon Society. "Development of Cockscomb Basin and Crooked Tree Wildlife Sanctuary Project Sheet." Internal documentation, unpublished.
- Biodiversity Support Program. *Measuring Conservation Impact: An Interdisciplinary Approach to Project Monitoring and Evaluation.* Proceedings from a BSP symposium held at the joint annual meetings of the Ecological Society of America and the Society for Conservation Biology in Providence, Rhode Island, World Wildlife Fund Inc. Washington, D.C. August 1999.

- Boo, Elizabeth. *Ecotourism: The Potentials and Pitfalls, Volume 2*. Washington D.C., World Wildlife Fund, 1990.
- Borrini-Feyerabend, Grazia, M. Taghi Farvar, Jean Claude Nguingiri and Vincent Awa Ndangang. *Co-management of Natural Resources: Organizing, Negotiating and Learning-by-Doing*. Kasperek Verlag, Heidelberg Germany: GTZ and IUCN, 2000.
- Borrini-Feyerabend, G. "Collaborative Management of Protected Areas: Tailoring the approach to the context." In: *Issues in Social Policy*. Social Policy Group, IUCN, Switzerland. <http://www.iucn.org/themes/spg/Files/tailor.html> . 1995. (Assessed February 4, 2004)
- Bouton, Shannon N., and Peter C. Frederick. "Stakeholders' Perceptions of a Wading Bird Colony as a Community Resource in the Brazilian Pantanal." *Conservation Biology*. 17:1 (2002).
- Brandon, K. E. and M. Wells. "Planning for People and Parks: Design Dilemmas." *World Development* 20:4 (1992): 557-570.
- Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Second Year Intermediate Technical Report. Internal documentation, 2002b.
- Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Co-Management Coordinator Monthly Reports. Internal documentation, June 2002-March 2003.
- Catzim, Nellie, and Heron Moreno. Personal Interview. 19 July 2003.
- Cheema, Shabbir. *Good Governance: A Path to Poverty Eradication*. New York: United National Development Programme, 2000.
- Civil Society Organizations and Participation Programme (CSOPP) of the United Nations Development Programme (UNDP). *Empowering People - A Guide to Participation*. <http://www.undp.org/csopp/CSO/index.html>. 2000. (Accessed February 3, 2004).
- Dasgupta, P. and I. Serageldin, eds. *Social Capital: A Multi-perspective Approach*. Washington, DC: World Bank, 2000.
- Day, B and Monroe, Martha. *Environmental Education and Communication for a Sustainable World*. Washington, D.C.: GreenCOM, 2000.
- Fischer, Hank. *Wolf Wars*. Helena, Montana: Falcon Publishers, 1995.

- Govan, Hugh. "Co-management of natural resources in Central America: The road to 'equitable distribution of the benefits of biodiversity or another empty discourse of the technical elite?'" Prepared as a contribution to the EPP Initiative: Lessons Learned in Community-Based Management and Co-Management of Natural Resources and Protected Areas: focus on coastal and marine resources and Indigenous People's communities in Central America and the Caribbean. March 2003.
- Grootaert, C. *Social capital: the missing link*. World Bank Social Capital Initiative Working Paper 5, Washington, DC: World Bank, 1998.
- Gurung, Chandra P. "People and Their Participation: New Approaches to Resolving Conflicts and Promoting Conservation." *Expanding Partnerships in Conservation*. Ed. Jeffrey A. McNeely. Washington D.C.: Island Press, 1995.
- Hampton, Greg. "Environmental Equity and Public Participation". *Policy Sciences* 32 (1999): 163-174.
- Hill, M.A., and A.J Hill. (1993) "Kakadu National Park: An Australian Experience in Co-Management," in David Western and R. Michael Wright (eds.) *Natural Connections: Perspectives in Community-based Conservation*. Washington, D.C.: Island Press, 1994.
- Higgs, Amy and Torre McMillan. "How is sustainability education different from EE?" 2002.
- Hough, J.L. "Obstacles to effective management of conflicts between National Parks and surrounding human communities in developing countries." *Environmental Conservation* 15:2 (1988).
- Hug, John. "Two Hats." *The Report of the North American Regional Seminar on Environmental Education for the Real World*. Eds. Aldrich et al.. Columbus: SMEAC Information Resource Center, 1977.
- Hungerford, Harold. & Trudi Volk. "Changing learner behavior through environmental education." *Journal of Environmental Education* 21:3 (1990): 8-22.
- International Development Research Centre (IRDC). *Conflict and collaboration in natural resource management*. http://web.idrc.ca/en/ev-27964-201-1-DO_TOPIC.html . 2003. (Assessed February 10, 2004).
- International Snow Leopard Trust. "Snow Leopard Enterprises Project." http://www.snowleopard.org/islt/programs/irb_ent.html . No date. (Accessed Feb 9, 2004).

- Isla Villar, Pablo. "Consultancy Report on Strategies for the Co-Management of the Cockscomb Basin Wildlife Sanctuary with Local Communities". APFT (The Future of Tropical Rainforest Peoples)/Belize Audubon Society, unpublished.
- Kaplan, Rachel. Participation in Environmental Design: Some Considerations and a Case Study. *Humanscape*. Eds. Steven Kaplan and Rachel Kaplan. Ann Arbor: Ulrich's, 1989.
- Lane, Marcus B. "Affirming New Directions in Planning Theory: Co-management of Protected Areas," *Society and Natural Resources* 14 (2001): 657-671.
- Little, P.D. "The Link Between Local Participation and Improved Conservation: A Review of Issues and Experiences." *Natural Connections: Perspectives in Community-based Conservation*. Ed. D. Western and R.M. Wright. Washington DC: Island Press, 1994.
- Margoluis, C. *Role of NGOs in Conservation: A Literature Review for In Good Company: Effective Alliance for Conservation*. Washington DC: Biodiversity Support Program, 2000.
- McKinney, Matthew and Will Harmon. "Public Participation in Environmental Decision-making: Is it Working?" *National Civic Review* 91:2 (Summer 2002).
- Monroe, Martha. *What Works: A guide to Environmental Education and Communication Projects for Practitioners and Donors*. Gabriola Island, B.C.: New Society Publishers, 1999, 76-77.
- Moreno, Heron. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Belize Audubon Society." *Community Liaison Officer Monthly Reports*. Internal documentation, July 2002-March 2003.
- Munro, D.A. "New Partnerships in Conservation: How to Expand Public Support for Protected Areas." *Expanding Partnerships in Conservation*, Ed. Jeffrey A. McNeely. Island Press: Washington, DC, 1995.
- Murphree, Marshall W. "The Role of Institutions in Community-based Conservation." *Natural Connections: Perspectives in Community-Based Conservation*. Ed. D. Western and R.M. Wright. Washington DC: Island Press, 1993. 403-427.
- Oakley, P. *Projects with People: The practice of participation in rural development*. International Labour Organization, 1991.
- Oliviera, Jose Antonio Puppim de. "Governmental Responses to Tourism Development: Three Brazilian Case Studies." *Tourism Management* 24 (2003): 97-110.

- Paul, S. *Community Participation in Development Projects*. Discussion paper no. 6. Washington, D.C.: World Bank, 1987.
- Petrova, Elena, Crescencia Maurer, Norbert Henninger and Fran Irwin with John Coyle and Gretchen Hoff. *Closing the Gap: Information, Participation and Justice in Decision-making for the Environment*. Washington, DC: World Resources Institute, 2002.
- Pretty, J. "People, livelihoods, and collective action in biodiversity management," *Biodiversity, Sustainability, and Human Communities: Protecting Beyond the Protected*, Ed. T.O'Riordan, and S. Stoll-Kleemann. Cambridge: Cambridge University Press, 2002. 61-86.
- Pretty, Jules. "Social Capital the Collective Management of Resources," *Science Magazine* 302: 12 December 2003.
- Rao, K., C. Geisler. "The social consequences of protected areas development for resident populations." *Society and Natural Resources* 3:1 (1990): 19-32.
- Ribot, Jesse. *Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation*. Washington DC: World Resources Institute, 2002.
- Richards, Ben. Personal Interview. 19 June 2003.
- Salafsky, N and E. Wollenberg. "Linking Livelihoods and Conservation: A Conceptual Framework and Scale of Assessing the Integration of Human Needs and Biodiversity," *World Development*. 28:8 (2000): 1421-1438.
- Salas, Osmany and Valdemar Andrade. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." First Year Intermediate Technical Report. Internal documentation. September 2001.
- Salas, Osmany. "Towards a Co-management System for the Crooked Tree Wildlife Sanctuary, Belize." http://www.cerc.columbia.edu/training/forum_01cs/SalasCS.html. 2001. (Accessed April 2, 2003).
- Saqui, Ernesto. "Conserve or Reserve? Community Conservation." *Belize Audubon Society Newsletter*, August-September, 2000: 32:3.
- Secaira, Estuardo, Andreas Lehnhoff, Anne Dix and Oscar Rojas. "*Delegating Protected Area Management to an NGO: The Case of Guatemala's Sierra de las Minas Biosphere Reserve*." A Case Study for Shifting the Power: Decentralization and Biodiversity Conservation. Wyckoff et al. (Eds). Biodiversity Support Program. Washington, DC., 2001.

- Singh, M. and M. Lal. "Participatory Management of Natural Resources." In *Community Participation in Natural Resource Management*. Mishra, G.P. and B.K. Bajpai (eds). Rawat Publications: Jaipur, 2001.
- Srinivasan, L. 1990. *Tools for Community Participation: A Manual for Training Trainers in Participatory Techniques*. PROWESS/UNDP Technical Series.
- Stapp, William. "The Concept of Environmental Education." *American Biology Teacher* 32:1 (1970), 14-15.
- Steelman, Toddi A and Ascher, William. "Public involvement methods in natural resource policy making: Advantages, disadvantages and trade-offs," *Policy Sciences* 30 (1997), 71-90.
- Torres, Blanca. "Transnational Environmental NGOs: Linkages and Impact on Policy." *Latin American Environmental Policy in International Perspective*. Ed. G. J. MacDonald, D. L. Nielson and M. A. Stern. Boulder, CO: Westview Press, 1997.
- Taiepa, T., Lyver, P., Horsley, P., Davis, J., Bragg, M., & Moller, H. Co-management of New Zealand's conservation estate by Maori and Pakeha: a review. *Environmental Conservation* 24 (3): 236-250.
- Ulfelder, W.H. and S.V. Poats. "Participatory Conservation: Lessons from the PALOMAP Study in the Cayambe-Coca Ecological Reserve, Ecuador." *Integrated Conservation and Development in Tropical America: Experiences and Lessons in Linking Communities, Projects, and Policies*. Ed. Rhoades, R.E. and J. Stallings. Athens: SANREM CRSP and CARE-SUBIR, 1999.
- United Nations Development Program (UNDP). *Human Development Report 1999: Globalization with a Human Face*. New York: UNDP, 1999.
- UNESCO. *Intergovernmental Conference on Environmental Education Final Report*. Paris: UNESCO, 1978.
- USAID. *Biodiversity Conservation: A Guide for USAID Staff and Partners*. CDROM. 2003.
- Wallace, Audrey and Lisa Naughton-Treves. "Belize: Rio Bravo Conservation and Management Area," in *Parks in Peril: People, Politics and Protected Areas*, edited by Katrina Brandon, Kent H. Redford, and Steven E. Sanderson Washington, DC: Island Press, 1998: 217-247.
- Walters, Lawrence, James Aydelotte, and Jessica Miller. "Putting More Public in Policy Analysis," *Public Administration Review* 60 (July/August 2000).
- Wells, Michael P. "A Profile and Interim Assessment of the Annapurna Conservation

- Area Project, Nepal.” *Natural Connections: Perspectives in Community-Based Conservation*. Eds. David Western and R. Michael Wright, and associate ed. Shirley C. Strum. Washington D.C.: Island Press, 1994.
- Wells, M and Brandon, K. *People and Parks: Linking Protected Area Management with Local Communities*. Washington DC: The World Bank, World Wildlife Fund, USAID, 1992.
- Western, D. “Linking Conservation and Community Aspirations.” *Natural Connections: Perspectives in Community-based Conservation*. Ed. D. Western and R.M. Wright. Washington, D.C: Island Press, 1994.
- Wiens, Thomas. “Phillipines: Integrated Protected Areas Project. In The World Bank Participation Sourcebook. Chapter II: Sharing Experiences-Examples of Participatory Approaches.” World Bank Institute. <http://www.worldbank.org/wbi/sourcebook/sb0214.pdf> . 1996. (Accessed February 5, 2004).
- Wondolleck, Julia M. and Yaffee, Steven L. *Making Collaboration Work: Lessons from Innovation in Natural Resource Management*. Washington, DC: Island Press, 2000.
- World Bank: *Governance and Development*. Washington DC: World Bank, 1992.
- Wyckoff-Baird, Barbara, Andrea Kaus, Catherine A. Christen, and Margaret Keck. *Shifting the Power: Decentralization and Biodiversity Conservation*. Washington DC: Biodiversity Support Program, 2000.
- Chapter 4**
- American Map Corporation. *Quick and Easy World Atlas*. United States: Hammond World Atlas Corporation, 2000.
- Andrade, Valdemar. “People and Protected Areas: Where is the EU Co-Management Project?” *Belize Audubon Society Newsletter* Aug. – Sept. 2000: 32: 3.
- Andrade, Valdemar. “Report on Co-Management.” Internal documentation, March 2002.
- Barborak, James R., Amanda D. Holmes, Gerald R. Mueller, and Jocelyn D. Peskin. “Community Involvement in Establishment, Planning, and Management of GEF Priority Protected Areas in the Mesoamerican Barrier Reef System.” June 2002.
- Barry, Tom, and Dylan Vernon. *Inside Belize: The Essential Guide to its Politics, Economy, Society, and Environment*. Albuquerque, New Mexico: Interhemispheric Resource Center, 1995.
- Belize. Conservation Division. *Declared Protected Areas of Belize*. October 2001.

Belize. Law Revision Commissioner. *Belize Environmental Protection Act, Chapter 328*. Revised edition. Belmopan. <http://www.belize-law.org/lawadmin/index2.html> . 2000a. (Accessed March 29, 2004).

Belize. Law Revision Commissioner. *Village Council Act, Chapter 88*. Revised edition. Belmopan. <http://www.belize-law.org/lawadmin/index2.html> .2000b. (Accessed March 4, 2004).

Belize Audubon Society. "Development of Cockscomb Basin and Crooked Tree Wildlife Sanctuary Project Sheet." Internal documentation, unpublished.

Belize Audubon Society. <http://www.belizeaudubon.org> . No date. (Accessed April 2, 2003).

Belize Audubon Society. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." European Union Proposal. Internal documentation, 1999.

Belize Audubon Society. "Participants from the Buffer-zone Communities Graduate from BAS Leadership Training Program." *Belize Audubon Society Newsletter* December 2001: 33: 3.

Belize Audubon Society. "EU Rep Visits the Co-Management Project." *Belize Audubon Society Newsletter* June 2002: 34: 1.

Belize National Population and Housing Census. <http://www.cso.gov.bz> . 2000. (Accessed April 1, 2003 and Feb 1, 2004).

Belize.Net Inc. "Political Map of Belize." 2000. <http://www.belize.net/html/maps/politicalmap.shtml>. (Accessed April 2, 2004).

Belize Tourism Board. "Tourism Statistics." <http://www.belize-tourism.org/arrival.html> . 2004. (Accessed Jan 31, 2004).

Botnick, Christopher, Jesse Buff, Laura Congdon, Jeff Manternach, Laura Montes De Oca, and Jennifer Rennick. "Examining the Belize Audubon Society's Management of Protected Areas in Belize." Master's project. University of Michigan. 2000.

Caribbean Environment Program (CEP)/United Nations Environment Program (UNEP). "Status of Protected Areas in the Wider Caribbean Region: Belize." <http://www.cep.unep.org/pubs/techreports/tr36en/countries/beliz.html> . 1996. (Accessed Feb 4, 2004).

Catzim, Adele. "Project Systematization Main Report. The Community Co-Managed Parks System Project 1999-2002." PACT/GEF/UNDP: May 2002a.

- Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Second Year Intermediate Technical Report. Internal documentation, September 2002b.
- Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Co-Management Coordinator Monthly Reports. Internal documentation, June 2002-March 2003.
- Catzim, Nellie and Heron Moreno. "VI Congress of the Mesoamerican Society for Biology and Conservation–Workshop: Local communities' participation in the management of protected areas and the conservation of biodiversity." Internal documentation, 2002.
- Catzim, Nellie, and Heron Moreno. Personal interview. 19 July 2003.
- CentralAmerica.Com. Cockscomb Basin Wildlife Sanctuary. centralamerica.com/belize/parks/cockscomb.htm . 2000. (Accessed March 2004).
- De Vries, Gregory W., Margaret F. Haines, Steven B. Hufnagel, Andrew K. Laird, Kyle D. Rearick, and Osmany E. Salas. "Enhancing Collaboration for Conservation and Development in Southern Belize." Master's project. University of Michigan. 2003.
- Dubon, Ansel. Personal interview. 21 July 2003.
- Eltringham, Peter. *The Rough Guide to Belize*. London: Penguin Books Ltd, 2001.
- Georgetown Community Member. Personal Interview. 9 June 2003.
- Georgetown community member. Personal interview. 12 July 2003.
- Government of Belize. "About Belize." <http://www.belize.gov.bz/belize/welcome.html> . 1999a. (Accessed Jan 31, 2004).
- Government of Belize. "About Belize: Agriculture." <http://www.belize.gov.bz/belize/agriculture.html> . 1999b. (Accessed Jan 31, 2004).
- Government of Belize. "About Belize: The Economy." <http://www.belize.gov.bz/belize/economy.html> . 1999c. (Accessed Jan 31, 2004).
- Government of Belize. "About Belize: The History." <http://www.belize.gov.bz/belize/history.html> . 1999d. (Accessed Jan 28, 2004).
- Government of Belize. "About Belize: The Politics." <http://www.belize.gov.bz/belize/political.html> . 1999e. (Accessed Jan 31, 2004).

- Government of Belize. "About Belize: Tourism." <http://www.belize.gov.bz/belize/tourism.html> . 1999f. (Accessed Jan 31, 2004).
- Government of Belize. "Library, Chapter 14: Local Government." http://www.belize.gov.bz/library/political_reform/p14.html . 1999g. (Accessed 4 Feb, 2004).
- Government of Belize. "Towards A National Policy and Strategy for Land Allocation and Acquisition." http://www.belize.gov.bz/pressoffice/press_releases/01-03-2004-3106.shtml . 1999h. (Accessed March 30, 2004).
- Government of Belize. "Cabinet." <http://www.belize.gov.bz/cabinet/welcome.shtml> . 2003. (Accessed Feb 4, 2004).
- Government of Belize. "Ministry of Natural Resources and the Environment, Commerce and Industry: An Overview." http://www.belize.gov.bz/cabinet/j_briceno/welcome.shtml . 2000. (Accessed Feb 1, 2004).
- Government of Belize and Belize Audubon Society. *Memorandum of Understanding: Co-Management Agreement*. Belmopan: 1999.
- International Travel Maps. "Belize: 1:350,000." ITMB Publishing LTD, n.d.
- Isla Villar, Pablo. "Consultancy Report on strategies for the co-management of the Cockscomb Basin Wildlife Sanctuary with local communities." APFT (The Future of Tropical Rainforest Peoples)/Belize Audubon Society, unpublished.
- Jacobs, N.D., and A. Castañada. *Belize National Biodiversity Strategy*. Belmopan, Belize: Ministry of Natural Resources and Environment, 1998.
- Johnson, Melissa. "Nature and Progress in Rural Creole Belize." Ph.D. diss. University of Michigan. 1998.
- Land Information Center. "Protected Areas Belize." Belmopan, Belize. http://www.pactbelize.org/map_lg.html . 2002. (Accessed January 10th, 2004).
- Lemonal community member. Personal interview. 17 June 2003.
- Marsden, Anne-Michelle. "The Living Maya: The Mopan and Q-eqchi' of the Toledo District, Belize, Central America." CD-ROM: MayaViewKeeper, 2001.
- McLaughlin, William J. "Building a Practical Management Planning Approach for Belize's Protected Areas –A Participatory Forum." 19 February 2001.

- Medina, Gus. *National Environmental Education Strategy for Belize*. The Ministry of Tourism and the Environment, Government of Belize. Belize, 1995.
- Meerman, Jan, J.R. Wilson, J. McGill, J. Clabaugh, M. Vasquez, T. Boomsma, and E. Garcia. *Work Plan for the Formulation of Belize's Protected Areas Policy and System Plan*. Belmopan, 2004.
- Moreno, Heron. "Report on Co-Management Working Session. Roles of LAC." Internal documentation, 11 April 2002a.
- Moreno, Heron. "Trip to Guatemala for the Development of Networks of Cooperation and Strengthening of Capacity for the Development of Sustainable Tourism in the Communities of the CTWS." Internal documentation, June. 2002b.
- Moreno, Heron. *BAS Buffer Communities Information Sheet*. 2003a.
- Moreno, Heron. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Belize Audubon Society." Community Liaison Officer Monthly Reports. Internal documentation, July 2002-March 2003.
- NaturaLight Productions Ltd. About PACT. <http://www.pactbelize.org/pact.html> . 2004a. (Accessed March 2, 2004).
- NaturaLight Productions Ltd. "Distribution of Grant Programme Funding." <http://www.pactbelize.org/pdf/distribution.pdf> . 2004b. (Accessed February 2004).
- NaturaLight Productions, Ltd. "NorthernBelize.com: Culture → Mestizo." http://www.northernbelize.com/cult_mestizo.html . 2004c. (Accessed Jan 30, 2004).
- NaturaLight Productions Ltd. "SouthernBelize.com: History and Culture → Garifuna." http://www.southernbelize.com/hist_ethnic.html . 2004d. (Accessed Feb 2, 2004)
- NaturaLight Productions Ltd. "SouthernBelize.com: History and Culture → Other Groups." http://www.southernbelize.com/hist_ethnic.html . 2004e. (Accessed Jan 31, 2004)
- Peedle, Ian. *Belize: A Guide to the People, Politics and Culture*. Brooklyn, New York: Interlink Books, 1999.
- Perrottet, Tony, ed. *Inside Guides to Belize*. Singapore, Houghton-Mifflin Press, 1995.
- Pinelo, John, and Natalie Rosado. "Protected Areas in Belize: Conservation Division's Perspective." *Belize Audubon Society Newsletter* 22:2 August 2001.

- Ravndal, Virginia. "Community Co-Managed Park System for Belize." UNDP/GEF/PACT Final Project Evaluation. October 2002.
- Richards, Ben. Personal interview. 19 June 2003.
- Rosado, Natalie. Personal interview. 24 March 2004.
- Sabido, Oswaldo. Personal interview. 21 July 2003.
- Sabido, Oswaldo, Chief Forest Officer, Forest Department, Ministry of Natural Resources, Environment, Commerce and Industry. Personal Interview. July 21, 2003.
- Salas, Osmany. Towards a Co-management System for the Crooked Tree Wildlife Sanctuary, Belize. http://www.cerc.columbia.edu/training/forum_01cs/SalasCS.html . 2001. (Accessed April 2, 2003).
- Salas, Osmany. Personal Interview. 24 March 2004a.
- Salas, Osmany. "The National Protected Areas Policy and System Plan Initiative." Ministry of Natural Resources, Environment and Industry. Power Point Presentation, unpublished. March 24, 2004b.
- Salas, Osmany and Valdemar Andrade. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." First Year Intermediate Technical Report. Internal documentation, September 2001.
- Saqui, Ernesto. "Conserve or Reserve? Community Conservation." *Belize Audubon Society Newsletter* August-September 2000: 32:3.
- United States Embassy, Belize. "Visiting Belize." <http://usembassy.state.gov/belize/wwwwhvisitingbelize.html>. 2002. (Accessed Jan 31, 2004).
- Wade, Diane. "BAS Education for Sustainability Report." Internal documentation, Unpublished. 2002.
- Wetland International. A Directory of Wetlands of International Importance. http://www.wetlands.org/RDB/Ramsar_Dir/Belize/BZ001D02.htm . 2004. (Accessed January 20, 2004).
- Wikipedia: the Free Encyclopedia. "List of Country Name Etymologies". http://en.wikipedia.org/wiki/List_of_country_name_etymologies . 2004. (Accessed Jan 30, 2004)

Chapter 5

Borrini-Feyerabend, G. "Collaborative Management of Protected Areas: Tailoring the approach to the context." In: *Issues in Social Policy*. Social Policy Group, IUCN, Switzerland. <http://www.iucn.org/themes/spg/Files/tailor.html> . 1995. (Assessed February 4, 2004).

Chapter 6

Borrini-Feyerabend, G. "Collaborative Management of Protected Areas: Tailoring the approach to the context." In: *Issues in Social Policy*. Social Policy Group, IUCN, Switzerland. <http://www.iucn.org/themes/spg/Files/tailor.html> . 1995. (Assessed February 4, 2004).

Belize Audubon Society. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centers for co-management of protected areas." European Union Proposal. Internal documentation, 1999.

Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Co-Management Coordinator Monthly Reports. Internal documentation, June 2002-March 2003.

Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Second Year Intermediate Technical Report. Internal documentation, 2002b.

Isla Villar, Pablo. "Consultancy Report on strategies for the co-management of the Cockscomb Basin Wildlife Sanctuary with local communities." APFT (The Future of Tropical Rainforest Peoples)/Belize Audubon Society, unpublished.

Moreno, Heron. "Report on Co-Management Working Session. Roles of LAC." Internal documentation, 11 April 2002a.

Richards, Ben. Personal Interview. 19 June 2003.

Salas, Osmany and Valdemar Andrade. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." First Year Intermediate Technical Report. Internal documentation, September 2001.

Secaira, Estuardo, Andreas Lehnhoff, Anne Dix and Oscar Rojas. "*Delegating Protected Area Management to an NGO: The Case of Guatemala's Sierra de las Minas Biosphere Reserve.*" A Case Study for Shifting the Power: Decentralization and Biodiversity Conservation. Wyckoff et al.. (Eds). Biodiversity Support Program. Washington, DC., 2001.

Chapter 7

Andrade, Valdemar. Personal Interview. 15 July 2003.

Catzim, Nellie. "The development of Cockscomb Basin Wildlife Sanctuary and Crooked Tree Wildlife Sanctuary as centres for co-management of protected areas." Second Year Intermediate Technical Report. Internal documentation, September 2002b.

Secaira, Estuardo, Andreas Lehnhoff, Anne Dix and Oscar Rojas. "*Delegating Protected Area Management to an NGO: The Case of Guatemala's Sierra de las Minas Biosphere Reserve.*" A Case Study for Shifting the Power: Decentralization and Biodiversity Conservation. Wyckoff et al.. (Eds). Biodiversity Support Program. Washington, DC. 2001