

**SUSTAINABLE TOURISM ASSESSMENT FOR A MARINE PROTECTED
AREA IN SOUTHWEST JAMAICA**

A Masters Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Masters of Science, Geospatial Sciences in Geography and Geology

By

Emma Clegg

May 2015

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Geography, Geology and Planning

Missouri State University, May 2015

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ABSTRACT

The Jamaican economy is heavily reliant on the tourism industry. However, large scale developments often disrupt local communities and degrade natural marine resources. An approach is needed where tourism, environmental and social goals are considered equally. Marine protected areas (MPAs) have been created in Jamaica to improve degraded fish stocks and restore marine ecosystems. While focused on local fisheries, MPAs also create opportunities to generate sustainable tourism. However, the pathways for meshing fishery conservation and tourism goals and outcomes are poorly understood. Critical questions need to be answered such as: what options are available to develop sustainable tourism and what are the first steps that need to be taken? To address these questions, I examine the Bluefields Bay MPA and use interviews from community stakeholders and comparative case studies to evaluate opportunities and devise sustainable strategies. These strategies include short, medium and long term recommendations. The short-term recommendations include improvements to accommodation options, targeted marketing and training for the local people. Medium-term recommendations include the creation of a structured tourism plan, the addition of more restaurants and a visitor center. The long-term recommendations include expanding the size of the MPA to protect more critical habitat areas and provide resources for a monitoring program which will attract the targeted markets. These recommendations will hopefully allow Bluefields Bay to become a popular tourist destination, while preserving the environment and resources which are important to residents and future generations.

KEYWORDS: Jamaica, tourism, sustainable tourism, marine protected area, sanctuary

This abstract is approved as to form and content

Dr. Robert Pavlowsky
Chairperson, Advisory Committee
Missouri State University

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ACKNOWLEDGEMENTS

I would like to thank a few people who have helped me through the duration of my graduate studies at Missouri State University. Firstly I would like to thank my advisor Dr. Robert Pavlowsky who was extremely helpful and supportive in my research, as well as being responsible for organizing the trip to Jamaica which allowed for this research to be conducted. I would also like to thank my other committee members Dr. Tim Brock, Dr. Terrel Gallaway and Linnea Iantria for their advice, knowledge and expertise. I am very grateful of all the time, effort and help that each of these members gave me and this thesis would not have been possible without them.

I would also like to thank the Graduate College for the funding which allowed for the trip to Jamaica to be possible. And of course, a big thank you goes to the members of Bluefields Bay who welcomed us in to their community and allowed us to gather information from them which was critical for the development of this thesis.

I am also very thankful for the resources that the Geography, Geology and Planning department provided and which I used throughout the completion of this thesis. Thanks also go to OEWRI who provided some important resources and information. Finally, I must thank my friends and family for all of their support, patience and belief in me as I worked on my thesis.

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CHAPTER 1: INTRODUCTION

The tourism industry has become a global financial power, achieving a planetary presence unequalled by many other economic sectors (Hall and Page, 2002). Data from the World Travel and Tourism Council (WTCC) shows that the travel and tourism industry has constituted between eight and ten percent of the global Gross Domestic Product (GDP) since 1990 and this is projected to continue until 2020 (Figure 1). As well as this, their data shows that the travel and tourism industry supports between eight and ten percent of employment worldwide, with this figure also projected to continue to 2020 (WTTC, 2014).

But as tourism has grown, so have the criticisms of its environmental, economic, cultural and political consequences (Cater and Goodall, 1992). Some of these consequences include waste discharge outflow of toxic and human waste into rivers and seas, deforestation, desertification and degradation of land resources, leakage of profits from the locals to international investors and a decrease in the sense of local community. This shows that tourism can no longer be considered solely in terms of economic development when there are also consequences for the environment and society. To offset these problems, it is important to address the limitations to tourism development by creating balanced strategies where economic benefits are maximized and the negative consequences of resource waste and degradation are minimized (Cater and Goodall, 1992).

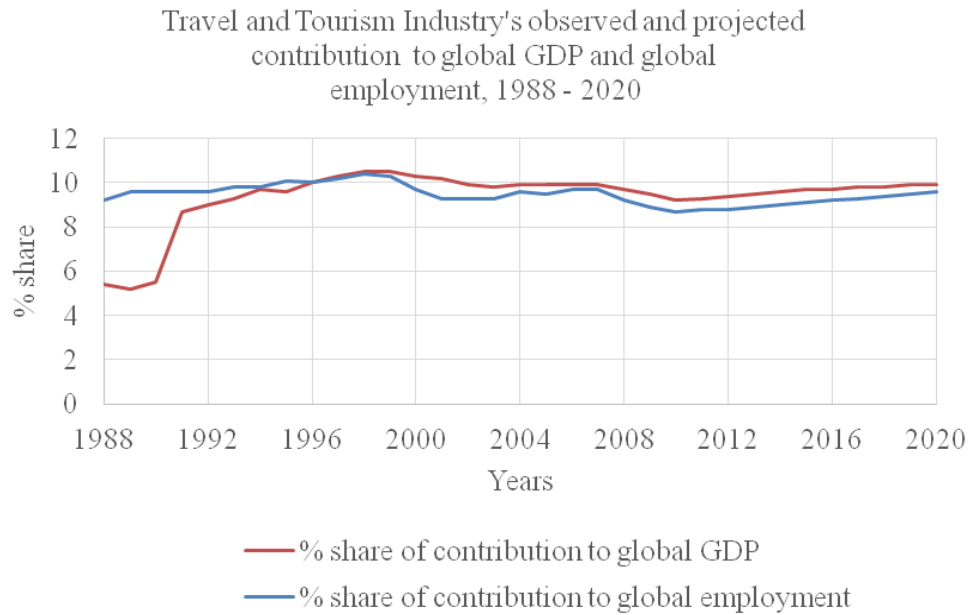


Figure 1. Line graphs showing the observed and projected contributions of the travel and tourism industry to global GDP and global employment (WTTC, 2014).

Tourism in the Caribbean

Tourism is a worldwide phenomenon, but is usually examined on a regional or local scale. This research is therefore going to focus on creating balanced strategies for the small coastal community of Bluefields Bay in southwest Jamaica which lies within the Caribbean region. It is important, however, to first understand the impact of tourism in the Caribbean region and then focus in on Jamaica.

The Caribbean is a fascinating and unique region described as an archipelago of sunny, tropical islands naturally decorated with exotic flora and fauna, surrounded by blue sea water and gentle breezes. This is the general impression of the Caribbean in the minds of most visitors (Jayawardena, 2002). The attractions associated with this region indicate why so many people want to visit it (Table 1).

Table 1. Tourist stop-over arrivals in 2004 and 2014 in the Caribbean countries (Caribbean Tourism Organization, 2014).

Destination	Tourist Arrivals in 2004	Tourist Arrivals in 2014	% change from 2004 - 2014
Anguilla	53,987	62,353	15.49
Antigua and Barbuda	245,797	223,216	-9.19
Aruba	728,157	962,228	32.15
Bahamas	1,450,043	924,898	-36.22
Barbados	551,502	412,508	-25.20
Belize	230,831	266,105	15.28
Bermuda	271,607	197,643	-27.23
British Virgin Islands	304,518	312,304	2.56
Cayman Islands	259,929	312,542	20.24
Cuba	2,048,572	2,669,768	30.32
Curacao	223,439	407,375	82.32
Dominica	80,087	68,791	-14.10
Dominican Republic	3,443,205	4,607,047	33.80
Grenada	133,865	77,839	-41.85
Haiti	96,439	114,501	18.73
Jamaica	1,414,786	1,867,052	31.97
Martinique	470,891	415,614	-11.74
Montserrat	10,138	6,293	-37.93
Puerto Rico	1,411,910	1,291,655	-8.52
St. Lucia	298,431	304,748	2.12
St. Maarten	475,031	377,341	-20.56
St. Vincent and the Grenadines	86,727	56,581	-34.76
Suriname	137,808	114,544	-16.88
Turks and Caicos Islands	173,027	199,347	15.21
U.S. Virgin Islands	658,638	601,749	-8.64
Total	15,259,365	16,854,042	10.45

Tourism Impacts in the Caribbean. The Caribbean has long been regarded as one of the world’s premier travel destinations. While tourism in the Caribbean is by no means recent, periods of economic instability in many island states in the region have effectively enhanced the relative importance of tourism as an alternative economic development strategy (Payne and Sutton, 2001). The recent impacts of tourism in relation to employment and Gross Domestic Product (GDP) in the Caribbean from the year 2004 and up to 2014 are shown in tables 2 and 3.

Table 2. The percentage contribution of the travel and tourism industry to total GDP, including the Caribbean, Jamaica and the top five and bottom five countries in terms of percentage change from 2004 – 2014 (World Travel and Tourism Council, 2014).

Country	2004	2006	2008	2010	2012	2014
Caribbean	15.1	14.4	13.8	13.1	13.8	14.2
Jamaica	28.6	28.6	25.9	27.4	25.4	26.1
Anguilla	45.9	47.9	41.1	50.7	56	59.6
Antigua and Barbuda	65.5	59.3	66.4	68.2	64.4	64
Aruba	56.7	59.5	63.8	79.3	82.8	86.8
Bahamas	42.1	41.4	40.6	44.3	47.2	48
Cayman Islands	29.2	20.1	19.9	21.3	24.9	26.1
Dominica	24.5	27.3	25	30.1	34.4	31.9
Dominican Republic	22	18.2	16.2	14.9	14.5	15
Former Netherlands Antilles	39.8	38.4	37.5	34.1	45	47.6
St Kitts	30.4	33.5	25.2	20.3	21.9	23.4
St Lucia	53.3	45.3	38.9	34.4	38.2	39.6

Table 3. The percentage contribution of the travel and tourism industry to total employment, including the Caribbean, Jamaica and the top five and bottom five countries in terms of percentage change from 2004 – 2014 (World Travel and Tourism Council, 2014).

Country	2004	2006	2008	2010	2012	2014
Caribbean	13.8	12.7	12.4	10.8	11.2	11.4
Jamaica	26.3	26.2	23.4	25.3	23.6	23.7
Anguilla	59.6	63	51.9	63.9	57.3	61.7
Antigua and Barbuda	69.5	63.8	70.5	64.5	59.7	58.2
Aruba	61.4	63.2	68.1	80.3	84.7	89.1
Bahamas	58.9	52.6	50.9	51.9	55.8	56.8
Cayman Islands	32.2	21.8	21	22.7	26.8	28
Dominica	22.5	25.2	23	27.7	32	29
Dominican Republic	20.1	16.6	14.7	13.4	13.5	13.8
Former Netherlands Antilles	34.2	32.6	32.8	28.9	37.5	38.8
Grenada	17.5	16.5	18.7	18.6	18.6	19.3
St Kitts	29.8	32.6	24.1	20.2	20.8	22.3
St Lucia	55	46.4	41.6	37.4	41.5	43

The percentage changes which are shown in these tables help to quantify the importance of the presence of the tourism industry to the economy of the Caribbean. Although some of the percentage changes show a decrease in either the contribution to the total GDP or total employment, the percentages are still an indicator of the significance of the travel and tourism industry to the countries within the Caribbean region. For example, even though the percentage contribution of the travel and tourism industry in Antigua and Barbuda has decreased from 69.5% in 2004 to 58.2% in 2014, the fact that tourism still accounts for 58.2% of total employment shows that the tourism industry is something which needs to be analyzed and managed correctly.

Tourism in Jamaica. Jamaica is one of the Caribbean islands which are part of the Greater Antilles group of islands (composed of Cuba, the Cayman Islands, the Dominican Republic, Haiti and Puerto Rico). Tourism is an important part of the Jamaican economy: the total contribution to GDP in 2014 was 26.1% (Table 2) and the total contribution to employment in 2014 was 23.7% (Table 3) (WTTC, 2014). In addition, the raw number of tourists arriving in Jamaica in 2004 was 1,414,786 and in 2014, the number of arrivals had increased to 1,867,052 which represents a 31.97% increase over the ten year period (Table 1). The economic benefits are evident from the statistics that are available. However, social benefits have also improved. For example in Negril, on Jamaica's north coast, the introduction of tourism to the once sleepy backwater village has drastically improved the inhabitants' quality of life. They now have electricity, telephones, a modern shopping area, an airport, main roads, a bank and a clinic (Henry, 1998).

Types of Tourism in the Caribbean

The definition by Jayawardena (2002) showed that tourists have an idea in their minds about what to expect in the Caribbean and this is mostly due to the natural and physical characteristics. The island geography and the marine environment are very appealing to tourists and as a result of this, there are several different types of tourism which are traditionally associated with the Caribbean region including mass, island, marine and cruise tourism.

Mass Tourism. This type of tourism is generally associated with three different elements. First and foremost, it is associated with democratization of leisure and the

extension of tourism to all sectors of society. Secondly, mass tourism is associated with a mode of tourism that emphasizes economies of scale. It involves the industrialization of leisure, large replication of standardized products, the reduction of costs, and the promotion of mass consumption and spatial and temporal concentration. Finally, mass tourism is associated with a particular tourist sensibility that emphasizes a warm climate, coastal pleasures, freedom of the regulated world, a relaxation, and a party atmosphere (Crang, Pons and Travlou, 2009). However, increased focus on environmental and socio-cultural issues and on equitable outcomes mean that fears about the economic vitality of mass tourism are becoming especially prominent (Bramwell, 2004).

Island Tourism. Tourism development on islands has increased over time and islands are popular tourist destination choices. Their appeal may relate to the very feeling of separateness and difference, caused in part by their being physically separate, and perhaps therefore different from adjoining main-lands. Where such physical separateness is accompanied by political separateness, the appeal can be expected to increase, and given people's desires for the different while in pursuit of leisure, different climates, physical environments and culture can all be expected to further the attractiveness of islands as tourism destinations (Butler, 1993).

Despite the importance of tourism to islands, there are many negative factors about island tourism to be considered. The influx of large numbers of tourists to an island destination is likely to have a more profound effect on the destination in terms of cultural, social and environmental effects because of the destination's small scale. The small scale of an island's physical resources means that the island is far more susceptible to the negative effects of development and greatly increased usage which tourism brings.

Islands can be significantly damaged for generations and perhaps forever by unplanned and uncontrolled tourism because islands simply do not have the depth of resources to allow for recovery (Baum & Conlin, 1995).

Marine Tourism. Marine tourism is defined as including those recreational activities that involve travel away from ones place of residence and which have as their focus the marine environment (waters which are saline and tide affected). Marine-based tourism in general embraces a multiplicity of activities, ranging from swimming and reef walking through the use of recreational crafts to cruising on the high seas (Cater and Cater, 2007). Marine and island tourism go hand in hand in many cases because the presence of a body of water is essential in both of these modes of tourism.

From the definition, it is obvious that there is an increasing amount of marine activities which marine tourists can partake in. However, due to the delicate marine ecosystems, any one marine location is likely to host a variety of frequently incompatible recreational pursuits. Conscientious operators may find their efforts constantly thwarted by the unsustainable activities of tour operators whose motives are more economic based rather than environmentally based (Gray, 1998).

Cruise Tourism. It is clear that the small island states of the Caribbean have a high dependency upon tourism as a tool for development. Cruise tourism, as a sector within tourism, undoubtedly remains a successful and rapidly growing segment of the world travel market (World Tourism Organization, 2001). Because of its proximity to the dominant North American market (Orams, 1999), the Caribbean remains the foremost destination for cruise tourists, claiming more than 45% of the world cruise market (Cruise Lines International Association, 2002). The dependency of many Caribbean small island

states on tourism has given way to huge port developments to accommodate the era of the mega ships and the subsequent increase in visitor numbers (Cartwright and Baird, 1999).

There are several negative impacts of cruise tourism including the changes needed to support the port which include channel dredging and boat anchoring, as well as negative effects from the ship itself like pollution from cruise ship sewage, destruction of coral reefs and water pollution. And an example of the negative economic impacts is seen by the fact that although cruise ship passengers account for roughly 37% of total visitor arrivals in the Caribbean, they are responsible for only 10% of visitor expenditure and therefore cruise tourism is considered unproductive given the environmental, social and economic costs incurred (Jayawardena, 2002).

Despite the negative impacts of cruise tourism, it still remains a popular form of tourism. Table 4 shows the number of stop over tourist arrivals and the number of cruise passenger visitors in 2014. The numbers help to quantify the importance of the cruise tourism to this region. In Jamaica, there were over 1.8 million tourists who stayed over, and in addition to this a further 1.4 million cruise visitors (Caribbean Tourism Organization, 2014). These numbers cannot be overlooked and as a destination, not only does the region need to manage cruise tourism in order to sustain the economic benefits but it must also ensure that the fragile environmental resources it relies upon are managed effectively (Lester and Weeden, 2004).

Table 4. Tourist stop over arrivals and cruise passenger visitors to the Caribbean in 2014 (Caribbean Tourism Organization, 2014).

Destination	Tourist Stop Over Arrivals in 2014	Cruise Passenger Visitors in 2014
Anguilla	62,353	N/A
Antigua and Barbuda	223,216	522,342
Aruba	962,228	584,728
Bahamas	924,898	3,867,574
Barbados	412,508	479,659
Belize	266,105	968,131
Bermuda	197,643	358,640
British Virgin Islands	312,304	301,884
Cayman Islands	312,542	1,609,555
Cuba	2,669,768	N/A
Curacao	407,375	629,145
Dominica	68,791	286,573
Dominican Republic	4,607,047	317,365
Grenada	77,839	235,140
Haiti	114,501	662,403
Jamaica	1,867,052	1,423,797
Martinique	415,614	177,786
Montserrat	6,293	N/A
Puerto Rico	1,291,655	1,154,08
St. Lucia	304,748	641,452
St. Maarten	377,341	1,543,572
St. Vincent and the Grenadines	56,581	69,481
Suriname	114,544	N/A
Turks and Caicos Islands	199,347	971,383
U.S. Virgin Islands	601,749	2,083,890
Total	16,854,042	17,735,654

Tourism Area Life Cycle Model

Each country is at a slightly different level of development and this means that each country will be at a different stage in an economic lifecycle. This principle is also relevant to the tourism industry within different countries; tourism destinations are at different stages of a tourism lifecycle. In order to review a destination's stage in a tourism lifecycle, a well-received model has been adopted by researchers: Butler's Tourism Area Life Cycle (TALC) model. It is now more than three decades since the original TALC article first appeared, and rather surprisingly, the original model is still being cited and used in most tourism research (Cooper, 2011). The TALC's origins stem from the belief that tourist destinations and resorts are essentially products. This refers to the fact that they have been developed and modified to meet the needs of the market (in this case, tourists) in a similar way to the production of other goods and services.

Therefore it appeared reasonable to make the assumption that destinations and resorts would follow a generally similar pattern of development to that of most other products, namely to have a "lifecycle" (Catry and Chevalier, 1974). The purpose of the model was to draw attention to the dynamic nature of destinations and to propose a generalized process of development and potential decline which could be avoided by appropriate interventions: planning, management and development (Butler, 1997). It did this by proposing a common pattern of development of destinations which experience the following stages: exploration, involvement, development, consolidation, stagnation, and then a range of possibilities from rejuvenation to decline. This model can be applied to any destination.

Figure 2 visually shows the TALC model and the changes that occur relative to the relationship between time and number of tourists. The first stage of exploration involves a few visitors arriving at a destination, restricted by lack of access, facilities and local knowledge. As facilities are provided and awareness grows, visitor numbers will increase – this is the involvement stage. Marketing, information dissemination, and further facility provision mean that the area's popularity will grow rapidly. This is the development stage. Eventually, however, the rate of increase in visitor numbers will decline as carrying capacity levels are reached (Butler, 1980). Carrying capacity can be defined as the number of user-unit periods that a recreation or tourist area can provide, without permanent natural or physical deterioration of the area's ability to support recreation, and without appreciable impairment of the visitor's recreational experience (Coccosis and Parparis, 1992). This stage is the consolidation stage. After the carrying capacity has been reached, environmental, economic and social problems are likely to occur. This means that the destination will not be as attractive to visitors anymore and this stage is known as stagnation.

The final stage of the model is the interesting part - where the tourist destination can take one of two routes. The first route is decline: the destination isn't able to compete with other destinations, and the appeal to the destination is reduced due to poor up keeping of facilities. The path that the decline stage will follow will be negative, meaning that the number of visitors will be decreasing. Contrary to the decline route, the second route of the TALC model is called the rejuvenation stage. This involves a change in either the attraction or the target market in an attempt to increase the destination's

appeal again. The route of the rejuvenation stage will be positive whereby the number of visitors will increase if this stage is successful (Butler, 1980).

The TALC model is very useful for tourism planning. Although not every single destination follows this exact pattern, it can be used to give a general idea about which stage a destination is at and what needs to be done in order to keep the destination from entering the consolidation, stagnation or decline stages. Tourist attractions are not infinite and timeless, but should be treated as finite and possibly non-renewable resources and therefore planned accordingly (Butler, 1980).

The lifecycle of tourism destinations can be evaluated in order to preserve or enhance the opportunities and capabilities of future generations to live sustainably (Gibson, Hassan, Holtz, Tansey and Whitelaw, 2005). The observed values and future predictions made by the WTTC show the importance of the tourism industry in terms of economic gains and employment.

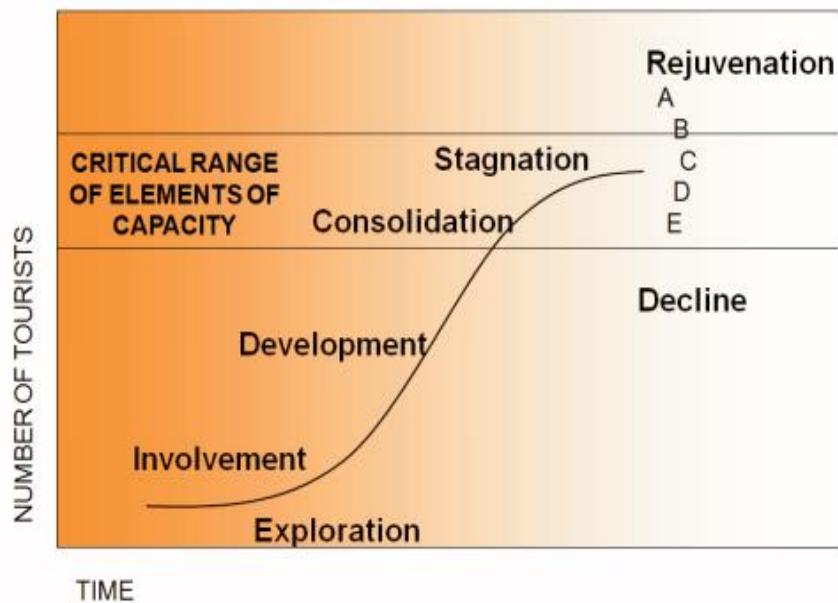


Figure 2. Hypothetical evolution of a tourist area (Butler, 1980).

Sustainable Tourism in the Caribbean

The types of tourism that are popular in the Caribbean show that there is a large reliance on the region's environmental setting and natural resources. However, the resource base upon which all of this economic activity is based on is fragile. Sustaining the tourist sector and the economic benefits it brings thus requires ensuring that the environmental resources sector is managed sustainably (Dixon, Hamilton, Pagiola and Segnestam, 2001). Marine based activities and attractions include scuba diving and snorkeling, fishing, boating, turtle watching, swimming with dolphins and kite surfing. While these activities are appealing to tourists, unregulated growth and poor management techniques have led to a catalogue of environmental destruction which is directly attributed to the growth of the tourism industry and its activities. This catalogue includes erosion of beaches, breakdown of coral reefs, marine and coastal pollution from water sports, the dumping of waste and non-treatment of sewage, sand mining, the destruction of wetlands and salt ponds (Pattullo, 1996).

Defining Sustainable Tourism. As a result of the growing concerns about the consequences of tourism, the last twenty years have seen tremendous efforts by individuals, organizations and governments to implement sustainable tourism ideals and some attempts to evaluate them in practice (Johnston and Twynam, 2008). Sustainable tourism is considered a gentler form of tourism that is generally small in scale, sensitive to cultural and environmental impacts and respects the involvement of local people in policy decisions (McCool and Moisey, 2008). It is defined as applying the logic of tourism development that meet the needs of present visitors, tourism businesses, and host destinations while protecting and, where possible, enhancing the opportunities for the

future. It is envisaged as leading to the management of resources in such a way that social, economic, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems (Middleton, 1998).

Principle based, managerial and scientific approaches to different environments including rural or urban areas, islands, areas with different climates, landscapes and topography, can help to implement sustainable tourism (Payne *et al*, 1999). Principle and science based approaches that vary in management style among destinations are used to implement sustainable tourism. These approaches tackle the need for improved environmental and social outcomes of tourism by setting up frameworks believed to be appropriate to these concerns and then developing plans for participants to follow. The framework and plans are a result of finding indicators based on scientific understanding of ecosystems, responses to stress, assessing baseline conditions and monitoring impacts (Payne *et al*, 1999). Managerial approaches are those in which the individual organization manages its environment through its entire operations. Sustainable tourism is something which can be applied to all types of tourism areas, if the correct planning and management principles are followed.

Principles for Sustainable Tourism. In order for tourism to bring lasting benefits to communities, there must be serious consideration of the complexities within and between human and ecological systems. It is useful to identify a set of guiding principles for sustainability that encapsulate all the theories and concepts in the foregoing discussion, as a means of offering practical guidance for sustainable tourism development. A set of guiding principles will be created for Bluefields Bay. In the article

Sustainability Assessment: Criteria and Processes, Gibson *et al.* (2005) define eight principles:

1. Socio-ecological system integrity: Build human-ecological relations that establish and maintain the long-term integrity of socio-biophysical systems and protect irreplaceable life support functions upon which human as well as ecological well-being depends.
2. Livelihood sufficiency and opportunity: Ensure that everyone and every community has enough for a decent life and opportunities to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.
3. Intragenerational equity: Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity and health, security, social recognition, political influence, etc. between rich and poor.
4. Intergenerational equity: Favor present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably.
5. Resource maintenance and efficiency: Provide a larger base for ensuring sustainable livelihoods for all while reducing threats to the long-term integrity of socio-ecological systems by reducing extractive damage, avoiding waste and cutting overall material and energy use per unit of benefit.
6. Socio-ecological civility and democratic governance: Build the capacity, motivation and habitual inclination of individuals, communities and other collective decision making bodies to apply sustainability principles through more open and better informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary, collective and personal decision making practices.
7. Precaution and adaptation: Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, plan to learn, design for surprise and manage for adaptation.
8. Immediate and long-term integration: Attempt to meet all requirements for sustainability together as a set of interdependent parts, seeking mutually supportive benefits.

TALC Model and Sustainable Tourism. The definition and principles of sustainable tourism emphasize the importance of small scale development which has an awareness of the destination's prominence not just for the present, but also for the future (Middleton, 1998). As a result of this, positioning sustainable tourism in the TALC model is quite difficult. As a greater variety of destinations have appeared, the nature and scale of developments have become less regular and predictable, but destinations are still products and as such subject to the "laws" of product cycles and marketability (Butler, 2004).

Sustainable tourism can therefore be placed in one of two different places on the TALC model (Figure 3). If a tourism destination is in the stagnation stage where the next stage is decline or rejuvenation, sustainable tourism development could be a way to lead to a greater likelihood of rejuvenation, as shown by the path 1 on Figure 3. This would involve a change in either the attraction or the target market in an attempt to increase the destination's appeal again, which is the criteria for this stage in the cycle (Butler, 1980).

On the other hand, sustainable tourism can be placed in the involvement stage which is when facilities are provided, awareness grows and visitor numbers increase in a manageable way and the resulting path of the model will be more gradual. This is shown as path 2 on Figure 3 and with this level of growth, the number of visitors will be at a more controlled level over the course of time. The development stage is typically when mass tourism occurs and the subsequent problems associated with that take place (Bramwell, 2004). By encouraging sustainable tourism development at an early stage in the tourism life cycle, the later stages in the cycle can be avoided. The knock on effects from this would be a controlled number of visitors, not exceeding the carrying capacity of

the destination and the protection and enhancement of opportunities for the future. This shows the importance of the assessment and the planning stage of tourism destinations.

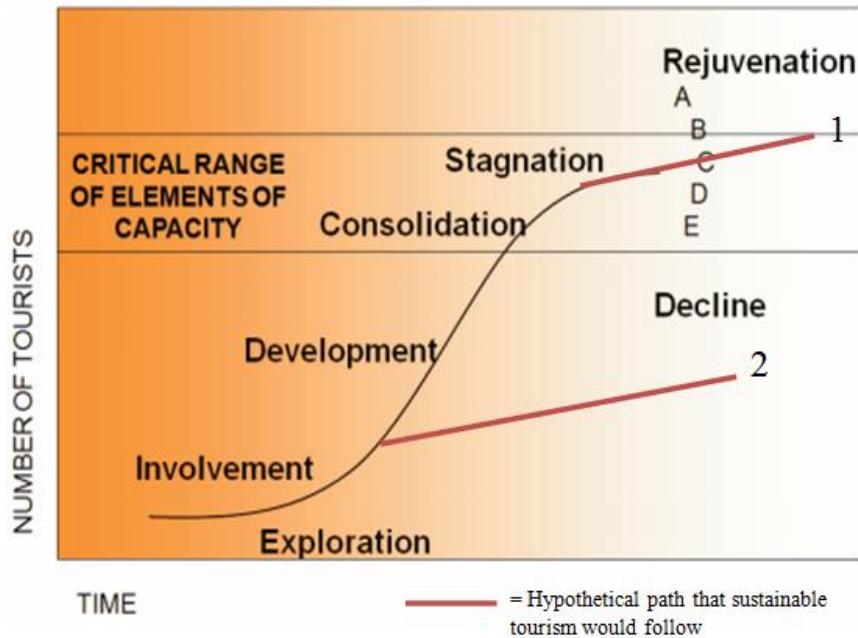


Figure 3. Modified TALC model with hypothetical paths that sustainable tourism might follow.

Sustainable Tourism in Jamaica. Both natural and anthropogenic changes have occurred in Jamaica, most notably over the last few decades, meaning that attention needs to be paid to these changes and how they will affect the tourism industry. Natural changes include marine pollution which is indicated by 31% of Jamaica’s coral reefs being designated as at risk (Burke and Maidens, 2004). Anthropogenic changes include the effects of mass tourism and an increase in cruise tourism to the island. An example of how this affects the natural resources is a lack of the proper waste reception facilities at ports and a lack of funds to invest in building any. Wind and waves then carry the waste,

especially paper and foam, across sea boundaries to other areas and islands. This means that the amount of marine waste and pollution will only increase as the tourism industry continues to grow (Villasol and Beltran, 2004). With regard to the effects of mass tourism, another anthropogenic change includes the development of extensive road networks, increasing habitat loss to tarmac and augmenting habitat fragmentation (Davenport and Davenport, 2006).

Responses to the Changes in Jamaica. The increase in the environmental problems meant that Jamaica began to look at conservation programs which would help to protect its natural resources. Because the island's natural resources are such an integral part of the country's tourism industry, the conservation programs were deemed necessary. The National Physical Plan of Jamaica (1970-1990) stated a need for an "integrated regional system of a wide range of parks, recreation and conservation areas reflecting Jamaica's social needs and natural environment" (NRCD and Field, 1987).

In response to this plan, a number of activities over the last decades have promoted public awareness like the recent "A Climate Change Symposium" where participants were informed about how climate change could potentially affect energy, water resources, coastal resources, and biodiversity (Government of Jamaica (GoJ), 2011). On a government level, the Fisheries Division of the Ministry of Agriculture and Lands has made a number of contributions to the local fishing industry under the enactment of the Fisheries Act (1976) in recognition of the fact that fisheries provide the means by which thousands of Jamaicans make a living (Ministry of Agriculture and Lands Fisheries Division, 2008). Since 1992, Jamaica began enforcing marine protected

areas across the island, with the Montego Bay Marine Park being the first introduced MPA. More recent government action formed several more MPAs around Jamaica.

Marine Protected Areas

Tourism in the Caribbean relies heavily on the region's environmental setting and natural resources. However, the resource base upon which all of this economic activity is based on is fragile. Sustaining the tourist sector and the economic benefits it brings thus requires ensuring that the environmental resources sector is managed sustainably (Dixon *et al*, 2001) and that the life cycle of the destination will continue rather than enter the decline or stagnation phase of the TALC model.

Marine protected areas (MPAs) are one way in which an attempt has been made to address the need to protect the marine environment and biodiversity which is so important to the tourism industry in the Caribbean. MPAs are clearly defined geographic spaces, recognized, dictated and managed through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values (International Union for Conservation of Nature and Natural Resources and World Commission on Protected Areas (IUCN and WCPA), 2008).

Today, the ability to robustly and quantitatively assess marine ecosystems and their associated services, and appraise the scope, nature and projected effectiveness of management actions in a changing context, is of prime importance. Drawing up methods to protect and sustainably utilize marine biodiversity represents a complex issue of collective choices to be made, requiring consideration of geographic (land-sea interfaces), political (conservation, exploitation) and economic (fisheries, tourism, intellectual

property) aspects. It is thus becoming increasingly important to clarify, quantify and communicate across social, academic and industrial sectors, these stakes, values, priorities and conflicting demands (Gouilletquer, Gros, Boeuf and Weber, 2014).

Designation of MPAs. An MPA may be designated for any one or a combination of reasons (Salm and Clark, 2000):

1. Best example of an important ecosystem or habitat;
2. Need for sustainability of fisheries such as through “no take” zones;
3. Protect high species diversity;
4. Existing or potential location of intense biological activity;
5. Contains a natural wonder or tourist attraction;
6. Provides a critical habitat for particular species or groups of species;
7. Has special cultural values (such as historical, cultural or recreational);
8. Protects the coastline from storms;
9. Facilitates necessary research or determination of “natural” baseline conditions.

MPAs and Sustainable Tourism. MPAs have a variety of objectives, including both ecological or conservation objectives and human objectives. These objectives are closely linked to the principles of sustainable tourism (Gibson *et al.*, 2005) and they help to satisfy some of these requirements. This suggests that the overlap between MPA objectives and the principles of sustainable tourism justifies an investigation as to whether MPAs can act as a driver of sustainable tourism.

Ecological objectives include plans to ensure long term viability and maintain the genetic diversity of marine species and systems; protect depleted, threatened, rare or endangered species; preserve habitats considered critical for the survival and/or lifecycles

of species, including economically important species; to prevent outside activities from detrimentally affecting the marine protected areas (Protect Planet Ocean, 2010).

Human objectives which are intended to be met through the introduction of a MPA to a specific area are to provide for the continued welfare of people affected by the creation of MPAs; preserve, protect and manage historical and cultural sites and natural aesthetic values of marine and estuarine areas for present and future generations; facilitate the interpretation of marine and estuarine systems for the purposes of conservation, education and tourism; accommodate with appropriate management systems a broad spectrum of human activities compatible with the primary goal in marine and estuarine settings; provide research and training, and for monitoring the environmental effect of human activities, including the direct and indirect effects of development and adjacent land use practices (Protect Planet Ocean, 2010).

Marine Conditions in the Caribbean

The rapid growth of coastal human populations in Caribbean Sea nations has caused the decline of coastal marine environments as demands on marine resources exceed sustainable levels. The unique characteristics and biodiversity in the Caribbean are the region's most important marine resource (Roberts, McClean, Veron, Hawkins, Allen, McAllister, Mittermeier, Schueler, Spalding, Wells, Vynne and Werner, 2002). Coastal marine habitats like mangroves, sea-grass beds, and coral reefs are important commercial and artisanal fishing grounds (Munro, 1983). Approximately 54% of fish stocks in the Caribbean and Western Atlantic were categorized as overexploited with another 40% classified as fully exploited by 2009 (FAO, 2011). The Caribbean contains

approximately 7% of the world's coral reefs and the net annual benefits provided by the Caribbean's coral reefs are between US\$3.1 billion and US\$4.6 billion (Burke and Maidens, 2004; Villasol and Beltran, 2004). Yet 64% of the Caribbean's coral reefs are threatened by human activities such as excess sedimentation by deforestation, nutrient loading from raw sewage, and overfishing (Burke and Maidens, 2004). Figure 4 shows the reefs at risk and the various levels of threat at each location.

The degradation of seagrass beds, coral reefs, fish populations, and mangroves poses a potential financial loss of millions of dollars because tourism and fishing make up a significant portion of the regional economy (Villasol and Beltran, 2004). This emphasizes the need for action to be taken in order to prevent the marine conditions getting any worse and the Caribbean islands potentially losing their most important possessions: marine and natural resources.



Figure 4. Reefs at risk in the Atlantic/Caribbean (World Resources Institute, 2011).

MPAs in the Caribbean. The growing number of environmental changes affecting the marine resources in the Caribbean forced authorities to act. The Caribbean Environmental Program of the United Nations Environment Program (CEP-UNEP) and the Specially Protected Area and Wildlife (SPA) Protocol were a part of the Cartagena Convention which was held in 1997. During this convention, action plans for MPAs in the Caribbean were made. The main outcomes of this convention were the introduction of CaMPAM (Caribbean Marine Protected Areas Management) and the Caribbean Challenge (CaMPAM, 2010).

CaMPAM was created in 1997 and is an initiative to bring together MPA researchers, administrators, managers, and educators from governmental entities and non-governmental organizations as well as the private sector in an inclusive network to exchange ideas and lessons learned through a variety of mechanisms. Because the introduction of MPAs has become increasingly popular in the wider Caribbean region as a tool to improve marine management, conserve marine biodiversity, address overfishing impacts, decrease user conflicts, and provide economic alternatives to local coastal communities, a management authority was necessary. By having CaMPAM in place, substantial knowledge has been gained on optimal site selection and design, successful outreach approaches, effective management strategies, and appropriate methods to evaluate their effectiveness. Difficulties in exchanging information on lessons learned continue to constrain informed decision making due to the geographic, socioeconomic, and cultural complexities of the Caribbean region. At the same time, communication among professionals has become progressively more vital given the increasing scientific interest in the examination of biophysical connectivity across the region. As MPAs

continue to be proposed and implemented, the efficient exchange of information is now more critical than ever. CaMPAM has a capacity building program which includes training and communication tools to expedite knowledge and lessons learned transfer across the region (CaMPAM, 2010)

The Caribbean Challenge is a large-scale initiative advocated by a number of governments and regional and international organizations which aims to protect 20% of the marine and coastal habitats of Caribbean countries associated with the initiative by 2020, including The Bahamas, the Dominican Republic, Jamaica, Saint Vincent and the Grenadines, Saint Lucia, Grenada, Antigua and Barbuda as well as Saint Kitts and Nevis. The Nature Conservancy has invested 20 million dollars in return for a commitment from Caribbean countries to support and manage new and existing protected areas. The main activities of the Caribbean Challenge include: helping countries to develop their national MPA networks and supporting, when conditions allow, the creation of biologically-representative networks and/or sub-regional and cross-border corridors; improving capacities for a more efficient MPA management, notably through targeted training courses, guidance and onsite visits looking at the needs and problems common to all MPAs in the Caribbean; organizing coordination meetings in order to agree on common approaches to adopt for MPA elaboration and management, including those concerning MPA networks; setting up a regular regional liaison system, including communication and publication tools; harmonizing monitoring as well as ecological and socioeconomic MPA efficiency indicators (CaMPAM, 2010).

MPAs in Jamaica. As a part of the Caribbean, Jamaica falls under the initiatives adopted in this region in terms of the need for MPAs. The state of the marine area

surrounding Jamaica emphasizes the need for MPAs in Jamaica. The coral reefs around the island are festooned with traps, hooks, and nets while spear fishers hunt all day up to depths of fifteen meters. Upon diving these reefs, awareness is gained about the lack of fish bigger than fifteen centimeters and the abundance of tiny fish – most of which have very little commercial interest (Roberts, Halpern, Palumbi and Warner, 2001).

The location of the fish sanctuaries are shown in Figure 5 and the MPAs which exist in Jamaica are shown in Table 5. The first MPA to be formed in Jamaica was the Bogue Lagoon fish sanctuary in 1979. The majority of the other MPAs have been formed since the mid-1990s, with nine MPAs being formed since 2009. This shows that over the course of time, more attention is being paid to the need for protection of marine areas and consequently action has been taken. The size of the MPAs varies from less than two square kilometers for certain fish sanctuaries, to over 1800 square kilometers for marine parks.



Figure 5. Jamaica fish sanctuary locations (C-Fish, 2014).

Table 5. Marine Protected Areas in Jamaica (Gulf and Caribbean Fisheries Institute, 2010; Ministry of Agriculture and Fisheries (MoAF), 2014).

Marine Protected Area	Specific Type of MPA	Year of implementation
Bluefields Bay	Fish sanctuary	2009
Bogue Islands Lagoon	Fish Sanctuary	1979
Discovery Bay	Fish sanctuary	2009
Galleon St. Elizabeth	Fish sanctuary	2009
Montego Bay	Marine Park	1992
Montego Bay Point	Fish sanctuary	2009
Negril	Marine Park	1998
Ocho Rios	Marine Park	1996
Oracabessa	Fish sanctuary	2010
Orange Bay	Fish sanctuary	2009
Palisadoes	Marine Park	1998
Palisadoes Port Royal	Wetlands of International Importance	2005
Portland Bright	Marine Park	1999
Salt Harbor	Fish sanctuary	2009
Sandals Boscobel	Fish sanctuary	2010
Sandals Whitehouse	Fish sanctuary	2010
Three Bay Area	Fish sanctuary	1999

Bluefields Bay MPA

Bluefields Bay is located in Westmoreland on the southwest coast of Jamaica and was considered - until the second half of the twentieth century - a fisher's haven. The bay provided excellent environmental conditions, including coral reefs, grass beds and mangroves which made the bay a productive nursery ground for the fish. The abundance of food and shelter provided by the mangroves, rivers and streams made the bay an ideal place for fish to deposit their eggs, which developed and led to an abundance of reef fish (Bluefields Bay Friendly Fisherman's Society (BBFFS), 2012).

However, since the 1960s, the destruction of mangroves and fish habitats and the introduction of seine net, small mesh wire and spear fishing have led to a poor quality and quantity of fish. More recently, in 2004 Hurricane Ivan hit the island of Jamaica and this led to many fishers losing their traps and essentially their livelihoods. This sparked a need for action to be taken in response to the harmful consequences of current fishing, developmental practices and natural effects. The Bluefields Bay Friendly Fisherman's Society (BBFFS) formed in 2006 with the goal of educating its members in sustainable fishing practices, developing employment alternatives that will enhance the quality of life and preserve the natural environment of Bluefields (BBFFS, 2012).

The BBFFS was very influential in the process of the adoption of the Bluefields Bay fish sanctuary, which was eventually put in place in March 2009 by the Minister of Agriculture and Fisheries and with overwhelming support from the local community (C-Fish, 2014). It is anticipated that along with the efforts of the BBFFS, the continued protection and management of the fish sanctuary will help to reverse the decline in fish populations, protect the biodiversity of the reef, and preserve the natural wonder of the bay that makes it a desirable tourist destination. The tourism industry is an alternative possibility to improve the economic development in Bluefields Bay. The switch from a fishing town to a different type of town is something which is still a work in progress in Bluefields Bay. The idea of sustainable tourism development is something which definitely needs to be explored.



Figure 6. Bluefields Bay Fish Sanctuary sign at the entrance to the sanctuary (BBFFS, 2012).

Research Statement and Objectives

Improvements in environmental resources management and sustainable tourism activities are needed in Jamaica to provide economic stability and opportunities for coastal communities. The growth of the concept of sustainable tourism is evident and the introduction of MPAs in Jamaica marks a significant step towards the notion of sustainability. The changes that MPAs bring and the benefits of MPAs are going to be explored in more detail in the following sections of this thesis with an emphasis on the MPA in Bluefields Bay in southwest Jamaica. This thesis will provide an investigation into how MPAs can contribute to sustainable tourism in Jamaica. It is clear from this introduction that tourism is a critically important component of the economy in Jamaica and the Caribbean islands in general. Therefore, it is important to combine two of the

most prominent features of these geographic locations: the tourism industry and the natural environmental resources in an attempt to provide support for local communities.

The purpose of this study is to conduct a sustainable tourism assessment for a marine protected area in southwest Jamaica. Bluefields Bay is important to study in terms of sustainable tourism because of the protection of the natural resource that is already in place (the MPA) and the attraction to Jamaica that is already visible by the numbers of tourists that already visit. By looking at these themes in more detail, the assessment will show whether sustainable tourism is a potential and realistic possibility for Bluefields Bay. To accomplish this purpose, this study will address four objectives:

1. *Identify tourism attractions and facilities already in place to evaluate the gaps in tourist businesses.*

Looking at what attractions and facilities are already in place in Bluefield Bay will give a context for the current tourism situation. This will allow realistic suggestions to be made regarding how the resources in Bluefields Bay can be used to develop sustainable tourism.

2. *Compare Bluefields Bay's MPA tourism situation with other sustainable marine tourism areas to develop a "toolbox" or list of proven alternatives for new opportunities and practices.*

Measuring the sustainability of a destination is a somewhat hypothetical concept.

There is a growing literature on the concept of sustainability indicators with respect to tourism. These indicators include measuring the effectiveness of a particular management practice such as a development plan or providing leading information on changes that may occur in a later time (McCool and Moisey, 2008). By reviewing both successful and unsuccessful case studies of sustainable

tourism, practices to follow and practices to avoid will be discovered within the context of the physical and human properties of Bluefields Bay.

3. *Assess the attitudes and perceptions of local community stakeholders on the role of the Bluefields Bay MPA as a benefit to the community and as a potential driver of tourism for the Bluefields Bay area.*

The integration of community stakeholders is integral to a successful assessment or plan. The World Commission on Protected Areas (WCPA) (2002) states that successful planning generally involves all groups in such a way that each can contribute constructively to the various components of the process, and thus feel “ownership” of the plan. Further, each participation program should be designed to meet the specific needs of the situation, rather than imposing a pre-determined methodology that may have worked well in other situations (WCPA, 2002). By completing this objective, a good understanding of the thoughts of the community will enable realistic recommendations to be made about the prospect of sustainable tourism development in Bluefields Bay.

4. *Develop recommendations for sustainable tourism opportunities that benefit both the environment and the community in Bluefields Bay.*

The previous three objectives will provide the information needed in order to be able to select recommendations which are most applicable to Bluefields Bay. The principles of sustainable tourism need to be met by these recommendations (Middleton, 1998; Gibson *et al*, 2005). They need to be realistic for the situation, yet provide some ideas for the community in a three phase approach, phase one being basic changes, phase two being intermediate changes and phase three being advanced changes.

Several groups can benefit from this study. The community of Bluefields Bay will have the opportunity to see how the marine protected area can be managed to benefit them economically and socially. The stakeholders in Bluefields Bay, including the fishermen, the Bluefields Bay Environmental Protection group, local business owners, residents and tourists, will have a greater awareness of the potential that the marine sanctuary can bring in terms of sustainable tourism benefits.

The implementation of the MPA sparked a change in the community of Bluefields Bay. The MPA should be considered a positive feature of Bluefields Bay and one which can be used to promote the diversification of the economy. Sustainable tourism is a way in which the community of Bluefields Bay has the opportunity to control its own destiny. If there is evidence that the area has a sustainable local economy in place as a result of sustainable tourism practices, then the chances of negative methods of tourism development will be reduced. The remainder of this research will attempt to show that sustainable tourism is a realistic and promising idea for Bluefields Bay.

CHAPTER 2: STUDY AREA

The focus of this thesis is on a marine protected area and the potential that this can have for sustainable tourism development. It is important to look at the study area in terms of the marine conditions and the physical and human properties that make up the study area. First an analysis of the properties of the island of Jamaica will be done, and then a closer look at the properties of Bluefields Bay will be done.

Jamaica

Marine Conditions in Jamaica. The reefs at risk threat around the island of Jamaica as a result of marine based threats (Figure 7) largely fall in the medium to high index (World Resources Institute, 2011). As well as this, the reefs at risk correlates closely to the overfishing threat (Figure 8). These observations were of concern to the Ministry of Agriculture and Fisheries (MoAF) not only because of the decrease in quality and quantity of the fish, but also because they cause problems from an economic aspect as well. Fishing accounts for 23000-40000 jobs (depending on the season) and a capture production of \$48.1million (Carr and Heyman, 2009). In response to these concerns, marine protected areas were created to protect essential fish habitats like seagrass beds, mangroves and coral reefs. Protecting these marine environments has the benefit of preserving biodiversity and creating a spillover of fish into areas where fishing is allowed (Roberts *et al.*, 2001).

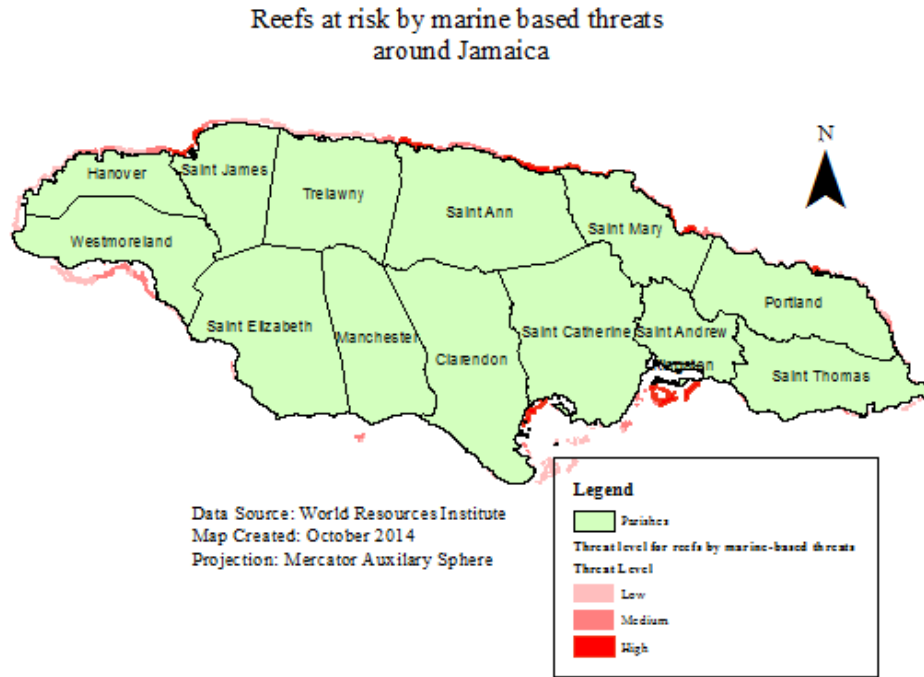


Figure 7. Reefs at risk by marine based threats around Jamaica (World Resources Institute, 2011).

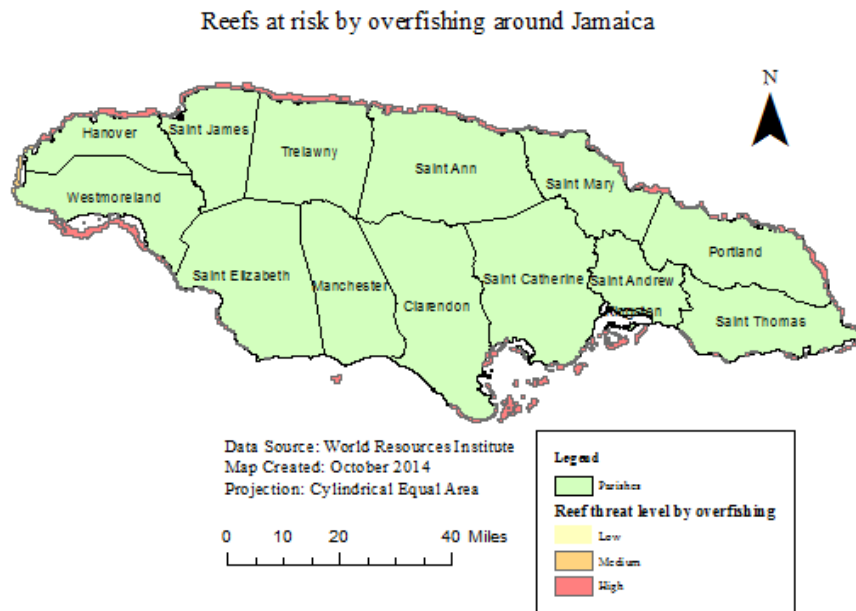


Figure 8. Reefs at risk by overfishing around Jamaica (World Resources Institute, 2011).

Geography. Jamaica is one of the Greater Antilles islands which are located in the northern Caribbean Sea. The Greater Antilles is composed of Cuba, the Cayman Islands, the Dominican Republic, Haiti and Puerto Rico and Jamaica is the third largest of those islands. The island is approximately 230 km long and 80 km wide with a total area of 10,990 km² and it is separated from the rest of the Greater Antilles by the Cayman Trench (Ahmad, Scatena and Gupta, 1993). Jamaica's coastline is 1,022 km long and the island is surrounded by the warm waters of the Caribbean Sea and is located in the tropics at a latitude of 18° North and 75° West, which is about 4.5° south of the Tropic of Cancer. Jamaica falls in the Eastern Standard time zone (Meteorological Service of Jamaica, 2002).

Geology. The island of Jamaica is situated on the northern margin of the Caribbean plate as it abuts against the North American plate. The margin between these two plates is the tectonically active east-west trending Cayman Trough. The Cayman Trough, which extends eastwards from the Gulf of Honduras to the east of Hispaniola, lies immediately to the north and separates Jamaica from Cuba. Jamaica is an emergent part of the Nicaraguan rise, which is a broad dominantly submerged belt of crustal thickening extending from Honduras to Jamaica. Jamaica, therefore, lies at the junction between two plates, the plate of the thickened crust of the Nicaraguan Rise (Caribbean plate) abutting against the extending oceanic crust of the Cayman Trough (Mines and Geology Division of Jamaica, 2014).

As a result of the formation of the island, Jamaica is essentially mountainous and hilly. Two thirds of its area is made up of highly dissected limestone plateaus, varying in height from 1000-3000 feet above sea level. The limestone plateau means that karst

formations dominate the islands. Karst topography is a landscape that is shaped by the dissolution of underlying layers of carbonate rock. The karstlands of Jamaica are underlain by layers of limestone that have chemically eroded over time, forming underground drainage that diverts surface water flows (Sweeting, 1958). Hazards including drought and flooding associated with karst landscapes become more prevalent with increasing development and urbanization (Day, 2007). This has connections to the tourism industry because of the development and the increased amount of impervious surfaces that an increase in the tourism infrastructure will bring about.

Climate. Jamaica's location in the Caribbean Sea at a latitude of 18° North explains the tropical maritime climate that exists there, as it lies in the northern boundary of the tropics (Whitbeck, 1932). The mean annual temperature range is 4 degrees Celsius, with a monthly low mean of 26 degrees Celsius in February and a monthly high mean of 30 degrees Celsius in August and with every increase in altitude of 300 meters, the temperature reduces by 2 degrees Celsius (Water Resources Authority, 1980).

Precipitation in Jamaica varies both seasonally and spatially, with a long term mean annual rainfall of 1,981mm. The heaviest rainfall is concentrated over the Blue Mountain range which is located in the east region of the island. Kingston and much of the southern coast of Jamaica is located in the rain shadow of the Blue Mountains and receives much less rain than the northern coast. The parish of Westmoreland receives approximately 2250 mm of precipitation (Figure 9). The annual pattern of rainfall across the whole island shows a bi-modal pattern, with the primary maximum in October and the secondary maximum in May, with the drier months typically being January, February, March and July (Figure 10) (Water Resources Authority, 1980).

The important climatic influences that affect the island of Jamaica are the Northeast Trade Winds, the range of mountains which runs east-southeast to west-southwest along the center of the island, the warm waters of the Caribbean and weather systems such as upper and low level pressure centers, troughs and cold fronts. The cold fronts are usually weak after migrating from North America, and typically occur from October to April, while the tropical weather occurs approximately from April to December (Meteorological Services of Jamaica, 2002).

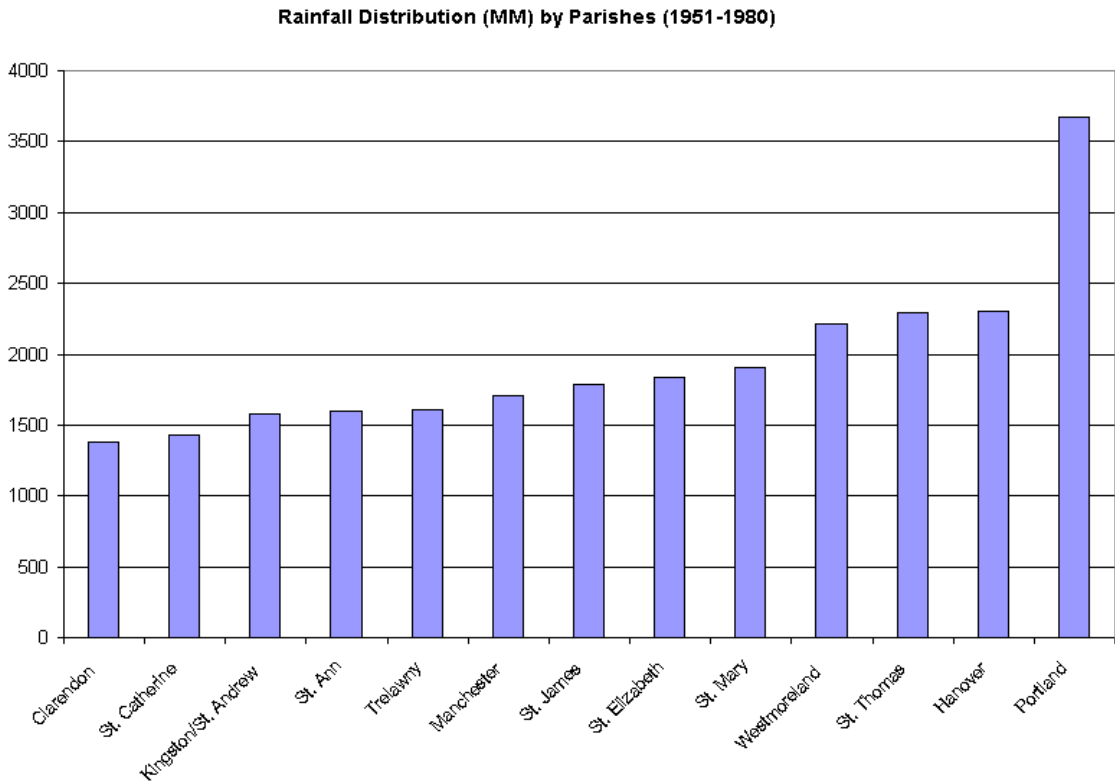


Figure 9. Average yearly rainfall distribution by parishes in Jamaica (Meteorological Service of Jamaica, 2002).

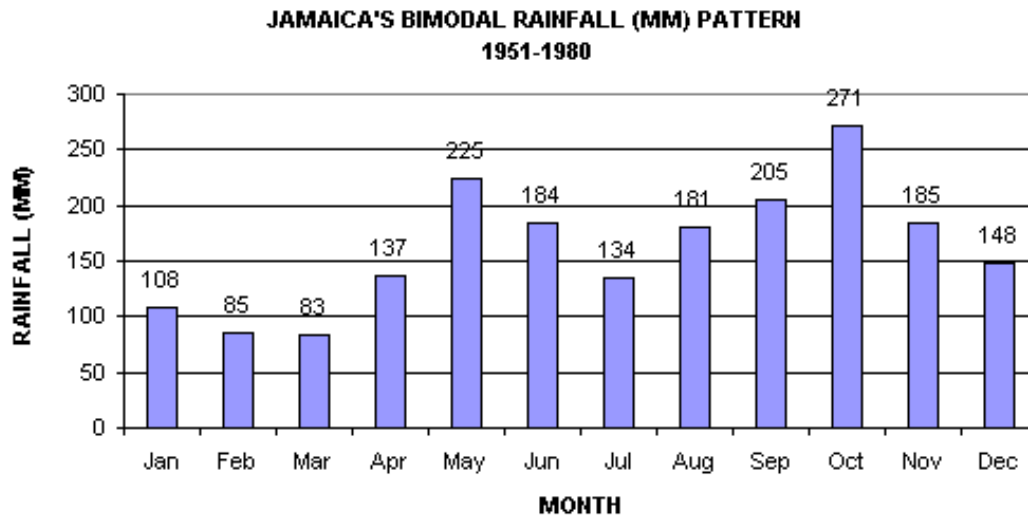


Figure 10. Jamaica's bimodal rainfall pattern (Water Resources Authority, 1980).

Hurricanes. The island comes under the influence of tropical storms and hurricanes, with hurricane season falling from June to November (Meteorological Services of Jamaica, 2002). The northern Caribbean, which is where Jamaica lies, has an inter-annual variability of hurricane occurrence with a mean strike rate of one per year (Spence, Katada and Clerveaux, 2005). The geography and climate of Jamaica provide the necessary ingredients for hurricanes – supply of moisture, warm sea surface temperatures and tropical weather – and when the low pressure systems are generated and track through the Caribbean, Jamaica is susceptible to severe damage from them.

The most notable and destructive hurricane of recent times to affect Jamaica was Hurricane Ivan in 2004. Ivan reached category 5 strength while over the Central Caribbean Sea on September 9th as it moved towards Jamaica. As Ivan approached the island, it weakened to category 4 intensity as it moved just south of the island (NOAA,

2004). The threat of hurricanes is one that has the potential to affect the tourism industry; it is likely that hurricane season will be the least popular time to visit.

Sea Level Rise (SLR). As noted by the International Panel on Climate Change (IPCC), climate change will have many negative effects including greater frequency of heat waves; increased intensity of storms, floods and droughts; rising sea levels; a more rapid spread of disease; and loss of biodiversity (IPCC, 2007). One hundred years into the future, sea level is expected to be 0.18 to 0.59 meters above present levels. Sea level rise poses a particular threat to countries with heavy concentrations of population and economic activity in coastal regions (Dasgupta, Laplante, Meisner, Wheeler and Yan, 2007). The geography and climate of Jamaica shows that SLR will be a major issue in the future, especially in the coastal regions. A study conducted by the Development Research Group of the World Bank on the impact of sea level rise in developing countries used GIS data in order to project the impact of different amounts of sea level rise (Figure 11). As is to be expected, the greater the sea level rise, the greater the amount of land is impacted. In the case of Jamaica, with the 1,022 km of shoreline, the relative impact of SLR is expected to be higher for Jamaica than most of the other countries in the Latin America and Caribbean group (Dasgupta *et al.*, 2007).

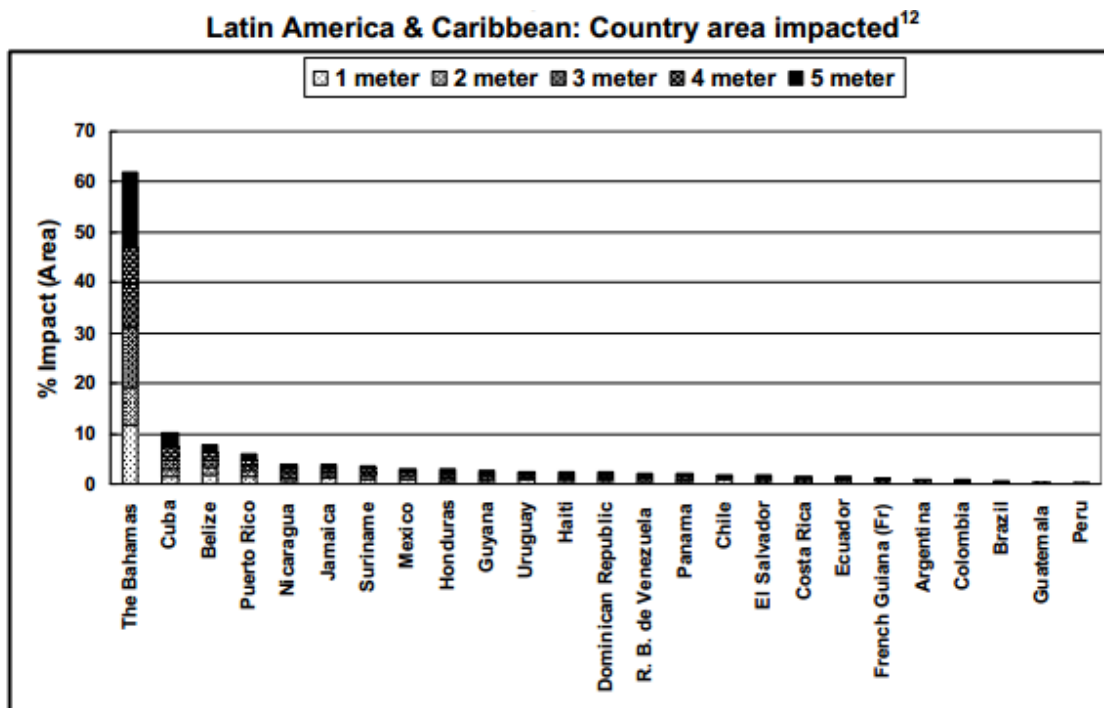


Figure 11. Country area impacted by sea level rise scenarios (Dasgupta *et al.*, 2007).

Water Resources. Rainfall interacts with the surface of the earth on impact. The nature of the interaction is dependent on the nature of the rocks that exist at the particular location. Permeable rocks will allow water to penetrate the ground and become a part of the groundwater reservoir. Aquifer types in Jamaica are predominantly white limestone rocks and alluvium which constitute 50% of the land surface.

The Water Resources Authority (WRA) of Jamaica reports that groundwater is the most important of the islands water resources, with 84% of the available water resources being groundwater. The WRA monitors groundwater levels at 390 index wells throughout the island to provide information on the quality of groundwater and to facilitate the prediction of trends in the quantity of the resource (Water Resources

Authority, 2014). Table 6 shows a summary of the national demand for water by different sectors.

Table 6. Summary of Jamaica’s National Water Demand (WRA, 1995).

Demand Sector	Present (1995)		2000		2015	
	MCM/yr*	Percent	MCM/yr	Percent	MCM/yr	Percent
Agricultural	682	75	1149	80	1338	79
Non agricultural	231	25	288	20	346	21
Domestic Rural	21	2	46	3	62	4
Domestic Urban	138	15	161	11	181	11
Tourism	10	1	15	1	23	1
Industrial	62	7	66	5	80	5
Total	913	100	1437	100	1684	100

*MCM/yr is million cubic meters per year

This table shows that the total demand for water is predicted to increase across all of the demand sectors in terms of raw amounts. The values of interest in terms of this research are the tourism values. This table shows that the raw values are going to increase from 10 in 1995, to 15 in 2000 and 23MCM/yr in 2015. The percentage doesn’t appear to change based on this table, but if this was given to some decimal places, then this would likely give a better representation of the changes.

Bluefields Bay

Marine Protected Area. The Bluefields Bay fish sanctuary and its surrounding communities in the area are of interest in this research. It is located on the southwest coast of the island of Jamaica in the Westmoreland parish, between Savannah-La-Mar and Belmont. Bluefields Bay is located 73 km south of Montego Bay and extends from

Bluff Point to Belmont Point, with the larger communities of Bluefields, Cave, and Belmont located along its coastline, along with several smaller communities. The major waterways that drain into the bay are the Bluefields River, Sweet River, Bluehole Spring, and Sawmill River as well as several smaller ephemeral streams (Ebert, 2010).

The fish sanctuary is 13.42 km² in area with 10.46 km of coastline and maximum depths of 8-10 meters (C-Fish, 2014). It covers a bay that is approximately 8 km long by 2 km at its widest part with maximum depths of 8-10 m along the seaward boundary. The marine boundary of the sanctuary runs southwest from Bluff Point to Belmont Point turning at a midpoint at N 18° 11' 28.147"; W 78° 3' 40.638" that is located about a mile to the west-southwest of the town of Cave (Ebert, 2010). It is the largest sanctuary in Jamaica and the surrounding communities of Bluefields, Cave, Belmont and smaller hamlets are home to 25,000 people, 400 of whom are fishers (BBFFS, 2012). The protected area includes mangroves, sea grass beds, coral reefs and artificial reef units which provide ideal habitats for the fish to use as nurseries before migrating out of the unit. Natural characteristics of the coastline vary from weathered limestone bluffs and mangrove forests to sand and gravel beaches. Artificial structures along the coastline and in the bay are sea walls, riprap, old dock pilings, and a new artificial reef aimed to facility reef and fish improvements (Rudolph, 2013).

The sanctuary is managed by the Bluefields Bay Friendly Fish Society (BBFFS) which was created in 2004 in an attempt for the local fishers to recover from the effects of Hurricane Ivan. The BBFFS was very influential in the establishment of Bluefields Bay as a MPA. In 2007 when the Minister of Agriculture and Fisheries announced the establishment of five new fisheries (Bluefields Bay not being one of the five), the BBFFS

wrote to the Minister asking for a sanctuary to be established in Bluefields Bay. There was overwhelming support from the Bluefields Bay communities and the sanctuary was established in March 2009 (C-Fish, 2014). Figure 12 shows a map of the study area, with the white circles in the map denoting the buoys which mark the boundary of the fish sanctuary. Figures 13 and 14 show sections of the beaches which are found on the shoreline of the MPA.

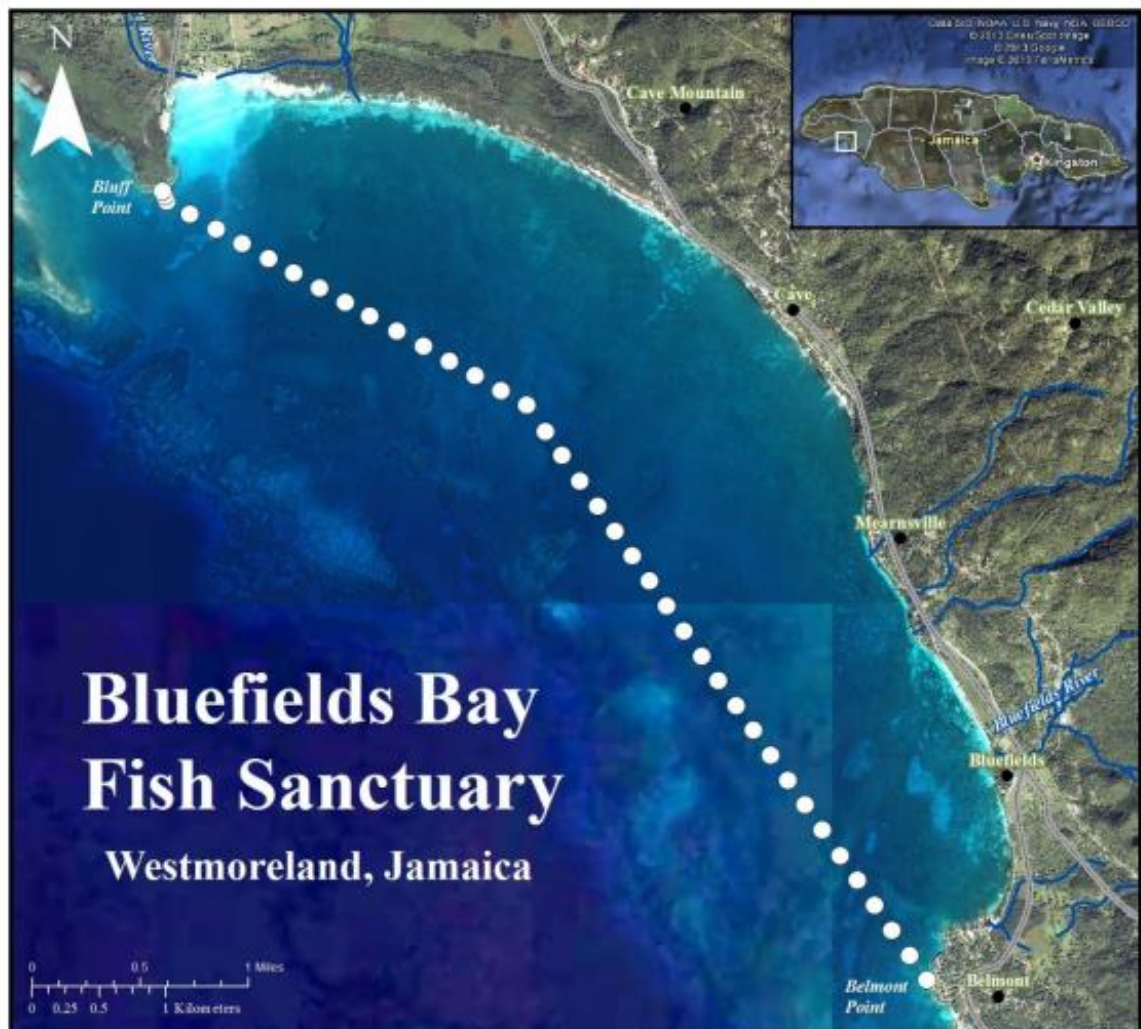


Figure 12. Study area. Shoreline and location of buoys denote the boundaries of the marine protected area (MGI, 2010; Penobscot Corporation, 2012).



Figure 13. Community beach park. Section of sandy beach along the sanctuary shoreline, image taken January 2014.



Figure 14. Community beach park. Section of rocky beach along the sanctuary shoreline, image taken January 2014

History. Bluefields Bay has a unique history that can be divided into three time periods: (1) prior to European settlement/Spanish; (2) British settlement; and (3) post-European settlement. The area of Bluefields was settled by the Spanish in 1519, who selected that area due to the large population of native Taino villages already existing in Bluefields. The Taino were heavily adapted to the sea but also cultivated substantial agricultural plots including tubers (sweet potatoes), cotton, tobacco, and various fruits. They built wood houses, making their historical impact on the landscape substantial. Remnants of these large aboriginal villages still emerge as archeological artifacts in the alluvial plains of the Bluefields River. The Spanish settlement, with its exact location unknown, forced the Taino into slavery, making it possible to infer that Spanish settlement in the Bluefields area was large (Ebert, 2010).

The British invaded Jamaica in 1655, forcing the remaining Spanish to retreat to Cuba. The British had the most significant impact on the area of Bluefields. Plantations were built starting in the 1720s, which generally excluded sugar monoculture. Sugar cane plantations were located primarily to the west in the Sweet River/Deans Valley lowland. The estates in the area of Bluefields grew crops throughout different periods of time, cut logwood for export, and raised cattle as well (Higman, 2001). The area of Bluefields was particularly prominent for pimento tree harvesting, which produces spices and oil used for perfume. Heavy cultivation and land clearing occurred in the 18th century, and after Emancipation in 1838 much of the cleared land was neglected and re-forested. In addition to plantations the British also utilized the area of Bluefields for commercial shipping and trade, developing ports along areas near Bluefields, Cave, and Belmont. Land clearing on the steep slopes adjacent to the bay is recorded in historical

maps of Bluefields Bay (Figure 15). The British had a large impact on the Bluefields area and evidence of land development can still be seen throughout the area, including old plantations, drainage systems, waterwheels, and dock posts. Taino cultivations occurred on easily farmed lowlands, limiting the effect of their agricultural practices on the landscape. Present day land uses are characterized by the conversion of cropland to forest, pasture, and small-scale subsistence farms (Higman, 2001).



Figure 15. Historic map of the south end of Bluefields Bay from late 1700s. (National Library of Jamaica *cited in* Ebert, 2010)

Land Use. Land use in terms of the vegetation in the Bluefields watershed consists of wetlands and mangroves near the coast, and disturbed broadleaf forest, bamboo, and fields further up the watershed (Figure 16). Urban development is increasing throughout the watershed, with the establishment of several living developments currently taking place. Illegal shanty developments occur sparsely throughout the forested areas along the streams, as well as subsistence farming and scattered commercial businesses.

Rivers. Land use in the study area is not uniform and the river system is a big influence on the natural land use of the area. There are many rivers that drain into the bay and they, along with the elevation changes in the area, make the study of the land use quite interesting. The Sweet River drains a large area and transports water from high areas in the mountains to the alluvial basin in the western area of the watershed. The Sawmill River, located in Cave, can be classified as a wetland area. The Bluefields River is a slightly larger, more established channel that is incised and in areas takes on characteristics of a gorge. The elevation changes in the parish facilitate the movement of the water through the river system and into the bay (Figures 17).

In terms of the quality of the water resources in the Bluefields Bay area, the Natural Resources Conservation Authority's Watershed Protection Branch rated Bluefields Bay's associated watershed as being in moderately degraded condition (NRCS-WPB, 1997 *cited in* Ebert, 2010).

Soils. The karst topography that is present on the island of Jamaica explains a lot about the soils that are found there. Figure 18 shows the soils that are found in the Westmoreland parish of Jamaica and it is clear that the loam and clay types of soils are

dominant, and this relates back to the limestone geology that is present on the island. Around the Bluefields Bay area in particular, stony loam, gravely clay loam and clay are the three most dominant types of soil.

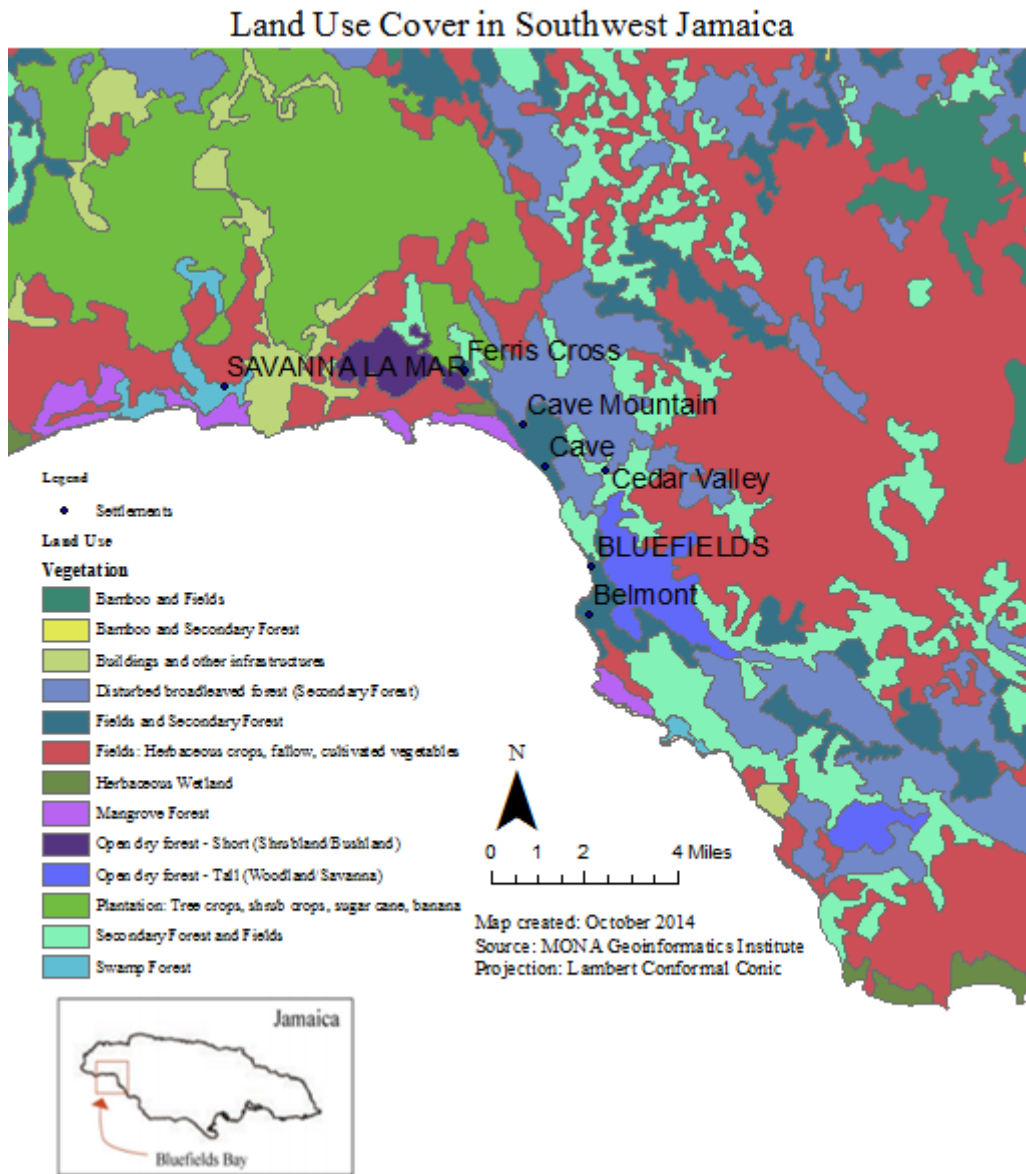


Figure 16. Land use cover in Southwest Jamaica (MGI, 2010).

Digital Elevation Model of Southwest Jamaica

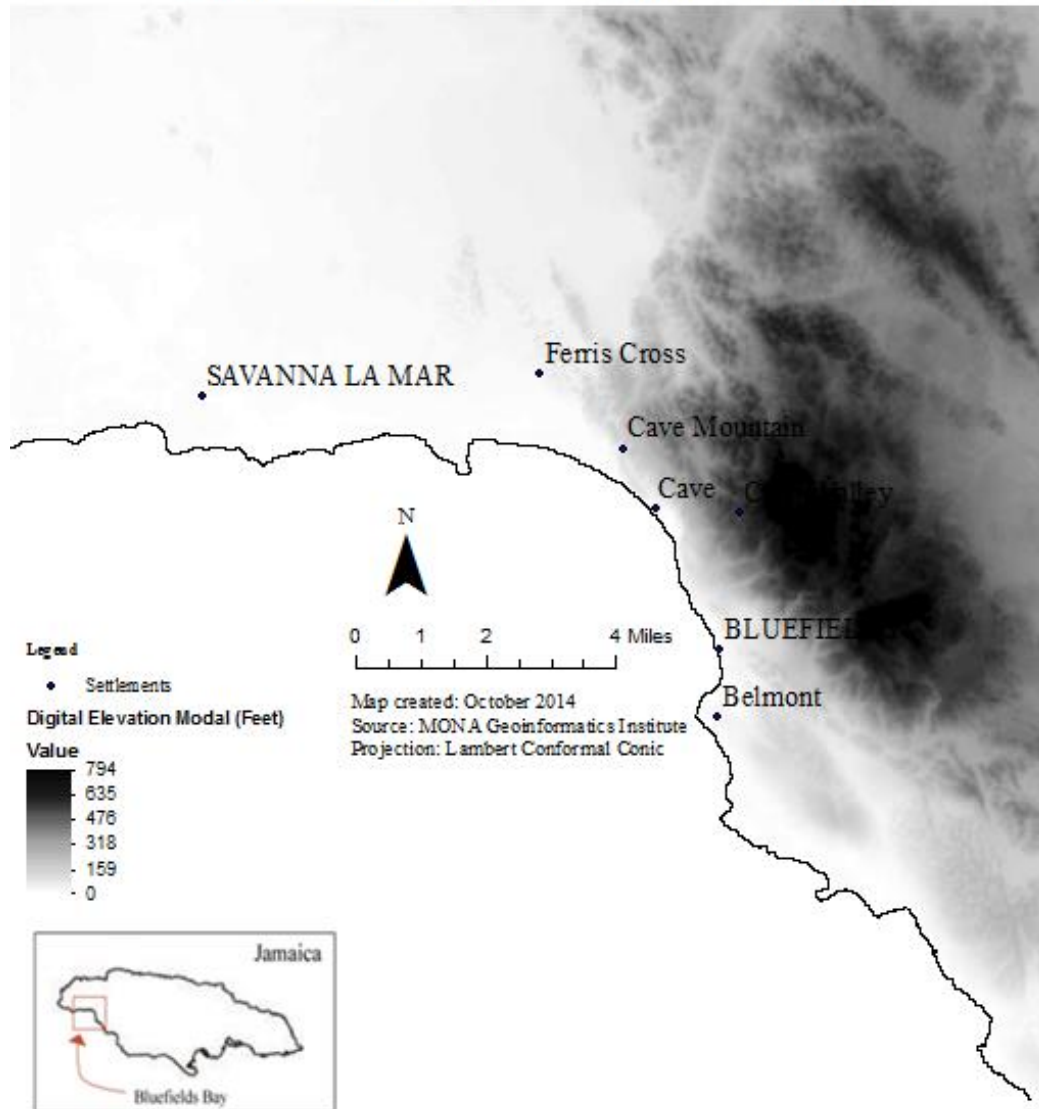


Figure 17. Map of the elevation changes in Southwest Jamaica (MGI, 2010).

Demographics. The parish of Westmoreland experienced a population percentage change of 3.1-4.9 percent and as of 2011 the population was 144,103. Rural areas account for 72.52 % of the total area in Westmoreland, with urban areas accounting for the other 27.48 % (Statistical Institute of Jamaica, 2014).

Figure 19 shows the enumeration districts for the areas surrounding Bluefields Bay, derived from the 2001 census data of Jamaica. There is a lack of data for the enumeration districts from the 2011 census. The area considered the community of Bluefields has a population of about 3,133 people and is composed of six districts. The area surrounding the bay including the Bluefields population hosts about 6,575 people and is composed of a total of fifteen districts (Ebert, 2010).

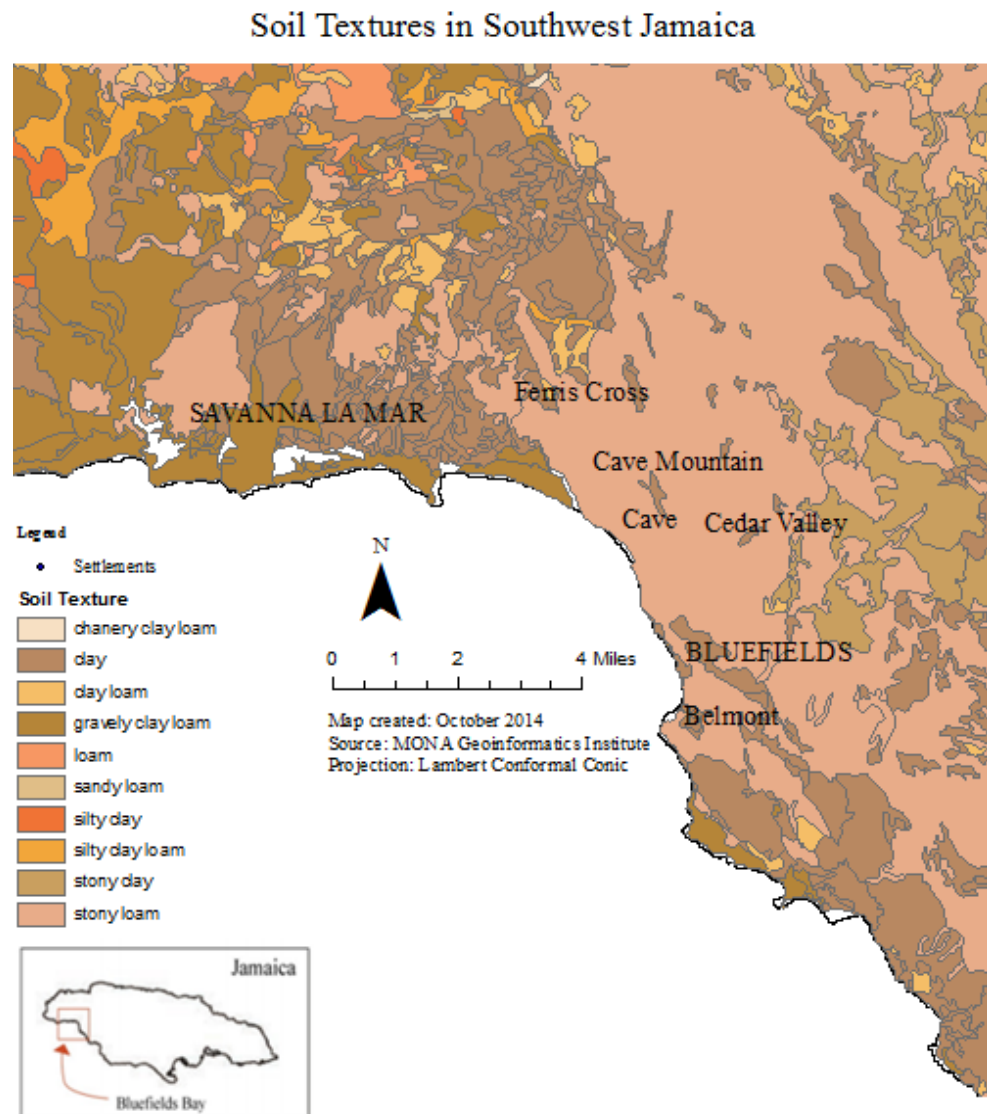


Figure 18. Map of the soils found in Southwest Jamaica (MGI, 2010).

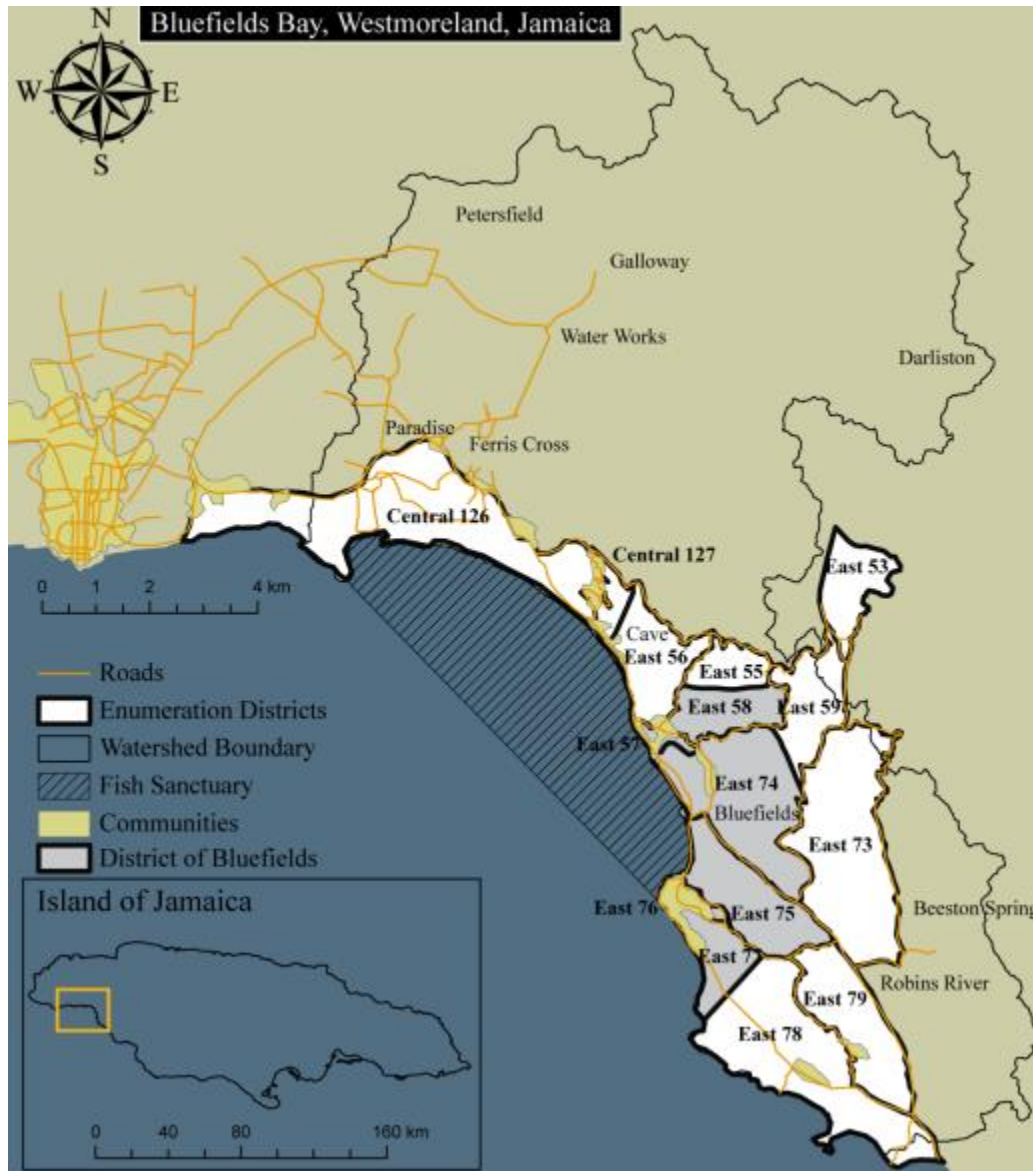


Figure 19. Enumeration districts for areas surrounding Bluefields Bay. The grey district denotes the area considered Bluefields. The population of Bluefields is 3,133 and the total population of all the districts is 6,575 people (Jamaica Census data, 2001 *cited in* Ebert, 2010).

CHAPTER 3: TOURISM RESOURCE ASSESSMENT

The main goal of this thesis is to provide a sustainable tourism assessment for a marine protected area in Bluefields Bay, southwest Jamaica. In order to accomplish this, some specific methods are going to need to be used. The objectives indicate that the majority of the information that is needed in order to fulfill the study is going to be qualitative data.

The first objective involves identifying the tourism attractions and activities that are already in place in the study area of Bluefields Bay. This will consist of constructing a map showing these features in order to assess the current situation and allow for some suggestions to be made in terms of the gaps that exist in the tourism business.

Identification of the Current Tourism Attractions and Facilities in Bluefields Bay

In order to identify the current tourism attractions and facilities, an inspection of both the natural environment and the man-made environment will allow Bluefields Bay to be put into context in terms of the potential for sustainable tourism. The MPA is the main focus of this area and therefore it is important to see what the comparative advantage of this particular MPA at Bluefields Bay is and how this can influence tourism.

Natural Features. With regard to the natural environmental conditions, Bluefields Bay has long been known for its exceptionally clear waters compared to other locations in Jamaica. For example, during water quality tests in Negril to the west of Bluefields Bay, poor water clarity due to re-suspension of marine sediments, coastal erosion and excess inputs of soil and peat by fresh water runoff was noted at multiple

locations (Goreau and Goreau, 1997). The clarity of the water in Bluefields Bay is a comparative advantage that still remains true today due to several factors.

Bluefields Bay lies along the southwest coast of Jamaica within a natural embayment protected – to a degree - from severe wave attack. The trade winds blow directionally from southeast to northwest in the Greater Antilles which Jamaica is a part. Seasonally the circulation of currents in the Caribbean varies, but the direction of flow remains overall consistent from the southeast to northwest along the southern coast of Jamaica. As a result, the typical track of hurricanes and tropical storms is a westerly direction from the open Atlantic into the Caribbean before veering northward towards the North American coast. The location of Bluefields Bay along the southwest coast of the island shelters it from the majority of the paths that hurricanes and tropical storms usually follow. It is also sheltered from the destructive waves caused by hurricanes and tropical storms (Carroll, 2013).

Bluefields Bay also differs from other bays in Jamaica in that there has been no recent construction projects that involve major alteration of the shoreline and sea floor. There have been no modern dredging activities or sand mining for beach replenishment, like the dredging of a channel for bauxite barges through the fringing coral reef in Discovery Bay (Vieria, Black, Woodley and Sary, 1995). There have also been no dredge and fill construction at Bluefields like the undertaking of extending the airport runway at Montego Bay (Sullivan, Chiappone, Littau, Miller, Rath, Soto, Reed, Walling and Willson-Kelly, 1999). With the formation of the fish sanctuary in 2009, the key ecosystems within the bay are protected from any future threats of such actions.

In terms of the natural features and attractions have been discussed here, it is clear that the natural infrastructure would support sustainable tourism. The water currents, shelter from hurricanes and tropical storms and the lack of construction which would have an effect on the shoreline or the sea floor all support the idea that the MPA could foster sustainable tourism.

Infrastructure. As well as the natural features, it is critical to look at the human made attractions and facilities present in Bluefields Bay. Figure 21 visually shows the tourism facilities which surround the MPA, with the features of interest being the accommodation options, the beaches, the local villages, the commercial strip and the road system. From looking at this map, it is evident that there is some current infrastructure that would support tourism.

Mapping the Current Tourism Attractions and Facilities in Bluefields Bay

The identification of the physical and man-made features in Bluefields Bay have given an outline as to what is currently in place in Bluefields. Now it is important to connect these features to how they can be used to support sustainable tourism. This involves locating the components which make up the tourism product - these are destination, attractions, facilities, accessibility, images and price (Middleton, 1988). Due to a lack of specific spatial data available for the Bluefields Bay area, the use of Google Earth was necessary in order to map the current facilities. By using Google Earth, both an aerial view and a street view of the study area was available. This allowed me to transfer this information onto a map which shows the current tourism situation.

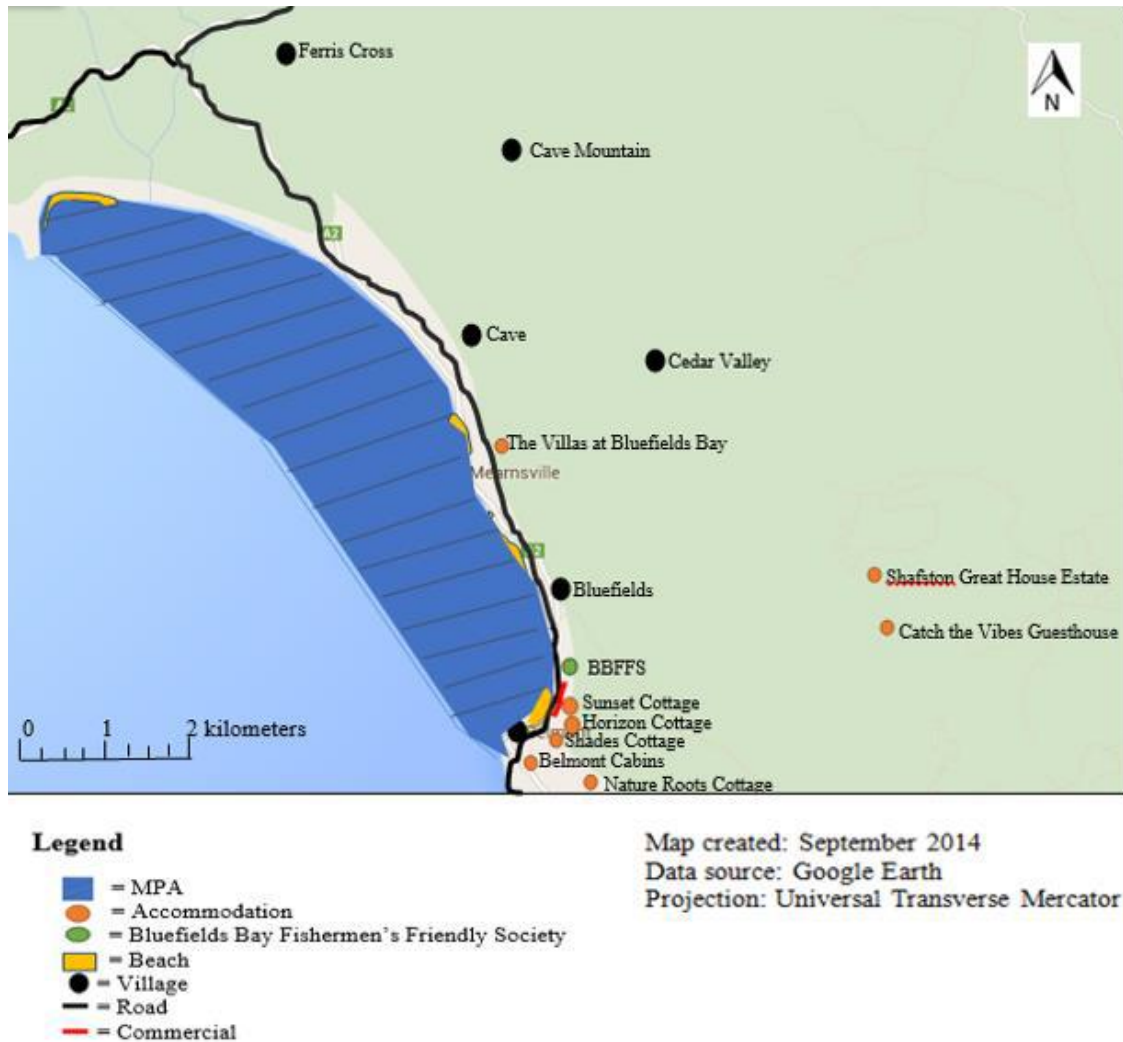


Figure 20. Map of the current tourism attractions and facilities in Bluefields Bay.

Accommodations. There are eight places that fall into the accommodation category and these accommodation options are mostly located in the southern half of the study area. This is most likely correlated to the greater area of beach along the coast which is found in this section too. The accommodations were most likely strategically placed closer to the beaches as this is one of the main attractions that the area has to offer. As well as this, they are all closer to the village of Belmont which has the commercial strip which consists of some street vendors and a few local bars and shops (Figure 21).



Figure 21. The commercial strip in Belmont, image taken January 2014.

It is important to examine the accommodations for quality, standard and condition. Upon visiting the area in January, we stayed in The Belmont Cabins (Figure 22). The Belmont Cabins consisted of a guest house which had a small kitchen and dining room and two separate cabins which were in the grounds of the accommodation, along with a small pool. This accommodation is typical of a locally owned guest house in a small village like Belmont where the owners, cleaners and cooks were all local people from the village. The appearance of the guest house is somewhat colonial: it has three levels, balconies and pillars. The interior of this accommodation could be described as

basic, with each room consisting of simply beds, a chair, a small night stand and a bathroom with a toilet, sink and shower. The Belmont Cabins are located right on the main road and just beyond the road is a small beach, making the proximity to the beach one of the main attractions of this accommodation.

It is clear from the map that there is a clustering of guest houses located right by the Belmont Cabins. Sunset Cottage, Horizon Cottage (Figure 23), Shades Cottage (Figure 24) and Nature Roots Cottage are all within a kilometer of each other on the coastline of Belmont. When we were in the area in January, it was obvious that each of these accommodations were very similar to Belmont Cabins. They were all small scale guest houses which were locally owned and had a similar basic interior to that of Belmont Cabins.

Further inland and at a higher elevation, two more accommodation options are to be found. These are the Shafston great house estate and the Catch the Vibes guest house. Both of these have great views of the bay as a result of their location, and they are surrounded by vegetation which is a contrast to the other coastal guesthouses. The other accommodation is the Villas at Bluefields Bay which are privately owned, luxurious all inclusive waterfront villas. There are six villas in total which are dispersed along the coast line in order to give the secluded, private feel that the guests who choose to stay here want.

It is clear from looking at the existing accommodations that there are a few different options for tourists to choose from. The guest houses are aimed at the average tourist and the prices reflect this. In contrast to this, the luxury Villas at Bluefields Bay are a lot more expensive and cater to the tourists with a higher budget (Koss, 2008).



Figure 22. The Belmont Cabins, image taken January 2014.



Figure 23. Horizon Cottage, image taken January 2014.



Figure 24. Shades Cottage, image taken January 2014.

Other Infrastructure. The Bluefields Bay Fishermen’s Friendly Society office is also located in the southern part of the study area, between Bluefields and Belmont. This is considered the headquarters for the BBFFS who came together after the passage of Hurricane Ivan in 2004. The society was created in order to have a group who will meet and put mechanisms in place to help to counteract the problems that the fishing industry faces and to secure more help for themselves (BBFFS, 2012). Their meeting place was built and conveniently located at the Bluefields fishing beach (Figure 25). The BBFFS office serves several functions: local boats are stored here (Figure 26); it is a gathering point for the sanctuary wardens; it is a starting point for boat tours out in the bay and of course it is the place where the administration for the society occurs.



Figure 25. BBFFS Office, image taken January 2014.



Figure 26. Local boats stored at the BBFFS area of Bluefields fishing beach, image taken January 2014.

Other existing infrastructure which exist in the study area include the main road, the A2, which goes along the coast and enters Bluefields from the north through Negril and Savanna-La-Mar and after passing through the area it continues east through several villages and towns. As well as the road, the natural features and topography of the area can be classified as a tourism attraction. Bird watching tours are currently an option for tourists to participate in. The change in elevation from the coast up into the mountains provides some spectacular scenic views over the bay and this is an attraction for tourists.

Analysis of Bluefields Bay

The existing tourism facilities and attractions in the area show that there are both physical and manmade attractions that are connected to the MPA.

Physical Conditions and Tourism. The physical characteristics which make the MPA a significant attraction in this area include the clear waters that are present, particularly in comparison to other locations in Jamaica. The sheltering that the bay receives due to its location means that it is protected from severe wave attack, tropical storms and hurricanes and the lack of construction projects, means that the shoreline is being protected. These physical characteristics can be classified as tourism attractions in terms of the benefits or advantages that they give to the tourists who chose to come to Bluefields rather than an alternative location. The clear water in the bay is a great characteristic to have because it means that low impact, sustainable tourism types of activities such as snorkeling and diving will be appealing to the tourists. Any form of marketing of these activities should try and emphasize the clarity of the water. The implementation of the MPA has the effect of bringing a better quality and quantity of fish

to the area, therefore if activities like diving and snorkeling were one of the main attractions of the sustainable tourism initiatives, then this physical characteristic should work in Bluefields Bay's favor.

As well as this, the fact that the bay is sheltered from severe wave attack, tropical storms and hurricanes is another physical advantage of the MPA. The relatively calm conditions that are found in this area mean that the opportunity to dive and snorkel will be greater here than in other parts of the sea surrounding Jamaica. The geographical location of Bluefields and the way in which the wind and ocean currents work also means that the conditions in the MPA for the fish will be better. The calm conditions make for not only good viewing for the tourists in terms of the quantity and quality of fish, but also they add an element of safety and reassurance. Knowing that the area is less susceptible to any severe weather than other parts of not only Jamaica but also the Caribbean, gives Bluefields Bay another advantage.

Furthermore, the protection of the shoreline from construction is another advantage of the bay and the MPA. By minimizing any form of physical construction, this will reduce the amount of erosion and weakening of the surrounding land, meaning that the stability of the shoreline around the bay and the MPA will be as good as it can be. This situation will also help with the quality of the water because a low amount of construction means that a lower amount of unwanted infiltration into the water system will occur which again emphasizes the good quality of the water here. This is related to tourism not only for water quality reasons, but also for the fact that the lack of construction means that the views of the bay are not restricted; the beach areas along the shore are not being reduced and the natural landscape remains. These things are

important because if sustainable tourists who are interested in the MPA come to visit, they will want to be able to focus on the MPA which should remain the focus of the village, rather than big construction projects being the focus.

Infrastructure and Tourism. The map of the current tourism infrastructure, including attractions and facilities (Figure 20), that was created shows the more human induced attractions in the area. The different kinds of accommodations that are present show that there are options for a variety of tourists based on how much they want to spend. There is a variety in the standard of the accommodations, with the majority of the accommodations being the lower priced ones, indicating that they are quite basic. It is of course, a positive sign that there are already some lodging options available in Bluefields Bay, however, this is one of the areas which needs to be addressed in the assessment and planning phase. It is reasonable to think that the majority of the target market of sustainable tourists will consider the smaller guest houses because of the price and also because they are the locally owned and locally ran accommodations. As a result of this, it is important to make cosmetic improvements to the guest houses and cottages in order to ensure that they are actually sustainable and not just an extension of somebody's house.

The commercial strip is another attraction that is shown on the map. It was difficult to put too much information on the map about what exactly the commercial strip consisted of because it was mostly small shacks or market style stands which were present (Figure 21). This meant that there weren't any officially constructed buildings to label because of the shack style, street vendor nature of them. The commercial classification was used because these street vendors sold things like fruit and vegetables, fish, chicken, drinks and local textiles and crafts. Of course, the food and other products

that are sold out of these market stands are all local products which should be appealing to sustainable tourists. Rather than having a large grocery store with globalized products available, the fact that the local products are available gives Bluefields and the local residents a sense of identity. This commercial strip is located close to the shoreline, meaning that tourists doing marine activities are in close proximity to the strip to get supplies for the day. One of the things about this strip which has both positive and negative associations is the lack of restaurants or other smaller types of eating establishments. A couple of the street vendors sell hot jerk chicken which is a local specialty, however there is a lack of sit down restaurants both in this strip and in the village in general. There are a couple of reasons for this, one being that currently there isn't really the demand from the market for many restaurants and the other being that one of the features of the accommodations is that they offer home cooking services. The guest house that we stayed in, for example, had two cooks who lived in the village who cooked for us every night, using ingredients that they had bought from the local market stands on the commercial strip. Obviously this service supports the idea of sustainable tourism because it fits two of the principles which were addressed in chapter one – livelihood sufficiency and opportunity and resource maintenance and efficiency (Gibson *et al.*, 2005). By the local cooks using the local ingredients, the basis for the sustainability of resources and employment are already in place. An increase in the number of visitors to the area will have the knock on effect of a greater demand for food services, meaning that more local produce will be needed and more cooks for both the guest houses and for any new eating establishments that will be added to the area.

The beaches are another attraction to analyze in Bluefields. There are two kinds of beaches along the coastline of the MPA - sand beaches and rocky beaches - both of which are appealing to tourists. As discussed in the sections on island and marine tourism, the attraction to coastal areas and the interface between the land and sea is something which tourists find very appealing. Even though the area of beach along the shoreline is quite small, it is still an attraction to tourists. The idea of sustainability is associated with these beaches as a result of the lack of construction along the shoreline in order to both protect the shoreline and the MPA.

Finally, another critical tourism component to analyze is the accessibility to the destination. The airport at Montego Bay is the closest airport and is 53.7 km away from Bluefields. It takes about one hour and twenty minutes to drive to Bluefields Bay, via some smaller roads which go over the mountainous inland area. The road network also goes along the coast line connects Bluefields to the nearby towns of Negril and Savannah-La-Mar, meaning that the accessibility to the area is not a problem. The quality of the roads does, however, need to be addressed because they are in poor condition and an increase in the number of tourists to the area would mean that the road would be getting a lot more use. It is logical to say that rather than leave the road in its current state, maybe improvements to the road before implementing a tourism plan would be a good idea.

Table 7. Summary of the current tourism resources in Bluefields Bay.

Type of Tourism Resource	Specific features	Characteristics
Natural	Marine Protected Area	Exceptionally clear waters Sheltered from severe wave attack No major construction nearby means a stable shoreline and less infiltration to the water system
	Beaches	Sandy beaches Stone beaches
	Vegetation	Variety of types attracts different bird species and other wildlife
	Topography	Scenic views from elevation changes
Infrastructure	Accommodation	Variety of standard and price Small selection of bars and local shops
	Commercial Strip BBFSS	Central hub for marine activities Allows accessibility and connectivity
	Road System	

CHAPTER 4: SUSTAINABLE TOURISM MPA REVIEW

The second objective is to compare Bluefields Bay's MPA with other places which have a focus on sustainable tourism in order to develop a toolbox or a list of proven alternatives for new opportunities and practices. By adopting the case study method – analyzing a selection of case studies which have had both successes and failures – it will be possible to make realistic recommendations for Bluefields Bay based on knowledge and experience from other similar places. The case study method will also help to accomplish the fourth objective which is to develop recommendations for sustainable tourism opportunities in Bluefields Bay.

Case Study Method

Three particular researchers – Merriam, Yin and Stake are considered foundational writers in the area of case study research (Brown, 2008). They each describe the methods that they have employed in case study analysis and the rationale for said methods.

The case study does not claim any specific data collection methods, but focuses on holistic description and explanation (Merriam, 1998). Within this focus, the case study can be further described as particularistic, heuristic, or descriptive. Merriam describes particularistic as relating to the specific focus of the case. It can suggest to the reader what to do in a similar situation. A heuristic case study is able to shed light on the phenomenon, allowing the reader to extend their experience, discover new meaning, or confirm what is known. It explains the reasons for a problem, the background of the situation, what happened, and why. A descriptive case study is complete and very literal

in its reporting of the findings of the research. The descriptive case illustrates the complexities of the situation, and presents information from a wide variety of sources and viewpoints in a variety of ways.

Yin (2003) refers to methods of data collection following carefully articulated steps: the use of multiple sources of evidence, the creation of a case study database, and the maintenance of a chain of evidence. Yin proposed three general strategies for data analysis, which is “one of the least developed and most difficult aspects of doing case studies”. First, the theoretical propositions that lead to the case study must be followed to help focus attention on certain data. Second, rival explanations must be considered, and finally, a descriptive framework for organizing the case study must be developed.

Stake (1995) believed that the most important role of the case study researcher was that of interpreter. His vision of this role was not as the discoverer of an external reality, but as the builder of a clearer view of the phenomenon under study through explanation and descriptions, “not only commonplace description, but ‘thick description’”, and provision of integrated interpretations of situations and contexts. This constructivist position, Stake claimed, “provides readers with good raw material for their own generalizing”.

It is clear that there is justification for the case study method to be employed in order to gain experience and understanding of current situations and to use what has been discovered in case studies as a basis for successful plans for the specific area of interest in this research: Bluefields Bay, Jamaica. An analysis of a selection of case studies which have both positive and negative outcomes will help in the assessment of the Bluefields Bay case study.

By looking at what other places which are similar to Bluefields Bay have done, information can be gathered from them in order to make a list of recommendations for Bluefields Bay. Similar places refers to small coastal communities which have MPAs and a focus on tourism. The aim of this method is to review positive and negative occurrences in the different case studies in order to know what ideas to follow and what ideas to avoid.

Positive Case Studies

The case studies which have been selected for review in this section are described as positive because they are examples of where the results of the action taken with regard to the marine protected area and its quest for sustainable tourism have been successful. These successes can be environmental, economic, societal or a mixture of the three and each case study described in this section shows the successful elements of the plan that it has followed. The case studies which were selected and classified as positive were done so by myself on the basis that they met the criteria that would make them comparable to the Bluefields Bay MPA. This means that they were all relatively small areas in areas which have desirable tourist attractions in place and that are meeting some of the principles for sustainable tourism.

Chumbe Island Coral Park. Chumbe Island is located off the east coast of Zanzibar and has been recognized as a successful sustainable destination by the United Nations Secretary in his report to the General Assembly on protection of coral reefs for sustainable developments and livelihoods (United Nations, 2012). The island is described as a nature reserve which includes a reef sanctuary and a forest reserve (Figure

27). The reef sanctuary is the MPA of interest in this example and it has been described by the noted coral taxonomist Professor J.E.N. Vernon from the Australian Institute of Marine Science (AIMS) as “one of the most spectacular coral gardens to be found anywhere in the world”. He also noted that the park is exceptionally well managed (Reidmiller, 1999). Prior to the inception of the coral reef project in 1991, Chumbe Island was an uninhabited island. With Chumbe being located upstream of the most important fishing grounds opposite Zanzibar’s capital, Stonetown, the Chumbe reef provides a protected breeding ground for fish, corals and other species which can then spread out to recolonize nearby overfished and degraded areas. This makes Chumbe’s protection of vital importance to both the preservation of bio-diversity and the fish economy in the region (Kloiber, 2013).

After becoming a coral reef sanctuary, the next step was to create a model for a financially and ecologically sustainable park management system. This included building an educational center, nature trails and seven visitor bungalows on the island (Figure 28). All of the developments were constructed according to state of the art architecture; this meaning that there was zero impact on the environment and the construction was in keeping with the natural landscape. In addition, fishermen of adjacent villages were employed and trained as park rangers by volunteer marine biologists and park rangers (Reidmiller, 1999). The 2006-2016 management plan was included in the *Chumbe Island Coral Park - Conservation and Education, Status report 2013*. With regard to the tourism, it was stated that regulated and controlled ecotourism and recreation activities enable revenue generation to sustain MPA operations (Kloiber, 2013).

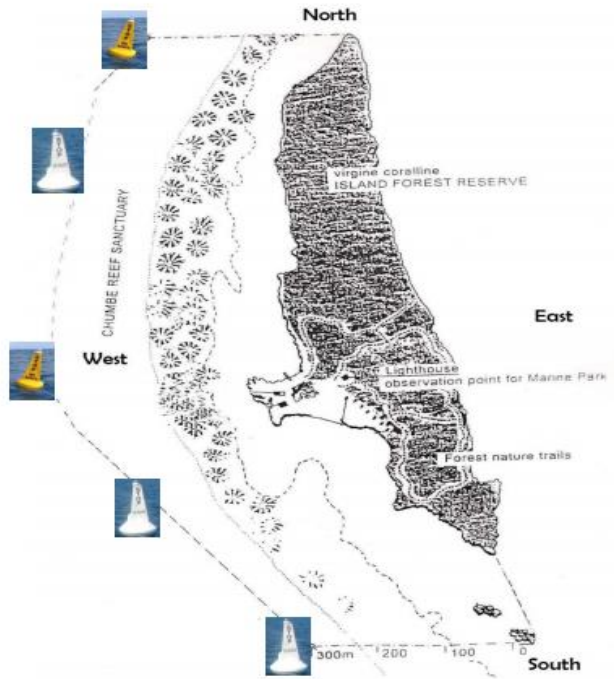


Figure 27. Map of the borders of the coral reef sanctuary, including the 6 buoys which are in place as an aid in patrolling the sanctuary (Kloiber, 2013).



Figure 28. The eco-lodge on Chumbe Island. Revenue from eco-tourism activities is channeled back into conservation, education and research (Kloiber, 2013).

Bonaire Marine Park. Bonaire is a part of the Netherland Antilles ABC (Aruba, Bonaire, and Curacao) islands in the Caribbean. The Bonaire National Marine Park (BNMP) was established in 1979 with a mission to protect and manage the island's natural, cultural and historical resources, while allowing ecologically sustainable use, for the benefit of future generations. It has been recognized as a sustainable tourism destination (Figure 29) and was established in response to members of the community wishing to continue the long history of marine preservation that the island had, which included the turtle protection in 1961, the prohibition of spear fishing in 1971 and the protection of coral – dead or alive – in 1975. Funding was received from the World Wildlife Fund of the Netherlands and it meant that restrictions were placed on fishing, diving and boating activities in the park (Pieters and Gevers, 1995).

In 1990, the Bonaire structure plan was implemented and it states that: all major development proposals must be accompanied by a thorough environmental impact study conducted by an independent, qualified expert; the number of divers and general recreational tourists using the BNMP are to be monitored and limited; fishing laws are to be strictly enforced and an annual fee of \$25 for divers and \$10 for non-divers is to be used as a direct contribution to the operations and maintenance of the park; all divers must attend an orientation with their diving instructor (Pieters and Gevers, 1995).



Figure 29. BMNP award for being the first runner up in the sustainable tourism award from the Caribbean Tourism Organization (Bonaire National Parks Foundation, 2008).

Tortuguero National Park, Costa Rica. Tortuguero is a remote village which was not previously considered a suitable resort for tourism as a result of the cloudy, rainy weather, the black silt beach, rough surf, presence of sharks and the lack of land available for hotels. However, this area has been identified with sound conservation efforts and small scale ecotourism on the Caribbean coast as a result of successful local community efforts (Seales and Stein, 2012). Many tourists come to Tortuguero to visit the largest nesting beach in the Caribbean for green sea turtles (Figure 30). Tortuguero is a part of the Sea Turtle Conservancy (STC) program, and the STC Executive Director, David Godfrey, described the Tortuguero STC program as one of the world's greatest success stories, with a 500% increase in nesting population (Sea Turtle Conservancy, 2014).

Tourists are able to admire the sea turtles; Modesto Watson is a tour boat owner who runs tours pointing out the sea turtles, crocodiles, sloths, monkeys, parrots, toucans, blue morpho butterflies as well as the local homesteads and hamlets where the houses are built on stilts (Sea Turtle Conservancy, 2014).

Ecotourism has brought vast improvements to the people of Tortuguero, with almost all of the population working in the tourism industry by 2006. Watson has noticed a change in the mentality of the people; they realize that through conservation efforts, more income is available if they do it correctly. Training has been given to members of the local community to provide them with the skills of being local tour guides and hotel employees (Seales and Stein, 2012).



Figure 30. Green sea turtles nesting in Tortuguero, Costa Rica (Sea Turtle Conservancy, 2014).

Saba Marine Park (SMP). The island of Saba is part of the Dutch Antilles islands in the Caribbean and in 1987 it was officially declared as a marine park. The Ministry of Economic Affairs of the central government of the Dutch Antilles believed that strengthening the diving industry would serve as a way of strengthening the economy of Saba (Framhein, 1995). However, in 1993 the government withdrew its subsidy for staff funding, but the SMP has managed to remain successful as a result of donations, souvenir sales and visitor fees - divers are required to pay \$3 per dive (Van't Hof and Buchan, 1995).

Although viewed skeptically by the local population in its initial phase of development and meeting with some strong opposition, the Saba Marine Park quickly developed into an attraction for eco-tourist type divers and the economic benefits showed in a very short time. The significance of the self-financing status was great as it showed an independence from limited local financial resources and development of the Saba

Marine Park has shown that people are willing to pay for conservation efforts. Diver surveys indicated that many divers were not aware of the Marine Park's significance in its protection of the marine environment, however they planned their trips to Saba on the understanding that they would have an impressive diving experience on near pristine coral reefs with an abundance of fauna, but did not relate this to the efforts or existence of the park. This very fact indicates that the Marine Park has lacked in its education goals and the dissemination of information and interpretation about the Park. This is an opinion shared by many local people and the results of these surveys should act as guidelines to the future development plans of the SMP (Buchan, Frankhein and Fernandes, 1995).

Esperanza Marine Park, Philippines. In 2004, the Bureau of Fisheries and Aquatic Resources (BFAR) produced a comprehensive report of the state of Philippine fisheries. Among other problems were the issues of inequitable distribution of benefits from resource use; poverty among small scale fishers and inadequate systems and structures to manage fisheries (Bureau of Fisheries and Aquatic Resources, 2004). In response to this, the establishment of more community-based marine protected areas in the Philippines occurred.

The example of the Esperanza MPA helps to show the response of local community stakeholders to the impacts of the MPA. The Esperanza MPA enforces user fees to the snorkelers and divers and during 2006, more than \$3000 was brought in through these user fees. Under the planning ordinance, 45 per cent of this was supposed to go directly back into the project for the provision of necessary items such as marker buoys, ropes, and a boat for the fee collectors. 25 per cent was potentially earmarked to go back into the community in the form of a credit cooperative and the remaining 30 per

cent was supposed to return to the municipality for the purposes of future coastal resource management projects. The Esperanza MPA was extremely well enforced and a survey conducted by those implementing the MPA in 2004 showed that 90 per cent of the community were in favor of the project and two years on from this, many of the fishers that supported the MPA in 2004, still did in 2006 (Fabinyi, 2008).

Specific responses of community stakeholders on the introduction of the MPA included support of tourism in the area as it is seen as a good opportunity for Esperanza to develop its own businesses such as guest houses and souvenir shops. Some residents already participated in tourism related activities such as boat carpentry and boat diving, and they saw the creation of the Esperanza MPA as facilitating the growth for these opportunities (Fabinyi, 2008).

San Andres Archipelago, Colombia. The San Andres Archipelago is located on the western edge of the Caribbean. Prior to the establishment of the MPA in 2005, several issues were causing problems in the area, such as: the failure to respect or acknowledge historical fishing rights, lack of local benefit and management autonomy, overfishing, use of illegal equipment that damages habitats and inadequate enforcements. Social problems such as an increase in immigrants to the island led to resource competition and depletion of the marine resources, poverty and drug addiction (Howard, Connolly, Taylor and Mow, 2002).

The decision to implement a MPA to the area was considered the preferred management method and the most likely solution to the problems. The establishment of CORALINA (the Corporation for the sustainable development of the Archipelago of San Andres, Old Providence and Santa Catalina) acted as a regional representative of the

National Environment System. A four year plan was implemented by CORALINA in which the mission was to conserve biodiversity and ensure sustainable use of the coastal and marine resources while enhancing equitable benefit distribution for the local economy (CORALINA, 2000). A multidisciplinary project team was selected and this included a coordinator, marine biologists, a geographic information systems specialist, an economist, an engineer, a communications specialist, educators, community promoters and a legal consultant – and where possible, jobs preference was given to locals (Howard *et al.*, 2002).

A large emphasis was placed on community involvement and some of the community programs included island wide education on resource management to raise awareness and promote stewardship through an outreach program and encouraging participation in all levels of planning and implementation to facilitate MPA development by the stakeholders themselves, through the working groups (Figure 31). As a result of this community input, it was hoped that bilateral exchange and local empowerment could be achieved.

After the inception of this program, a study was conducted in which the members of the community were asked their opinions on the objectives of the MPA. 80 percent agreed that the MPA should have zones where only artisanal fishing (small scale, subsistence fishing) should occur; 97 percent agreed that there should be zones for conservation of species and habitats that are closed to fishing; 86 percent agreed that water sports should take place in the MPA, with the main reasons for these opinion being improved marine conservation and productivity. The high ratings given to ecosystem conservation indicate that the community participation programs have helped to build a

conservation ethic. The support for MPAs that resulted from involving stakeholders from the beginning – by working together to define problems and create solutions, as well as to implement the projects – was extremely high and fostered a great sense of trust and involvement (Howard *et al.* 2002).



Figure 31. Visioning workshop held in San Andres (Mow, 2006).

Negative Case Studies

The case studies which have been selected for review in this section are described as negative because they are examples of where the results of the action taken with regard to the marine protected area and its quest for sustainable tourism have been unsuccessful. These negative results can be environmental, economic, societal or a mixture of the three and each case study described in this section shows the unsuccessful elements of the plan that it has followed. As with the selection and classification of the positive case studies,

these were done so by myself on the basis that they met the criteria that would make them comparable to the Bluefields Bay MPA. This means that they were all relatively small areas in areas which have desirable tourist attractions in place. These case studies, however, do not meet the principles for sustainable tourism.

Twin Rocks MPA, Philippines. This is an example of where a destabilizing conflict exists between local fishers and dive shop owners. The involved dive shop owners are generally from the capitol city, much more affluent than the local fishers and politically well-connected with the local officials. As a result, these elites are more able to yield greater influences over MPA management practices and have took control from the founding (Oracion, 2003). In 1999, the resort owners purchased the near shore lands and are the main enforcers of the MPA.

Predictably, fishers, who initially voluntarily protected the no-take area over a period of 7 years as part of the community-based management regime, are either losing interest in the MPA or are plotting how to stop diving inside the reserve and reassert their influence. When asked why they are losing interest, informants expressed a general sense of mistrust of the dive industry and concern that MPA management is no longer fair (White, Hale, Renard and Cortesi, 1994).

From an exclusively biological perspective, conditions at Twin Rocks are only improving. From a social perspective, such disregard for the community based regime represents a failure (Christie, 2004). This example shows how the three pillars of sustainability – environment, economy, society – are difficult to balance.

Bunaken National Park (BNP), Indonesia. The management process in Bunaken has not been a smooth one and has generated considerable controversy (Merrill,

1998). Initially, Indonesian central government agencies considered dislocating local fishing communities within the park. Local communities and an Indonesian nongovernmental organization effectively resisted that proposal. More recently, park managers have engaged local communities in a consultative process. While consultation is ongoing, some social scientists and local Indonesians have expressed concerns that the park management system is too hierarchical and implicitly favors the dive industry and particular ethnic or religious groups (Lowe 2003).

In short, some stakeholders do not feel that economic benefits are being equitably shared - a fundamental condition for long-term success of MPAs (Pomeroy, Oracion, Caballes and Pollnac. 2003). While dive tourism has been active in the area since the 1970s, the number of visitors has greatly increased since 1993. Approximately 13,361 Indonesian tourists and 7,213 foreign tourists visited BNP between March 2001 and March 2002. This is a dramatic increase from 2,248 visitors in 1985. These numbers are based on entrance fee collection figures collected by the local management board. However, in a survey in 1999, it was found that out of 368 jobs in BNP's tourism industry, only 24.5% went to native Bunaken National Park residents (Christie, 2004). As demonstrated in the Twin Rocks MPA, disparities in income and the perception that benefits are not shared equally is a potent scenario that can quickly undermine what popular support may exist. The new zonation scheme in the park is also controversial. Interviews demonstrated that some fishers feel that the current zonation scheme is unfair on the grounds that it protects the best fishing areas exclusively for diving and does not allow for necessary seasonal relocation of fishing around the islands (Merrill 1998).

Analysis Toolbox

As Yin (2003) stated, methods of data collection follow carefully articulated steps: the use of multiple sources of evidence, the creation of a case study database, and the maintenance of a chain of evidence. The steps have been followed in the case study analysis and this has led to the creation of a database. This database is in the form of an analysis toolbox whereby sustainable tourism indicators have been identified, based on Gibson's principles (2005). Later, the components from both the positive and negative case studies will be put into the analysis toolbox in order to create a template of actions to follow or avoid, based on the case studies that have been analyzed.

Case Study Analysis

After examining the positive and negative case studies and breaking down the identified sustainable tourism indicators, it is now possible to pick apart the case studies and put the results into more specific categories. The results in this section help to show which sustainable tourism indicators have been met and which ones the case studies lack. This will be important when assessing Bluefields Bay and devising strategies for meeting the sustainable tourism indicators there as some of these examples could be followed or avoided depending on whether the case study shows positive or negative results.

Positive Case Studies. The breakdown of the positive case studies (Table 8) shows that all of the sustainable indicators which were identified had examples which can be used to learn from. Some of the most valuable points to be drawn from these examples were: the planning processes that were undertaken and the inclusion of a variety of appropriate parties; the training that was given to the locals for jobs like park

rangers, tour guides and hotel employees; the methods of increasing revenue such as charging a fee for diving; using the fees from diving for maintenance of the protected areas; requiring thorough environmental assessments for any development proposals; maintaining community support by including them in decisions and providing them with jobs. All of these examples can be applied to Bluefields Bay. The information that we have about the natural environment in Bluefields helps to show that the area could be used for diving and therefore implementing a diving fee would be a good idea. Research into the price of diving fees will be necessary in order for Bluefields Bay to position its diving attraction in a logical place in the market – this means that in the initial stage of the diving industry the prices should be lower than the average fees charged in other similar locations in order to attract tourists. We also know that the community is very interested in the development of the tourism industry and so by keeping them heavily involved in the planning process, like these examples did, then the support should continue which will lead to a better overall destination. This goes hand in hand with the training that the plan should attempt to get for the locals in order to make them appropriately qualified for the new jobs which would appear in the area as a result of an increase in sustainable tourism.

Table 8. Analysis toolbox with positive results, derived from case study analysis.

Sustainable Tourism Indicators	Examples	Positive Case Study Examples
Socio-ecological System Integrity	Build human-ecological relations Maintain the long term integrity of socio-biophysical systems Protect irreplaceable life support functions	CICP – spectacular coral reef; protected breeding ground for fish, coral and other species BMP – funding to place restrictions on diving and fishing practices in the park; all divers required to take a diving course before use of the park TNP – 500% increase in the turtle nesting population as a result of the Sea Turtle Conservancy program SAA – four year plan implemented to conserve biodiversity and ensure sustainable use of the coast
Livelihood sufficiency and opportunity	Members of the community have enough for a decent life Opportunities to seek life improvements No compromise to future generations opportunities	CICP – local fishers are trained by marine biologists and volunteers to become park rangers TNP – training given to locals to give them the skills to be tour guides and hotel employees EMP – division of the income generated in order to support the community, coastal management and equipment for the protection of the park SAA – four year plan also included aims to enhance equitable distribution for the local economy, preference was given to the locals in the distribution of jobs
Intragenerational equity	Health Security Social recognition Political influence	BMP – Fees enforced for use of the parks are used to help with operations and maintenance of the park SMP – Despite the government withdrawing funding, the park managed to remain successful through donations, self financing and diver fees SAA – the community is heavily involved in the way in which the park is to be used – a study was conducted which asked them their opinions on the different uses of the park
Intergenerational Equity	Enhance the opportunities for future generations	CICP – Regulated and controlled ecotourism and recreational activities generate revenue to sustain the MPA BMP – Restrictions placed on the number of divers and fishers using the marine park

Table 8, continued

Sustainable Tourism Indicators	Examples	Positive Case Study Examples
Resource Maintenance and Efficiency	Reduce extractive damage Avoid waste Cut overall material and energy use	CICP – all construction was done with state of the art architecture, with zero impact on the environment and in keeping with the natural landscape BMP – all major development proposals must be accompanied by a thorough environmental impact assessment done by a professional
Socio-ecological civility and democratic governance	Build the motivation of individuals and communities Collective decision making bodies Collective responsibility	BMP – members of the community gathered together to voice their concern for the protection of the turtles, spear fish and coral reef TNP – change in the mentality of the residents now they are aware of the success that sustainable tourism efforts can bring them in terms of income
Precaution and adaptation	Avoid poorly understood risks of damage to the foundations of sustainability Plan to learn, design and manage for adaptation	CICP – Used marine biologists to help plan the park and train the workers; described as an exceptionally well managed park SAA – a multidisciplinary team employed to enforce the plan, including marine biologists, a geographic information scientists, engineers, economists, coordinators, educators, community promoters and legal consultants
Immediate and long term integration	Seek mutually supportive benefits that foster sustainability	CICP – Education center SMP – Interest from the locals in increasing the educational resources available to the visitors EMP – 90% of community were still in favor of the project two years after its adoption SAA – outreach and education programs are in place to raise awareness and promote stewardship

CICP = Chumbe Island Coral Park
 BMP = Bonaire Marine Park
 TNP = Tortuguero National Park
 SMP = Saba Marine Park
 EMP = Esperanza Marine Park
 SAA = San Andreas Archipelago

Negative Case Studies. As important as it is to look at case studies where positive results have been seen, it is just as crucial to look at ones where the results were not what were wanted or expected (Table 9). Often the jobs that are created as a result of the increase in tourism don't go to the local people, so in Bluefields perhaps one of the things they should focus on is ensuring that a certain percentage of the new jobs go to people who live within a certain catchment area. Another negative consequence that was seen was the lack of involvement of the locals in the decision making processes which had the effect of a lack of interest by the community members. This lack of interest means that the attitude towards any initiatives is negative and therefore the overall tourism product isn't delivered in a way that would be expected. As well as this, the examples showed that often the control of the area went to particular groups within society such as religious or ethnic groups or resort owners. In order to try and avoid this happening in Bluefields Bay, it is important to keep the BBFFS as a strong figurehead for tourism based around the MPA.

Both the positive and the negative examples have provided an insight into plans or recommendations that can be applied in the assessment and planning phase for Bluefields Bay. Of course, each location is individual and no two places will experience the same outcomes even if the same methods are employed at each place. But by doing research into potential outcomes, then the most appropriate plans can be suggested for implementation in Bluefields Bay.

Table 9. Analysis toolbox with negative results, derived from case study analysis.

Sustainable Tourism Indicators	Examples	Negative Case Study Examples
Socio-ecological System Integrity	Build human-ecological relations Maintain the long term integrity of socio-biophysical systems Protect irreplaceable life support functions	BNP – the zoning areas protects the best areas of fish for diving and this does not allow for necessary seasonal relocation of fishing around the island
Livelihood sufficiency and opportunity	Members of the community have enough for a decent life Opportunities to seek life improvements No compromise to future generations opportunities	TR – Non-locals are taking the jobs, as a result they are becoming more affluent and gaining more control over the MPA BNP – Only 24.5% of the jobs related to the MPA and dive industry have been given to natives
Intragenerational equity	Health Security Social recognition Political influence	TR – lack of influence for the locals when it comes to decision making as a result of their lower level of connectedness with political officials
Intergenerational Equity	Enhance the opportunities for future generations	TR – local fishers lose interest in the MPA and look to stop the dive industry and reassert their influence
Resource Maintenance and Efficiency	Reduce extractive damage Avoid waste Cut overall material and energy use	
Socio-ecological civility and democratic governance	Build the motivation of individuals and communities Collective decision making bodies Collective responsibility	TR – Resort owners bought the near shore lands and are the main enforcers of decisions and actions BNP – Locals feel that the decisions made favor the dive industry, particular religious and ethnic groups

Table 9, continued

Sustainable Tourism Indicators	Examples	Negative Case Study Examples
Precaution and adaptation	Avoid poorly understood risks of damage to the foundations of sustainability Plan to learn, design and manage for adaptation	
Immediate and long term integration	Seek mutually supportive benefits that foster sustainability	

TR = Twin Rocks

BNP = Bunaken National Park

CHAPTER 5: COMMUNITY ATTITUDE ASSESSMENT

The third objective is to assess the attitudes and perceptions of the local community stakeholders on the role of the Bluefields Bay MPA as a benefit to the community and as a potential driver for tourism. This objective requires the need for qualitative data from the local residents and so the method employed to take care of this objective was to conduct interviews with members of the community upon visiting the area in January 2014.

Assessment of the Attitudes of the Community Stakeholders

Miller and Auyong (1991) spoke of the moral obligation to involve the local population in the projects that affect them. As key primary stakeholders in marine tourism, traditional small scale maritime and coastal communities should merit special consideration on most coastal management agendas (Miller and Auyong, 1991).

Coastal communities are likely to display many, if not all, of the characteristics distinguished by Borrini-Feyerabend (1996) which vindicate their vital role in the planning and management of protected areas: existing rights to land or natural resources; continuity of relationship as opposed to other stakeholders (for example, residents versus tourists); unique knowledge and skills for the management of the resources at stake; losses and damage incurred in the management process; historical and cultural relations with the resources; degree of economic and social reliance on the resources; degree of effort and interest in management; equity in the access to the resources and the distribution of benefits of their use; the compatibility of the interests and activities of the stakeholder with government conservation and development policies; present or potential

impacts of the activities of the stakeholder on the sustainability of the resources base (Borrini-Feyerabend, 1996).

It is clear that the involvement of the community stakeholders is a vital part of the process of establishing sustainable tourism. The Sustainable Livelihoods Approach (SLA) offers a useful integrative framework for examining the impacts of tourism, both positive and negative on peoples' assets (Ashley, 2000). The approach is people-centered, designed to be participatory and has an emphasis on sustainability. The SLA approach recognizes diverse livelihood strategies, can be multi-level and can be dynamic. At the heart of the SLA lies an analysis of five types of assets upon which people draw to build their livelihoods. These are:

- i. natural capital (the natural resources stocks upon which people draw for livelihoods);
- ii. human capital (the skills, knowledge, ability to labor and good health important to be able to pursue different livelihood strategies);
- iii. physical capital (the basic enabling infrastructure such as transport, shelter, water, energy and communications);
- iv. financial capital (the financial resources available to people such as savings, credit, remittances or pensions, which provide them with different livelihood options);
- v. social capital (the social resources such as networks, memberships of groups, relationships of trust upon which people draw in pursuit of their livelihoods) (Glavovic, Scheyvens and Overton., 2002).

This information supports the community attitude survey method used in this study, in order to assess the community stakeholders' opinions and viewpoints about the potential for the MPA at Bluefields Bay to support sustainable tourism. The input and involvement of the community is vital to the chances of success for sustainable tourism. If the five types of assets described above are in place, or have the potential to be in place

without too much change occurring, and the community is supportive of sustainable tourism goals, then the sustainable tourism assessment will produce positive results.

In order to complete this stage of the methods, a group of Missouri State University professors, graduate and undergraduate students visited Bluefields Bay in January 2014. Our group had several tasks to accomplish during this trip, including scientific research into the coastline erosion, water quality and soils. But in terms of the research that was required for this study, a social research component was required and this involved talking with several members of the Bluefields Bay community.

Collaborative Institutional Training Initiative was completed prior to our trip to Jamaica.

The members of the community who were selected to interview were selected by convenience, this meaning that people who we ran in to and had time to talk were asked questions. This method actually developed into a snowball technique whereby the first few people that we spoke to mentioned other people who might be of interest for us to talk to. This led to an accumulation of interviews with several different community members. The approach that was taken when talking to the interviewees was a conversational style. This was done in order to make the members of the community feel at ease. The conversation involved some general talk about who we are, where we are from and why we were there. Then we began to ask the participants about their role in the community, including what they do, how long they have lived there, and their age and education level. After this, we then began to ask their thoughts on the MPA and whether they thought it was a positive or negative thing. As well as this, we asked them whether they believed that the MPA could lead to tourism development, or an

increase in the existing tourism industry. The majority of the people were very forthcoming with information and this showed that they are keen to be involved in their community and are interested in any changes or potential changes that might be occurring there. The information was recorded in note form after each interview was completed. Results of the interview were organized in a table by category and attributes to be used for analysis (Table 10). However, in order to keep the identity of the interviewees' private, the results were put into categories. Some of these categories include age range, gender and employment type (primary, secondary, tertiary or quaternary). Primary jobs involve getting raw materials from the natural environment such as mining, farming and fishing. Secondary jobs involve making things, such as manufacturing cars and steel. Tertiary jobs involve providing a service like teaching, nursing or waitressing and quaternary jobs involve research and development such as information technology. A category was also created for tourists because they are not employed in Bluefields, therefore they were just classified as tourist.

In addition to this initial information which was useful for giving an insight into the demographic characteristics of the community stakeholders, the next information which was collected was the thoughts and opinions of the stakeholders about the marine sanctuary. This information was broken down into two tables, one positive and one negative, and the information was then categorized into whether it is referring to social, economic or environmental ideas, or whether it overlaps in two or more categories. This breakdown of information will allow for an easier analysis of the information and a clear understanding of the main ways in which the MPA is good or bad in the opinion of the stakeholders.

Table 10. Results table outline of the community stakeholders' attitude assessment, with an example of how the information was recorded.

I.D.	Age category	Gender	Specific Employment	Education level	Time spent in area	Aware of sanctuary
1	40-49	Male	Tertiary	High school, practical training	All life	Yes
2	20-29	Female	Primary	High school, practical training	Less than ten years	No

The final part of the community stakeholders' attitude assessment that was conducted when in Jamaica was to ask the stakeholders what they thought would be good ideas that could increase the sustainable tourism in the area. Again, this information was broken down into social, economic and environmental categories in order to help to identify areas that are either lacking or popular and use this information to make recommendations. Both the negative and positive thoughts on the MPA and the ideas about sustainable tourism were put in the table anonymously in order to get an over view of what the community as a whole thought, rather than to highlight certain individual members of the community and their individual opinions. This allows for an objective assessment of the community. By having the demographic information, an idea about the general characteristics of the sample population is available, so this in itself gives a good insight about the community.

Results of the Attitudes of the Community Stakeholders

The following tables show the profiles of the people who were interviewed and the categorization of the positive and negative opinions of the sanctuary in terms of social, economic and environmental factors. In Table 11 the interviewees are listed in identity numbers in order to protect their privacy. However, the other demographic

components of age, gender, employment and education are all a little bit more specific in order to allow for inferences to be made about what these sample demographic characteristics might say about the population. In Tables 12, 13 and 14, the thoughts and opinions are simply listed in the category or categories that they fall into. No connection between what each interviewee said what is made in these tables in order to not associate certain community stakeholders with certain thoughts. This organization allows for a more general overview of the positive and negative thoughts and ideas which can be used to make recommendations for sustainable tourism around the MPA.

Table 11. Profiles of the community stakeholders that were interviewed.

I.D.	Age category	Gender (M/F)	Specific Employment	Education level	Time spent in area	Aware of sanctuary
1	40-49	M	Tertiary	High school, practical training	All life	Yes
2	30-39	F	Tertiary	University level	All life	Yes
3	40-49	M	Primary	High school, practical training	All life	Yes
4	20-29	M	Primary	High school	All life	Yes
5	20-29	F	Tertiary	High school	All life	Yes
6	60-69	M	Tertiary	University and beyond	Over 20 years	Yes
7	60-69	F	Tertiary	University and beyond	20 years	Yes
8	40-49	M	Tertiary	High school, practical training	Less than 5 years	Yes
9	40-49	M	Primary	High school, practical training	All life	Yes
10	30-39	M	Tertiary	High school, practical training	All life	Yes
11	50-59	M	Tertiary	University level	5-10 years	Yes
12	30-39	F	Tertiary	High school, practical training	All life	Yes
13	20-29	F	Tertiary	High school, practical training	All life	Yes
14	40-49	F	Tourist	Doctorate level	2 weeks	No
15	40-49	M	Tourist	Doctorate level	2 weeks	No
16	40-49	F	Tertiary	High school, practical training	All life	Yes
17	20-29	M	Primary	University level	Less than one year	Yes
18	40-49	M	Tertiary	High school, practical training	All life	Yes

Table 12. Results of the positive effects that the sanctuary has brought to the Bluefields Bay area, according to the community stakeholders responses.

Result ID	Environmental	Social	Economic
1	Quality and quantity of fish has increased over time		Quality and quantity of fish has increased over time
2			Carib-Save has been very influential in terms of funding
3	Noticeable increase in lobsters, particularly in the shallow areas	The large majority of the community supports it	
4		Many community volunteers	Many community volunteers
5			
6	Wardens are on patrol 24 hours a day	Wardens are on patrol 24 hours a day	
7			Recently acquired a \$20,000 boat to be used for patrolling – thanks to funding from Carib-Save
8		It has helped to provide more jobs in the community	It has helped to provide more jobs in the community
9		It is a year round business/activity	It is a year round business/activity
10	Emphasizes the belief that nature is important and it needs to be protected		
11	Sets a precedent for the underlying principle of the sanctuary: improvement of the natural features of Bluefields Bay		
12	It is a good starting point for making the community's goal of being fully sustainable a reality	It is a good starting point for making the community's goal of being fully sustainable a reality	It is a good starting point for making the community's goal of being fully sustainable a reality

Table 13. Results of the negative effects that the sanctuary has brought to the Bluefields Bay area, according to the community stakeholders responses.

Result ID	Environmental	Social	Economic
1		The funding and payments from the government aren't punctual or reliable	The funding and payments from the government aren't punctual or reliable
2		Only 3 out of 9 workers are getting paid	Only 3 out of 9 workers are getting paid
3		On average 40 court cases per year as a result of illegal fishing in the sanctuary	On average 40 court cases per year as a result of illegal fishing in the sanctuary
4		Is the sanctuary too wide? All the good fish stay inside the sanctuary which makes it difficult for fishers with small boats who can't afford the \$1000 J (≈\$10 US)a day in fuel to sail further out to places which aren't in the sanctuary, where the quality of fish is lower anyway; Overfishing in the areas just outside the sanctuary makes it hard for them to make a living	Is the sanctuary too wide? All the good fish stay inside the sanctuary which makes it difficult for fishers with small boats who can't afford the \$1000 J (≈\$10 US)a day in fuel to sail further out to places which aren't in the sanctuary, where the quality of fish is lower anyway; Overfishing in the areas just outside the sanctuary makes it hard for them to make a living

Table 14. Summary of the community stakeholders' ideas for sustainable tourism.

Result ID	Environmental	Social	Economic
1		There has been a slight increase in the number of visitors, particularly educational groups – a focus on increasing this market (particularly international groups) would be a good idea	
2		The community wants to be fully sustainable so that they don't have to rely on the government for money: idea to offer scuba diving and boat tours which will lead to a need for a rental shop, boats and instructors in the future. This will provide jobs and money.	The community wants to be fully sustainable so that they don't have to rely on the government for money: idea to offer scuba diving and boat tours which will lead to a need for a rental shop, boats and instructors in the future. This will provide jobs and money.
3			Idea that a portion of the money from fines be used to fund the sanctuary or the wardens
4		Interest was shown in how they could benefit - by diversifying the economy, the locals could really benefit e.g. be tour guides, diving instructors	Interest was shown in how they could benefit - by diversifying the economy, the locals could really benefit e.g. be tour guides, diving instructors
5	Idea to extend the sanctuary further out, encompassing more of the coral reef and therefore increasing the quality of the water for diving		

Table 14, continued.

Result ID	Environmental	Social	Economic
6		Roads will need to be improved to increase the tourism potential	Roads will need to be improved to increase the tourism potential
7		Current plans are in place by a local fisher to turn a beach hut into a vegan restaurant and internet café, to build a public restroom across the street, increase the organic farm capacity that is connected to the hut; be open 24 hours	
8		Potential idea to get more tourists to the area: emphasize sports – bring foreign soccer clubs into the village for winter training and matches	
9		Low impact activities like yoga retreats could be combined into environmental awareness retreats	

Analysis of the Community Stakeholders Views on the MPA and Tourism

Demographic Analysis. The community members have a sense of pride and care about their village, and this was demonstrated by their influence on the implementation of the MPA. So therefore it is important to include them in any research and ideas about ways in which the MPA can be used as a catalyst for sustainable tourism. The demographic information that was gathered from the community stakeholders showed some interesting information. One notable demographic characteristic was the education level of a lot of the interviewees. Eleven out of the 16 interviewees who had lived in the area for either their whole life or at least five years had an education level of high school

or high school and practical training. This implies that the skill set that these members of the community have are at quite a basic level. The education level is reflected in the jobs that the community members have. Most of the types of employment are in the tertiary sector which might include jobs such as cooks, waiters, bar tenders and tour guides. It is a good thing for the tourism industry that these kinds of services are provided, however, in order to make the services better, perhaps some extra training could be supplied to the workers. High school and practical training implies that skills such as communication with non-locals, marketing, management and budgeting for small businesses are not at the highest level amongst the local workers. Therefore if a training program was implemented to teach the locals these such skills, then they could be applied to the businesses and make the overall tourism service products better in terms of efficiency and quality. This would likely have the knock on effect of an increase in business, profits and reputation. Building relationships with the tourists will increase the positive impression that they have of the area and this will leave the tourist satisfied and happy to contribute to the local services and ultimately the local economy.

Another notable characteristic from the community stakeholder profiles was the awareness that they had about the sanctuary. Besides the two tourists that were interviewed, everyone knew about the sanctuary and when they were asked about their thoughts and opinions on it, they all had valuable opinions. Of course, the implementation of the sanctuary in 2009 was a major event with a lot of consequences for the local people and local economy. The awareness that the locals had and the support that they showed for the sanctuary were generally very positive and encouraging. This helps to support the idea that tourism can be developed around the marine protected area.

Rather than seeing the MPA as a restriction to their growth as a society, the locals see it as a way to enhance themselves as a sustainable society and are open to the idea of tourism.

Opinions on the Sanctuary. The effects that the sanctuary has had on the Bluefields Bay area, in the opinion of the community stakeholders (Tables 12 and 13), showed more positive effects than negative effects. The positive effects were equally distributed among the three categories of sustainability that were used to distinguish the results (environmental, social and economic), this meaning that the sanctuary is producing encouraging results as far as the locals are concerned.

Some of these effects that were recorded provide interesting discussion points which can be analyzed in terms of what they can mean for the sustainable tourism industry in Bluefields Bay. The social points which were mentioned included the fact that the activities associated with the MPA are year round activities. This means that tourism activities and facilities would provide year round employment to the locals and year round business if they were correctly marketed and managed. The positive economic effects that have been seen since the introduction of the sanctuary include the fact that they are receiving funding from the organization Carib-Save which shows that the area is seen as an attractive place to invest money. Carib-Save has a mission of supporting and enhancing livelihoods, economies and the environment around the world in an era of global environmental change and economic restructuring, providing innovative, dynamic and evidence based solutions (C-Fish, 2014). The organization has helped to fund some projects in the sanctuary, including providing the BBFFS with a boat which is to be used to patrol the sanctuary. Carib-Save became aware that illegal fishing was occurring in the

sanctuary and therefore supplied the boat. The MPA at Bluefields is just one example of the projects that Carib-Save is involved in and so therefore it is promising that they are interested in the protection of the sanctuary. Hopefully if Bluefields can continue to make progress, there could be potential to receive more funding.

In terms of the positive environmental effects that have been seen in the sanctuary, the quantity and quality of the fish has been increasing since 2009, with a particularly noticeable increase in the lobsters, according to the community members. As well as this, the sanctuary is patrolled by wardens 24 hours a day in order to ensure that no illegal fishing occurs. Some of these wardens work voluntarily and this emphasizes the belief from the locals that the sanctuary is of utmost importance. Some community members talked about how nature and the environment is all that they have and so it must be protected. The positive environmental effects can be used in the promotion of sustainable tourism in several ways. Perhaps educational talks accompanied by tours of the sanctuary could be offered by the locals to explain the need for the sanctuary and how it works. This would provide employment opportunities to other community members, not just the wardens. This gives the MPA a higher sense of value to the community members if they are able to benefit from it from an economic standpoint. From the responses after talking to the locals, it seems like they would be happy that tourists are interested in the sanctuary and would take pride in informing them about it.

Of course, not all of the thoughts about the sanctuary were positive, yet the negative thoughts were quite minimal. There were no negative thoughts on the environmental effects that the MPA is having on the area, which shows that the MPA is

accomplishing what it was put there to do. This is obviously extremely encouraging for the marine biodiversity and the natural environment in the area.

Most of the negative thoughts about the sanctuary revolved around money. One of the main concerns was the fact that even though the MPA is constantly patrolled by wardens, only three out of the nine wardens are getting paid. The payments that the wardens receive come from the government, so clearly the government is behind schedule and hasn't made this a priority. This implies that an appeal to the government should be made by the BBFFS in order to try and get on track with the payments. It is sad to see that the hard and important work of the wardens is not getting recognized when they are protecting the MPA which is a legally enforced area. And while it is good that the MPA receives funding from Carib-Save, it isn't acceptable that the government isn't helping with the funding of the area.

Another negative thought which involved money was that of the fishers who still wanted to fish but didn't like the fact that they have to sail a lot further out to sea in order to fish. While they were happy that the quality of fish and the marine environment was improving in the bay, they were also frustrated because this meant that their livelihood has been made more difficult. The boundary of the sanctuary marks an invisible barrier for fish because they have the tendency to flock to the protected area which provides a better habitat and breeding ground for them. From a fisherman's perspective this makes their job much harder because not only do they have to now travel further out to sea which costs them more money in fuel for their boats, but they also have to settle for the lower quality of fish that still find themselves in the area outside the MPA. Perhaps it is time that these fishers started to look for a new form of employment, and with an increase

in sustainable tourism, maybe they could be trained to be tour guides or diving instructors. This way they would still be involved with the marine environment, but they would have a more stable and secure job with less frustration.

Community Stakeholders' Ideas about Sustainable Tourism. As well as asking the community stakeholders their opinions about the effects of the sanctuary, they were also asked their ideas about sustainable tourism in Bluefields Bay. A generally positive response was received, with the majority of the ideas having social and economic benefits, which makes sense since the environmental benefits are clearly happening and will continue to be as long as the MPA is in place. Some ideas about the types of tourists to market the area towards were put forward by the members of the community and these included educational groups, sports teams and yoga groups. All of these types of tourists could be considered sustainable tourists as a result of the low impact activities that they would undertake and the controlled numbers that they would arrive in. Educational groups, like our group from Missouri State University, will be in the area to pursue academic goals which means that they have an interest in the local culture and natural environment. Sports teams like soccer, cricket or track and field teams could visit the area in the winter season in order to have some warm weather training if they are from places in the northern hemisphere which don't have good winter weather. Small tournaments between the visiting sports teams and the local teams would be a good way to encourage positive relationships between the locals and the visitors. Yoga retreats to the area would also support the idea of sustainable tourism. The relaxing atmosphere that the coastal village of Bluefields has is something that seems fitting for a place to do yoga. These three groups of tourists which the local residents suggested would be good to target as

they all seem like logical choices. Whether the main purpose of the visit is to do research, play sport or do yoga, there is also going to be time for these groups to explore the area. The opportunity to inform these groups about the MPA, have them stay in local guest houses and eat at local restaurants while they are in the area is a good building block for sustainable tourism.

It was encouraging to hear that the locals were aware that some things need to be improved if sustainable tourism is going to be a significant sector of their economy. The road network was highlighted as something which should be targeted for improvement because if a larger volume of people are going to be arriving in the area, it is necessary to prepare for this in advance by improving the road surface. Maybe an application to the government for assistance with improving the road network could be made. If this is supported by the plans for tourism, it seems reasonable to think that at least some funding could be given to improve the roads.

Other ideas that the locals had fit with a lot of the ideas that the principles of sustainable tourism encourage, such as creating jobs for the locals in the tourism industry. They were keen to talk about the jobs that they could embrace, such as diving instructors, tour guides or workers in a visitor center or educational center if these types of activities and initiatives were introduced. It was of no surprise that the locals were keen to discuss these opportunities because of their generally positive attitude towards the sanctuary and sustainability, as well as their sense of pride in their village and what it has to offer.

One member of the community talked about his own initiatives which he is in the process of implementing. He took us on a tour of his beach hut and explained how he is in the process of turning it into a restaurant and internet café which would appeal to the

tourists. This kind of low scale infrastructure improvement is a good example of the changes that would help to boost Bluefields Bay as a sustainable tourism destination. The beachfront location of this development and the local ownership would be something that sustainable tourists would enjoy because there is a connection to the natural environment, the MPA and the local community.

An idea that the community members mentioned, which would probably be a longer term goal for the area, is to expand the area that the MPA covers. The rationale behind this idea is that if the MPA is larger, then this will increase the quality of the marine environment for the fish species and also for the coral reef which would have the knock on effect of making the area a better location for divers. If the MPA were to be expanded, then this would mean that a greater area needs to be patrolled which would mean more wardens are needed, the diving area would be increased, the boat tours would be able to encompass a greater area and the significance of the MPA goals would be increased if a greater area of the water was protected.

It is clear from looking at both the existing tourism attractions and facilities and the thoughts and opinions of the local community stakeholders that there is a lot of potential for sustainable tourism to become a more significant part of Bluefields Bay's economy. The MPA is central to this potential because it is something which gives Bluefields an identity. This area is not just a regular small beach town with a fishing industry, instead it has the unique feature which focuses on the protection of the marine environment. The community support and interest in the sustainability of their village, combined with the existing conditions and facilities for tourism mean that with some

strategic and realistic planning, sustainable tourism could provide a lot of benefits to the Bluefields Bay area.

CHAPTER 6: RECOMMENDATIONS

The final objective of this study is to develop recommendations for sustainable tourism opportunities that benefit both the environment and the community in Bluefields Bay. The identification of the current tourism infrastructures that are in place, the analysis of similar case studies and the assessment of the community stakeholders thoughts and input have all led to a point in this research whereby some realistic recommendations can be made on how the MPA at Bluefields Bay can foster sustainable tourism.

Sustainable Tourism Recommendations for Bluefields Bay

The physical foundations are in place for the development of sustainable tourism. The coastal environment, year round good weather, and scenery are all components which tourists seek and are found in Bluefields Bay. These components are made more unique by the presence of the MPA and the local flair. If the planning process is done meticulously, then there is definitely a lot of potential for sustainable tourism to be a positive component of the economy of Bluefields, both now and in the future.

There are several different methods that can be used in tourism planning, and for the purpose of this research, the chosen method is the three phase approach. The objective of this approach is to formulate a long term development framework for tourism (10-20 years) with emphasis on policy and strategy, planning, institutional strengthening, legislation and regulation, product development and diversification, marketing and promotion, tourism infrastructure and superstructure, economic impact of tourism and tourism investment, human resource development and socio-cultural and environmental impacts of tourism. This includes a short term (three year) action plan for

priority actions to be undertaken to kick start sustainable tourism development, followed by a medium term plan and eventually a long term plan (UNWTO, 2014).

The first phase will include recommendations which are the most pressing and achievable recommendations; the second phase will include some medium range goals and the third phase will have much longer range goals which will depend on the success of the recommendations which were made in the first and second phases. Table 15 explains the recommendations for each of the phases and all of the recommendations are based on the information which has been gathered in the earlier stages of this research.

Table 15. Three phase sustainable tourism recommendations for Bluefields Bay.

Planning Phase	Sustainable Tourism Recommendations
Phase 1	<ul style="list-style-type: none"> Cosmetic improvements to the guest houses Increase marketing of the area, such as posters and leaflets at the airport Market snorkeling and diving activities in the clear waters Training programs for the locals Offer educational boat tours of the sanctuary
Phase 2	<ul style="list-style-type: none"> Make a structured tourism plan with 1, 5, 10 and 20 year goals Use the plan to apply to the government for funding aimed at consistent payment for wardens, training programs for locals and road improvements Have a target for the percentage of jobs that are to be given to locals Target the marketing towards low impact groups such as educational groups, sports teams and yoga retreat groups Add some small restaurants which are locally owned and run Add a visitor center which can be a central location for tourism activities Implement a fee for divers to pay before diving
Phase 3	<ul style="list-style-type: none"> Expand the area of the MPA Monitor and modify long term goals in order to adapt to current circumstances and how they are or aren't reaching the sustainability goals Increase accommodation options by adding sustainable lodging

Phase One

The recommendations in this stage are ones which are quite basic and won't be too difficult or expensive to implement. All of the recommendations involve working with what is already in place in Bluefields Bay: the accommodations, the sanctuary and the option to snorkel and dive. The physical and man-made features in Bluefields Bay that are currently in place show that these phase one recommendations are very realistic. A summary of how the phase one recommendations meet the sustainable tourism indicators can be found in Table 16.

Cosmetic Improvements. The accommodation options consist mostly of locally owned guest houses with basic interiors. While these options are satisfactory for the small tourism industry that is present there at the moment, in order to attract more tourists to come to the area, and to provide them with satisfactory accommodation, some changes need to be made to the options which are currently in place. These changes will involve working with what is already in place and improving it. Cosmetic improvements might include: painting and decorating the interior; adding some decorations – these might be in keeping with the culture and the characteristics of the area such as a nautical theme; accessorizing the kitchen and dining room areas since the guest houses provide the option to cook for the guests – this includes having matching dishes and utensils; ensuring that all of the electrical systems are in working order – this includes water systems, power outlets, lighting and air conditioning systems or fans; general maintenance and keeping up with appearance of the house and the garden areas. While all of these recommendations seem very basic, they are not to be overlooked because without a decent standard of accommodation, tourists won't be very impressed with their stay at

Bluefields Bay. It is surprising how little things like adding some pictures and having matching dishes at dinner tables actually have a big impact on tourists' impression of the area. Without these fundamentals in place, tourists will look for alternatives. These might be alternative villages in the parish of Westmoreland, other coastal towns in Jamaica or the Caribbean. The intention of drawing sustainable tourists to Bluefields Bay and using the MPA as an attraction will provide more benefits to the community if the tourists stay in the area. In order to increase the potential of them doing this, there has to be some good quality options for them to choose from.

Marketing. Another phase one recommendation that can be easily implemented with the resources and features that are already in place in Bluefields Bay is marketing of the current attractions. This will increase the awareness of tourists to the area and what it has to offer. In order to target sustainable tourists who are interested in the MPA, the physical strengths of the region need to be marketed. These have already been identified and have led to the idea that snorkeling and diving activities in the MPA are one of the tourist attractions.

Simple marketing techniques such as creating a leaflet or brochure with the physical features and attractions clearly identified can be a starting point. Positioning the leaflets and brochures at the airport or in visitor centers in Montego Bay, Negril and Ocho Rios is one way of trying to develop a tourism market. As well as this, they could be sent to sustainable travel companies in order to try and ensure that the appropriate tourists are targeted. While there may be fees involved to do this kind of marketing, it should be seen as an investment or a catalyst to the future of Bluefields Bay as a sustainable tourism destination based on the MPA. This recommendation can be

considered in terms of the TALC model and would be synonymous with the involvement stage whereby facilities are provided and awareness grows, meaning an increase in visitor numbers (Butler, 1980). The modified TALC model (Figure 3) showed how one of the paths towards sustainable tourism can begin from this point in the TALC model. By encouraging sustainable tourism development at an early stage in the tourism life cycle, the later stages in the cycle can be avoided. The knock on effects from this would be a controlled number of visitors, not exceeding the carrying capacity of the destination and the protection and enhancement of opportunities for the future.

Educational Tours. The community attitude assessment showed that the community stakeholders were aware of the MPA and the purpose of it. As a result of this, another idea is to incorporate the local people and their knowledge into a phase one recommendation. The support for the implementation of the sanctuary that was shown by the locals (BBFFS, 2014) implies that they understand the reasons behind its implementation and are proud of the natural resources that they have in Bluefields Bay and want to protect them. Interestingly, the only people who were interviewed that didn't know about the MPA were the tourists (Table 11) and this suggests that there is a potential opportunity to provide education about the natural resources in Bluefields Bay. This is a phase one recommendation because it is something which can be started right away with the current natural and human resources that are available. Perhaps the Bluefields Bay Fishermen's Friendly Society, who already has a goal of educating its members about sustainable fishing practices and alternative employment practices could create some educational tours. These might be quite basic tours in this first stage of sustainable tourism development, but if the tourism industry grows, more detailed tours

could be developed. Education is a key component of sustainability not only for the locals and the area, but for the visitors. An increased awareness and understanding of the environment means that the principles of immediate and long term integration, precaution and adaptation and livelihood sufficiency and opportunity will be met.

Training Programs. The idea to increase and improve the activities and opportunities in the area call for a need for certain skills. As mentioned in the demographic analysis, the results from the interviews with the community stakeholders (Table 11) showed that high school level and practical training was the education level that the majority of the locals who were interviewed had. In order to ensure that the locals have sufficient skills to be members of the tourism industry workforce, some managerial skills will need to be provided. Perhaps they could apply to one of the universities on the island for business students to come and share some of their knowledge and expertise on how to successfully run a business. The training would not need to be extremely extensive, maybe a two week program could be put together. In order to keep the costs down, maybe the locals who partake in the program could offer the students free accommodation and food in exchange for them sharing their knowledge.

Table 16. Phase one recommendations and sustainability indicators matrix.

Sustainability Indicators	Cosmetic improvements to guest houses	Increase marketing	Snorkeling and diving activities	Offer educational boat tours	Training Programs
Socio-ecological system integrity			X		
Livelihood sufficiency and opportunity	X		X	X	X
Intragenerational equity					X
Intergenerational equity					X
Resource maintenance and efficiency			X		
Socio-ecological civility and democratic governance					X
Precaution and adaptation		X			
Immediate and long term integration	X	X	X	X	X

Phase Two

The second phase of sustainable tourism recommendations all require the use of some resources that aren't necessarily currently in place in Bluefields Bay. These recommendations are the next step in the plan to make sustainable tourism an important part of the local economy. The phase one recommendations are simple ways of initially getting tourists into Bluefields Bay, while the phase two recommendations are more structured ways of how to maintain a sustainable influx of tourists. A summary of how the phase two recommendations meet the sustainable tourism indicators can be found in Table 17.

Structured Tourism Plan. If the phase one recommendations are accomplished or in the process of being accomplished, then the basis for creating a tourism plan is in place. The physical and man-made features, basic improvements to the accommodations and an effort to bring tourists to the area as a result of the MPA and what it has to offer, validate the idea that Bluefields Bay can be a sustainable tourism destination. A structured plan with immediate, medium and long term goals will consequently justify the movement towards sustainable tourism being a significant part of the economic sector of Bluefields Bay, with the MPA being a substantial reason for this. The following recommendations should all be included in the tourism plan.

Government Funding Application. One of the main comments that came out of the community attitude assessment was that even though the MPA was accomplishing the environmental goals like improving the quality and quantity of fish in the sanctuary, some of the social and economic outcomes were not as successful as the environmental outcomes (Tables 12 and 13). One particular example of this is the fact that the sanctuary

wardens are not up to date with the payments that they should have received. The MPA is a legally enforced area and therefore the government is responsible for paying the wardens. This prompts the recommendation of applying to the government for an increased amount of funding.

If the tourism plan is well constructed and shows a logical sequence of goals that Bluefields Bay wishes to reach in terms of tourist visitors and economic gains, then this should be a good source of evidence for the government to increase funding to the area. Other sources of funding that should be applied for include training programs for the local people and improvements to the roads in the study area. All three of these applications for funding will be justified by a well written tourism plan. The need for training programs for the local people will increase the business potential of the area because with training, a better overall tourism service will be provided and this will help to build a good reputation and increase the chances of both return visitors and positive word of mouth recommendations. The need for improved roads is an infrastructural necessity. An increase in the number of tourists to the area means that the usage of the current roads will increase and this will add to the current deterioration that is occurring. While Bluefields Bay is still in the early stage of the tourism life cycle, it is important to have appropriate infrastructure in place to allow the life cycle to continue to grow in a sustainable way. Problems like not having good road surfaces and therefore reduced access to the area, or poor service by the locals will mean that the tourism area might enter the decline or stagnation stage of the TALC model. By applying for funding, with the tourism plan showing evidence of how the funding will be an investment, Bluefields Bay is ensuring that they have the greatest chance of overcoming these problems before

they happen. The government is one entity to apply for funding from, but other possible funding sources might be include sustainable tourism and MPA organizations and advocacies, such as Carib-Save who has already helped to donate money to Bluefields Bay for a boat to use to patrol the sanctuary.

Percentage of Jobs for Locals. One of the sustainable tourism indicators is livelihood sufficiency and opportunity and this can be achieved by setting targets for the local community members, in terms of the percentage of the jobs that they have. The case study of the Bunaken National Park showed that in this area, only 24.5% of the jobs were given to the native people and this resulted in a reduction in the support of the ideas being implemented in this destination and conflict between the locals and the outside entities that began to control the tourism industry. So by including the locals in the tourism plan in terms of decision making and including them in the plan, this not only makes them support the concept of the plan, but it also helps to keep the local culture and flair in place.

If the appeal for funding for training programs for the local people is successful, then improvements in things like communication, entrepreneurship and economic stability will be visible. The case study analysis showed that training programs for the locals were implemented in Chumbe Island Coral Park, Tortuguero National Park, Esperanza Marine Park and San Andreas Archipelago. All of these case studies were selected as positive examples because their initiatives worked, and so therefore one of the fundamental ideas to follow is to continuously include the locals in the tourism plan by ensuring that they have jobs. Examples of the jobs that they could have include those in

the service industry such as working in restaurants or hotels and working as a tour guide or, with increased training and education, more scientific or business related jobs.

Target Marketing. Another part of the phase two recommendations and therefore the tourism plan includes a logical assessment of the markets that the sustainable tourism product should be aimed at. Of course, the name sustainable tourists already tells us the general target market, but there are many different groups which might fall into this category. Educational groups, small sports teams and yoga groups were all ideas given by the community stakeholders (Table 14) and the nature of these groups would most likely follow the definition of sustainable tourism: a gentler form of tourism that is generally small in scale, sensitive to cultural and environmental impacts and respects the involvement of local people in policy decisions (McCool and Moisey, 2008). The presence of the MPA and the option to conduct baseline, erosion, habitat or coral reef studies could be options to appeal to educational groups. With regard to the sports teams and yoga groups, the appeal of the coastal environment with an interesting component – the MPA – and the local flair should be promoted. The sports teams and yoga groups will be low impact groups which won't cause damage to the area, and as well as this, they will have some spare time in between practices and they could spend this time doing marine activities.

One of the most important parts to consider in this recommendation is the way in which the tourism attraction of the MPA and the destination of Bluefields Bay is actually going to be marketed. The marketing channels need to be sure to be appealing, yet stress the message that the MPA is the feature of interest, and the activities and features of the area are focused on it. An up to date website with current information, prices, activities

and contact details needs to be available. As well as this, the more modern style of marketing through social media needs to be managed appropriately and deliver appealing messages to the correct markets.

Add Restaurants. The marine environment, activities and accommodations are already in place, yet one thing that is lacking in Bluefields Bay is restaurant options. While the guest houses do offer the option to cook meals for the guests, sometimes tourists want other options too. A couple of locally owned restaurants would make Bluefields Bay more of a sustainable tourism destination and a place that people who aren't necessarily staying in the village might visit if they know of a good quality restaurant in the area.

Add a Visitor Center. Another recommendation which will help Bluefields Bay to become more of a sustainable tourism destination, rather than just a small coastal village, would be the addition of a visitor center. The BBFFS office is already in place at the shoreline and perhaps this could be expanded or another building added to it which is a visitor center. This center would provide people information about the local history, geography and culture as well as the natural environment like the MPA, the fish, animals and plants that are native to the area and, of course, the activities that are available. By having something like this in place, there is a focal point for all the tourist interests and activities and it gives a slightly more professional and structured impression of the initiatives that Bluefields Bay is aiming to achieve in terms of sustainable tourism and protection of the MPA and the natural environment. If the target marketing is successful, then the types of tourists who come to Bluefields Bay are going to be interested in what

there is to see in the area and an informative visitor center is a good way of providing them with appropriate information.

Diving Fee. It has been established that the MPA is a good quality diving environment. In order to ensure that the tourists who use the marine environment to dive in are doing so sustainably, the implementation of a diving fee is a logical option. From the case study analysis, we saw that the Bonaire Marine Park enforced a fee for tourists to use the area and used the money from this fee as a direct contribution to the operation and maintenance of the park. This strategy is one which can be applied to Bluefields Bay. If market research is conducted into the fees that similar locations charge for diving is done, then Bluefields Bay can aim to position itself at a logical place in the market in terms of diving fees. To start out with, it is best to charge a lower fee in order to attract the sustainable tourists to a relatively undiscovered diving location, and as time goes by and the number of visitors is monitored, a further analysis of an appropriate fee should be conducted.

Table 17. Phase two recommendations and sustainability indicators matrix

Sustainability Indicators	Struct-ured tourism plan	Apply to govern-ment for funding	Target percent-age of jobs that are to be given to locals	Target marke-ting	Add small locally owned restaurants	Add a visitor center	Diving Fee
Socio-ecological system integrity	X			X		X	X
Livelihood sufficiency and opportunity	X	X	X		X		
Intragenerational equity	X	X	X				
Intergenerational equity	X	X	X				
Resource maintenance and efficiency	X	X				X	X
Socio-ecological civility and democratic governance	X		X			X	
Precaution and adaptation	X			X			
Immediate and long term integration	X	X	X	X	X	X	X

Phase Three

The recommendations which are provided in the phase three section of the tourism assessment are ideas for the long term future of Bluefields Bay rather than the present or intermediate time frame. These recommendations are indicative of success of the recommendations in the previous phases and they help to show that the sustainable tourism industry is a prominent part of the local economy. A summary of how the phase three recommendations meet the sustainable tourism indicators can be found in Table 18.

Expansion of the MPA. The importance of the MPA to the community and to the tourism industry is not to be underestimated. The tourism activities that are applicable to Bluefields Bay are associated with the marine environment and the notion of sustainability that is seen as a result of the MPA. As a result of this, if the tourism industry were to grow, this leads to the idea of expanding the area of the sanctuary. In theory this will have several benefits. Obviously the environmental benefits would continue to be positive, as has been seen since the implementation of the MPA in 2009. These positive outcomes include a better quality and quantity of fish species, and a wider variety of species. Social and economic benefits that would be produced from an increase in the area of the MPA would result from a larger environment for diving and snorkeling activities and educational tours. These activities mean that possibilities such as an increase in the number of jobs relating to the activities that occur in the MPA might arise. As well as this, with a greater protected area, the possibility of an increase in funding from either the government or other agencies might become available.

Monitoring and Modification. This phase three recommendation is one which should be considered a result of the actions taken in phases one and two. Monitoring

aims at measuring conditions as time goes by in order to identify and predict both positive and negative changes or impacts. Monitoring is quite useful in identifying the social and environmental impact of tourist activities on their surroundings. Furthermore, it leads to a better decision-making process. Environmental monitoring deals with such issues as energy and water consumption, waste generation and disposal, and effects on biological diversity. Monitoring requires setting objectives concerning management, as well as environmental and biodiversity conditions. Moreover, it requires baseline information and indicators to identify changes. Data should be easy to collect, store, and analyze, and results should be comparable to those obtained through previous or subsequent measures, in order to identify changes over time (Rainforest Alliance, 2014).

As the sustainable tourism initiatives are promoted and the MPA is used as an attraction, changes that occur might include different variables, ranging from the number of visitors, the number of money spent by the visitors, length of stay and activities undertaken to the changes that are seen in the water quality and in the species counts. All of these variables should give feedback about what is and is not working in Bluefields Bay and they will also provide information about what to do in order to address the changes and encourage the continuance of the positive changes and reduce the impacts of the negative changes.

Increasing Accommodation Options. The addition of some more accommodation options in Bluefields Bay is another longer term goal to aim for. If the tourism industry grows, then in order to facilitate the tourists, more accommodation options will be needed. These such developments should all be done with the principles of sustainability in mind. Methods seen in the case studies of Chumbe Island Coral Park

and Bonaire Marine Park with regard to development should be applied in this plan.

These methods include requiring any major development proposals to be accompanied by a thorough environmental impact assessment done by a professional and all construction to be done with zero impact on the environment and in keeping with the natural landscape.

Table 18. Phase three recommendations and sustainability indicators matrix.

Sustainability Indicators	Expand the area of the MPA	Monitor and modify the environmental, economic and social changes to allow for adaptation	Ecological guest houses
Socio-ecological system integrity	X	X	X
Livelihood sufficiency and opportunity		X	X
Intragenerational equity		X	
Intergenerational equity		X	
Resource maintenance and efficiency	X	X	
Socio-ecological civility and democratic governance			X
Precaution and adaptation	X	X	X
Immediate and long term integration	X	X	X

CHAPTER 7: CONCLUSIONS

The importance and significance of sustainable tourism cannot be denied. The estimates by the World Travel and Tourism Council show the important benefits that tourism has in an economic sense (Hall and Page, 2002), but just as important as these economic factors are the environmental consequences of the tourism industry. To offset environmental problems like marine biodiversity reduction, toxic waste flow into rivers and seas and deforestation, it is important to address tourism development and create balanced strategies where economic benefits are maximized and the negative consequences of resource waste and degradation are minimized (Cater and Goodall, 1992). The combination of a goal of economic and social stability and improvement and protection of natural and environmental resources is becoming more common in places where tourism is a part of the economy. This leads to the notion of sustainable tourism. A few different definitions and principles of sustainable tourism have been devised over the course of the last twenty years, and for the purpose of this thesis, Gibson's eight principles as defined in the article *Sustainability Assessment: Criteria and Processes*, were used as guidelines for the research (Gibson *et al.*, 2005).

In addition to looking at the principles of sustainable tourism, it is important to understand what this means in terms of the development of an area over time. Butler made a model of the tourism area life cycle (Butler, 1980) and after analyzing this, it was concluded that the principles of sustainable tourism can fit into the model in various ways, depending on the current progress of the area and its tourism industry. For the purpose of this study which focused on the prospects of sustainable tourism in Bluefields

Bay, Jamaica, the relatively undeveloped tourism industry fits quite well into the early stages of the TALC model. This means that an analysis of the characteristics of Bluefields Bay was appropriate to assess whether there was potential for sustainable tourism in the area, and if there was, what needs to be done in order to make it more of a realistic option.

The major attraction to this area was the fact that there is a marine protected area in Bluefields Bay, which already shows a movement towards sustainability. MPAs, which are “clearly defined geographic spaces, recognized, dictated and managed through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values” (IUCN and WCPA, 2008), have several different aims which they wish to achieve. These aims fit closely with the principles of sustainable tourism which have been identified and so therefore it seems logical to try and combine the MPA and sustainable tourism as an attraction. The principles of sustainable tourism which fit most closely with Bluefields Bay and the enforcement of the MPA are resource maintenance and efficiency, precaution and adaption, and immediate and long term integration.

An analysis of the study area, starting generally at the regional scale and then focusing in on Jamaica and particularly the southwest part of the island showed that tourism is an extremely important industry. Sustainable tourism goals offer advantages in several ways and these can be linked to societal and economic goals, such as livelihood sufficiency and opportunity whereby the local community members have the chance to get jobs in the tourism industry. In Bluefields Bay, where fishing used to provide employment to local people, the former fishers can now seek alternative jobs in the

tourism industry, if jobs are created. Moreover, if these jobs are centered on the MPA, then the knowledge that they have about the marine area could make them very desirable employees. An example of how this was successfully accomplished was seen in a case study on Chumbe Island Coral Park in Zanzibar, where the fishermen were employed and trained as park rangers. This coral park has been recognized as a successful sustainable destination by the United Nations Secretary on his report on protection of coral reefs for sustainable developments and livelihoods (United Nations, 2012).

The Chumbe Island Coral Park was one example of the use of case study analysis that was done in order to see what other comparable locations had done. This method is useful as it can suggest what to do in a similar situation and shed light on the phenomenon (Meriam, 1998), help to focus attention and consider rival explanations (Yin, 2003), and provide integrated interpretations of situations and contexts (Stake, 1995). Both positive and negative case studies were chosen and analyzed in this research in order to give some important pointers about what to do and what not to do in terms of sustainable tourism development and management. Some of the notable positive outcomes from the case study review included the implementation of a diving fee, training the locals for specific tourism jobs, focus on outreach, and improving the awareness about the natural environment. Some of the notable negative outcomes which should try to be avoided were the leakage of profits and jobs to outside parties and a lack of inclusion of the local community in the decision making process as this will lead to less support.

An important set of results that was collected from the community stakeholders was their thoughts about the MPA. The large majority of them supported it and had a lot

of positive things to say about the effects that it has had on the community, the environment and the economy. There were in fact only positive comments about the environmental effects, meaning that the MPA is accomplishing the goals that it was intended to accomplish. From an economic standpoint, one of the main points was about the funding that they receive from Carib-Save and their appreciation for this support. From a social standpoint, the community is very supportive of the MPA and with regard to the thoughts of the community stakeholders on sustainable tourism, most of them were very interested and put forward some ideas about what they think might work. These included the types of people that perhaps should be targeted, as well as some suggestions about infrastructural things which will need to be improved upon, such as improvements in the accommodation options. All of the results which were gathered from the community showed that a lot of care and attention is paid to the MPA and they are keen to find ways to help both themselves and the environment that they live in. The support and involvement of the members of the local community in Bluefields Bay fits with one of the principles of sustainable tourism, that of socio-ecological civility and democratic governance (Gibson *et al.*, 2005).

By studying the importance of sustainable tourism and marine protected areas, the local information about Bluefields Bay, and then evaluating alternatives for sustainable planning, some good results were achieved. The three phase recommendations were a summary of the results and discussion about the possibilities for Bluefields Bay. It is clear that there is a lot of potential for some progression towards this if the correct planning is done. Modifications and improvements to the current infrastructure and strategic planning will put Bluefields Bay in a better position both now and for future

generations with the MPA being considered a main component of the sustainable tourism initiatives in this area.

The list below shows the key findings from each of the four objectives that were stated at the beginning of the thesis. These key points show that a sustainable tourism assessment has been done for a marine protected area in Jamaica, and the path for meshing fishery conservation goals and tourism goals has been made clearer. These findings show that Bluefields Bay has the opportunity to control its own destiny in community planning and development, if the appropriate strategies are used.

1. *Identify tourism attractions and facilities already in place to evaluate the gaps in the tourism business.*
 - a. Natural attractions are in place: the MPA, beaches, vegetation and topography, all of which are tourist attractions;
 - b. Some facilities are in place such as accommodation options, the BBFFS, the commercial strip and the road network; and
 - c. There is a lack in the standard and management of the facilities.
2. *Compare Bluefields Bay's MPA tourism situation with other sustainable marine tourism areas to develop a "toolbox" or list of alternatives for new opportunities and practices.*
 - a. Positive case studies show that MPAs can bring about successful sustainable tourism industries, if structured plans which include financial goals, community integration and environmental conservation are followed; and
 - b. Negative case studies were mostly a result of conflict between different groups in the community; this emphasizes the need for community involvement not just in the planning phase of sustainable tourism development, but in the continued development in the future.
3. *Assess the attitudes and perceptions of local community stakeholders on the role of the Bluefields Bay MPA as a benefit to the community and as a potential driver for the Bluefields Bay area.*

- a. There was a high level of support for the MPA – this was emphasized by the efforts made by the community members to get the MPA enforced in 2009;
 - b. They are aware of the importance that the MPA can bring to them in terms of economic, social and environmental benefits of sustainable tourism;
 - c. Economic and social benefits can be seen in the creation of jobs and the year round business that it provides; and
 - d. Environmental benefits can be seen in the improvement in the marine biodiversity and the knock on effects that this has in terms of the quality and quantity of fish and protection of the coral reefs.
4. *Develop recommendations for sustainable tourism opportunities that benefit both the environment and the community in Bluefields Bay.*
- a. Phase one recommendations include basic changes which will help to make sustainable tourism a reality, with little cost involved. These include cosmetic improvements to guest houses, basic marketing, training for the locals and a focus on developing new tourism activities in the MPA;
 - b. Phase two recommendations are a little more structured, as shown by the main point which is the creation of a tourism plan which includes how financial goals will be achieved. Other suggestions like the addition of more restaurants and a visitor center will help to give Bluefields Bay more of an identity and help to bridge the gap in the quantity and standard of infrastructure which is currently in place; and
 - c. Phase three recommendations are long-term plans and ultimately rest on the success of the sustainable tourism industry after the recommendation in phases one and two have been implemented. These recommendations include expanding the area of the MPA and the number of accommodation options to include a greater investment such as eco-lodges.

CHAPTER 8: REFERENCES CITED

- Ahmad, R., Scatena, F.N. and Gupta, A., 1993. Morphology and sedimentation in Caribbean montane streams: examples from Jamaica and Puerto Rico. *Sedimentary Geology*, 85, 157-169.
- Ashley, C., 2000. The impacts of tourism on rural livelihoods: Namibia's Experience. Working Paper 128, Overseas Development Institute, London.
- Baum, T. and Conlin, M., 1995. Island tourism: an introduction. *Island tourism: management principles and practices*, 1, 1, 3-15.
- Bluefields Bay Fishermen's Friendly Society, 2012. URL: <http://bluefieldsbayfishers.wordpress.com>. Accessed June 2014.
- Bonaire National Parks Foundation, 2008. Bonaire National Marine Park – Recognitions. URL: <http://www.bmp.org/recognitions.html> Accessed July 2014.
- Borrini-Feyerabend, G., 1996. Collaborative management of protected areas: taking the approach to the context in issues in social policy. IUCN, Gland, Switzerland.
- Bramwell, B., 2004. Coastal mass tourism: diversification and sustainable development in southern Europe. *Aspects of tourism*. 1, 1-32.
- Brown, P.A., 2008. A review of the literature on case study research. *Canadian Journal for New Scholars in Education*, 1, 1.
- Buchan, K., Frankhein, R. and Fernandes, L., 1995. An economic and social study of the Saba Marine Park, Saba, Netherland Antilles, 1, 4-34.
- Bureau of Fisheries and Aquatic Resources, 2004. Philippine Fisheries Profile, 2004. Republic of the Philippines, Department of Agriculture.
- Burke, L. and Maidens, J., 2004. Reefs at Risk in the Caribbean. Washington, DC: World Resources Institute, 81p.
- Butler, R.W., 1980. The concept of the tourist area life-cycle of evolution: implications for management of resources. *Canadian Geographer*, 24, 1, 5-12.
- Butler, R.W., 1993. Tourism development in small islands. *The development process in small island states*. Routledge, London.
- Butler, R.W., 1997. Modelling Tourism Development: Evolution, Growth and Decline in S.Wahab and J. Pigram (eds) *Tourism Development and Growth*, 109-128

- Butler, R.W., 2004. The tourism area life cycle in the twenty-first century. *A companion to tourism*, 13, 159-171.
- Caribbean Marine Protected Area Management (CaMPAM), 2010. CaMPAM Network and Forum. *The Gulf and Caribbean Fisheries Institute*. URL: <http://campam.gcfi.org/campam.php> Accessed August 2014.
- Caribbean Tourism Organization, 2014. Latest tourism statistics tables. URL: <http://www.onecaribbean.org/statistics/latest-tourism-statistics-tables/> Accessed June 2014
- Carr, L.M. and Heyman, W.D., 2009. Jamaica bound? Marine resources and management at a crossroads in Antigua and Barbuda. *The Geographical Journal*, 175, 1, 17-38.
- Carroll, J., 2013. Physical habitat mapping and assessment in Bluefields Bay fish sanctuary. Springfield, MO: Missouri State University, Master's thesis, 121p.
- Cartwright, R. and Baird, C., 1999. The development and growth of the cruise industry. Butterworth and Heinemann: Oxford.
- Cater, C. and Cater, E., 2007. Delimiting marine ecotourism. *Marine ecotourism: between the devil and the deep blue sea*, 6, 1, 7-9.
- Cater, E. and Goodall, B., 1992. Must tourism destroy its resource base? In: *Environmental issues in the 1990s*, A. M. Mannion and S. R. Bowlby (eds). 1, 3.
- Catry, B. and Chevalier, M., 1974. Market Share Strategy and the Product Life Cycle *Journal of Marketing*, 38, 29-34.
- C-Fish, 2014. Fish Sanctuaries For Sustainable Communities – Bluefields Bay, Jamaica. URL: <http://c-fish.org/where-we-work/bluefields-bay/> Accessed July 2014.
- Christie, P., 2004. Marine Protected Areas as Biological Successes and Social Failures in Southeast Asia. *American Fisheries Society Symposium*, 42, 155-164.
- Coccosis, H. and Parpairis, A., 1992. Tourism carrying capacity assessment in islands. *The challenge of tourism carrying capacity assessment: theory and practice*, 1, 11, 212-216.
- Cooper, C., 2011. Tourism Area Life Cycle. *Contemporary Tourism Reviews*. Goodfellows Publishers Limited, Oxford.
- CORALINA. 2000. Caribbean archipelago biosphere reserve: regional marine protected area system. Global Environment Facility Project Document. World Bank, Washington, DC, USA, 78p.

- Cruise Lines International Association, 2002. Cruise industry rebounding at record pace in 2002. Press release, 10 September, <http://www.cruising.org/CruiseNews/news>. Accessed April 2014.
- Crang, M., Pons, P.O. and Travlou, P., 2009. Taking Mediterranean tourists seriously. *Cultures of mass tourism: Doing the Mediterranean in the age of banal mobilities*, 1, 1, 2-8.
- Dasgupta, S., Laplante, B., Meisner, C., Wheeler, D. and Yan, J., 2007. The impact of sea level rise on developing countries: a comparative analysis. *World Bank Policy Research Working Paper 4136*, 12p.
- Davenport, J. and Davenport, J.L., 2006. The impact of tourism and personal leisure transport on coastal environments: A review. *Estuarine, coastal and shelf sciences*, 67, 280-292.
- Day, M.J., 2007. Natural and anthropogenic hazards in the karst of Jamaica: Geological Society, London, Special Publications, 279, 173-184.
- Dixon, J., Hamilton, K., Pagiola, S. and Segnestam, L., 2001. Tourism and the environment in the Caribbean: an economic framework. *Environmental economic series*, 1-46.
- Ebert, J.E., 2010. Integrated Watershed Management in Bluefields Bay, Jamaica. Springfield, MO: Missouri State University, Master's thesis, 185p.
- Fabinyi, M., 2008. Dive tourism, fishing and marine protected areas in the Calamianes Islands, Philippines. *Marine Policy*. 32, 6, 898-904.
- Food and Agriculture Organization of the United Nations (FAO), 2009. The state of the world fisheries and aquaculture 2008. Rome, Italy: Food and Agriculture Organization of the United Nations, 178p.
- Food and Agriculture Organization of the United Nations (FAO), 2011. Review of the state of the world marine fishery resources. Rome, Italy: Food and Agriculture Organization of the United Nations, Fisheries and Aquaculture Technical Paper, 569, 334p.
- Framhein, R., 1995. The value of nature protection, Economic Analysis of the Saba Marine Park. Summary for the Government of Saba, September 1995. Saba Conservation Foundation, The Bottom, Saba, Netherlands Antilles.
- Glavovic, B., Scheyvens, R. and Overton, J., 2002. Waves of adversity, layers of resilience: exploring the sustainable livelihoods approach. Paper given at the Development Studies of New Zealand Conference, 2002.
- Gibson, R.B. Hassan, S., Holtz, S., Tansey, J. and Whitelaw, G., 2005. Sustainability Assessment: Criteria and Processes. London: Earthscan.

- Gouletquer, P., Gros, P., Boeuf, G. and Weber, J., 2014. The importance of marine biodiversity. *Biodiversity in the marine environment*, 1-13.
- Goreau, T.J. and Goreau, M., 1997. Water Quality in the Negril Area Watershed, Jamaica: Environmental Management Implications. Cambridge, MA: Global Coral Reef Alliance. URL: http://www.globalcoral.org/water_quality_in_the_negril_area.htm. Accessed November 20, 2014
- Government of Jamaica (GoJ), 2011. The Second National Communication of Jamaica to the United Nations Framework Convention on Climate Change. Kingston, Jamaica: Government of Jamaica, United Nations Development Programme, United Nations Framework Convention on Climate Change, Global Environmental Fund, 409p.
- Gray, J., 1998. Sea Canoe Thailand – lessons and observations. *Proceedings of the 1996 World Congress on coastal and marine tourism*, 139-144.
- Gulf and Caribbean Fisheries Institute, 2010. A database of the Wider Caribbean's Marine Protected Areas. URL: <http://campam.gcfi.org/CaribbeanMPA/CaribbeanMPA.php> Accessed July 2014.
- Hall, C.M. and Page, S., 2002. The geography of tourism and recreation: environment, place and space. Psychology Press, 1p.
- Henry, B., 1998. The environmental impact of tourism in Jamaica. *World leisure and recreation*, 29, 1, 19-21.
- Higman, B.W., 2001. Jamaica Surveyed: Kingston. Mona, Kingston: University of West Indies Press, 15-21.
- Howard, M., Connolly, E., Taylor, E. and Mow, J.M., 2002. Community based development of multiple use marine protected areas: promoting stewardship and sharing responsibility for conservation in the San Andres Archipelago, Colombia. *Gulf and Caribbean Research*, 14(2), 155-162.
- Intergovernmental Panel on Climate Change, 2007. Climate Change 2007: Synthesis Report. In: Core Writing Team, Pachauri, R.K., and Reisinger, A., (eds) Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: Intergovernmental Panel on Climate Change, 104p.
- International Union for Conservation of Nature and Natural Resources and World Commission on Protected Areas (IUCN and WCPA), 2008. Guidelines for applying protected area management categories.

- Jayawardena, C., 2002. Future challenges for tourism in the Caribbean. *Social and economic studies*, 51, 1, 4.
- Jayawardena, C., 2002. Mastering Caribbean tourism. *International journal of contemporary hospitality management*. 14 (2), 88-93.
- Johnston, M.E. and Twynam, G.D., 2008. Development and evaluation of sustainable tourism principles: the WWF Arctic tourism guidelines initiative. *Tourism, Recreation and Sustainability*, 1, 6, 103-119.
- Kloiber, U., 2013. Chumbe Island Coral Park - Conservation and Education, Status report 2013. Zanzibar, Tanzania.
- Koss, R., 2008. Jamaica. *Lonely Planet Country Guides*, 249p.
- Lester, J. and Weeden, C., 2004. Stakeholders, the natural environment and the future of Caribbean cruise tourism. *International journal of tourism research*. 6, 39-50.
- Lowe, C., 2003. Sustainability and the question of “enforcement” in integrated coastal management: the case of Nain Island, Bunaken National Park. *Indonesian Journal of Coastal and Marine Resources Special Edition*, 1, 49–63.
- McCool, F.S. and Moisey, R. N., 2008. Pathways for pitfalls in the search for sustainable tourism. *Tourism, Recreation and Sustainability: Linking culture and the environment*, 2, 1, 1-13.
- Merriam, S. B., 1998. Qualitative research and case study applications in education. San Francisco: Jossey-Bass.
- Merrill, R., 1998. The NRMP experience in Bunaken and Bukit-Bukit Raya National Parks: lessons learned from PAM in Indonesia. Natural Resources Management Program. URL: www.nrm.or.id/Content/Resources/Bibliography.asp Accessed July 2014.
- Meteorological Services of Jamaica, 2002. Climate. Kingston, Jamaica. URL: <http://www.metservice.gov.jm/climate.asp?id=3> Accessed July 2014.
- Middleton, V.T., 1988. Marketing in travel and tourism. *Sustainable tourism: a marketing perspective*, 1, 6, 64-78.
- Miller, M.L. and Auyong, J., 1991. Coastal zone tourism: a potent force affecting environment and society. *Marine Policy*, 15 (1), 75-99.
- Mines and Geology Division of Jamaica, 2014. Geology of Jamaica. *Ministry of Science, Technology Energy and Mining*. Hope Gardens, Kingston, Jamaica.

- Ministry of Agriculture and Lands Fisheries Division, 2008. Draft Fisheries Policy. Kingston, Jamaica: Ministry of Agriculture and Lands Fisheries Division, 38p.
- Ministry of Agriculture and Fisheries, 2014. Special Fishery Conservation Areas. URL: http://www.moa.gov.jm/Fisheries/fish_sanctuary.php Accessed May 2014.
- Ministry of Agriculture and Fisheries, 2014. Soil Type, Parishes Found, Suitable Crop, Natural Fertility, Soil Reaction. URL: <http://www.rppdjm.com/Major%20Soils.pdf> Accessed August 2014.
- Mona Geoinformatics Institute (MGI), 2010. GIS Database: Westmoreland. Kingston, Jamaica: University of the West Indies, Mona Geoinformatics Institute. URL: <http://www2.monagis.com/>. Accessed January 1, 2010.
- Mow, J.M., 2006. The native islanders of San Andres, Old Providence and Santa Catalina: Dreaming between two worlds, 11p.
- Munro, J.L., 1983. Caribbean Coral Reef Fishery Resources. Manila, Philippines: International Center for Living Aquatic Resources Management, ICLARM Studies and Reviews 7, 276p.
- National Resources Conservation Authority's Watershed Protection Branch (NRCA-WPB), 1997. Watershed Conditions. In: Ebert, J., *Intergrated Watershed Management in Bluefields Bay, Jamaica*. Springfield, MO: Missouri State University, National Resources Conservation Authority, Watershed Protection Branch, 64-65.
- Natural Resources Conservation Division (NRCD) and Field, R.M. Associates Inc., 1987. Jamaica, country environmental profile. Kingston, Jamaica: Natural Resources Conservation Division, International Institute for Environmental and Development, Ralph M. Field Associates Inc, 362p.
- National Oceanic and Atmospheric Administration (NOAA), 2004. Hurricane Ivan – September 2-26 2004. *Hurricane Ivan*. URL: <http://www.hpc.ncep.noaa.gov/tropical/rain/ivan2004.html> Accessed July 2014.
- Oracion, E., 2003. The dynamics of stakeholder participation in marine protected area development: a case study in Batangas, Philippines. *Silliman Journal*, 44(1), 95–137.
- Orams, M., 1999. *Marine tourism: development, impacts and management*. Routledge: London.
- Pattullo, P., 1996. *Last resorts: the cost of tourism in the Caribbean*. Ian Randle Publishers, 1, 142-146.

- Payne, R.J., Twynam, G.D. and Johnston, M., 1999. Tourism and sustainability in northern Ontario. *Tourism and sustainable development: monitoring, planning, managing, decision making: a civic approach*. University of Waterloo, Ontario, Canada, 237-266.
- Payne, A. and Sutton P., 2001. *Chartering Caribbean development*. London: Macmillan.
- Penobscto Corporation, 2012. *Satellite Imagery Database: GeoEye*. Manassas, VA: Penobscot Corporation, GeoEye.
- Pieters, R. and Gevers, D., 1995. A framework for tourism development on fragile island destinations: the case of Bonaire. *Island tourism: management principles and practices*, 1, 11, 123-132.
- Pomeroy, R., E. Oracion, Caballes, D.A. and Pollnac, R.B., 2003. Economic benefits and integrated coastal management sustainability. *Silliman Journal*, 44, 1, 75–94.
- Protect Planet Ocean, 2010. What are marine protected areas (MPAs)? URL: <http://www.protectplanetocean.org/introduction> Accessed June 2014.
- Rainforest Alliance, 2014. Guide to good practices for sustainable tourism in marine-coastal ecosystems. 13-15.
- Reidmiller, S., 1999. The Chumbe Island coral park project. *Marine ecotourism; between the devil and the deep blue sea*. 6, 10, 228-232.
- Roberts, C. M., Halpern, B., Palumbi, S.R., and Warner, R.R., 2001. Designing marine reserve networks: why small, isolated protected areas are not enough, 2, 3p.
- Roberts, C.M., McClean, C.J., Veron, J.E.N., Hawkins, J.P., Allen, G.R., McAllister, D.E., Mittermeier, C.G., Schueler, F.W., Spalding, M., Wells, F., Vynne, C. and Werner, T.B., 2002. Marine biodiversity hotspots and conservation priorities for tropical reefs. *Science*, 295, 1280-1284.
- Rudolph, J., 2013. Effects of Artificial Reef Implementation on Fish Populations in a Marine Protected Area: Bluefields Bay, Jamaica. Springfield, MO: Missouri State University, Master's thesis.
- Salm, R. V., and Clark, J.R., 2000. Marine and Coastal Protected Areas. *A guide for planners and managers*, 3, 1, 13-34.
- Sea Turtle Conservancy, 2014. STC Programs: Research: Tortuguero program is a conservation success. URL: <http://www.conserveturtles.org/costarica.php?page=ccc-success-story> Accessed July 2014.

- Seales, L. and Stein, T., 2012. Linking Commercial Success of Tour Operators and Agencies to Conservation and Community Benefits in Costa Rica. *Environmental Conservation*. 39, 1, 20-29.
- Spence, B., Katada, T. and Clerveaux, V., 2005. Experiences and Behavior of Jamaican Residents in Relation to Hurricane Ivan. Tokyo, Japan: Japan International Cooperation Agency.
- Stake, R. E., 1995. The art of case study research. Thousand Oaks, CA: Sage.
- Statistical Institute of Jamaica, 2008. Population Census 2001. Kingston, Jamaica: Government of Jamaica, Statistical Institute of Jamaica. URL: <http://statinja.gov.jm/Popcensus.aspx>. Accessed January 2015
- Sullivan, K.M., Chaippone, M., Littau, J., Miller, M., Rath, T., Soto, M., Reed, M., Walling, L., and Willson-Kelly, P., 1999. Rapid Ecological Assessment of the Montego Bay Marine Park, Jamaica: Evaluation of Parks as Marine Fisheries Reserves. Proceedings of the 45th Annual Golf and Caribbean Fisheries Institute (Charleston, SC, USA), 709-728.
- Sweeting, M.M., 1985. The karstlands of Jamaica. *The Geographical Journal*, 124(2), 184-199.
- United Nations, 2012. Protection of coral reefs for sustainable livelihoods and developments. *United Nations General Assembly Report*, 6, 21-22.
- United Nations World Tourism Organization, 2014. Tourism development master plans and strategic development plans. *Policy planning and economic development*. URL: <http://cooperation.unwto.org/technical-product/tourism-development-master-plans-and-strategic-development-plans> Accessed November 2014.
- Van't Hof, T. and Buchan, K.C., 1995. A self-financed marine park: The Saba Case. Case study prepared for the CANARI workshop on Revenue Generation for Protected Areas, Saba, Netherlands Antilles, June 1995, 5p.
- Vieria, A., Black, K.L., Woodley, J.D. and Sary, Z., 1995. The Discovery Bay Fishery Reserve: Its Development, Management, Monitoring Plans, and Current Status. Proceedings of the 48th Gulf and Caribbean Fisheries Institute (Santo Domingo, Dominican Republic), 241-255.
- Villasol, A. and Beltran, J., 2004. Caribbean islands, GIWA Regional Assessment 4. In: Fortnam, M. and Blime, P. (eds), *Global International Waters Assessment*. Kalmar, Sweden: United Nations Educational, Scientific, and Cultural Organization, United Nation Environmental Programme (UNEP), University of Kalmar, 132p.

- Water Resources Authority, 1980. Hydrology of Jamaica – Climate and Precipitation. URL:
<http://www.wra.gov.jm/dynaweb.dti?dynasection=general&dynapage=hydrology>. Accessed July 2014.
- Whitbeck, R.H., 1932, The agricultural geography of Jamaica. *Annals of the Association of American Geographers*, 22, 1, 13-27.
- White, A. T., L. Z., Hale, Y., Renard, and L. Cortesi, editors., 1994. Collaborative and community-based management of coral reefs: lessons from experience. Kumarian Press, West Hartford, Connecticut.
- World Commission on Protected Areas (WCPA), 2002. Guidelines for planning and management. *Sustainable tourism in protected areas*, 8, 4, 47-56.
- World Tourism Organization, 2001. Rising popularity of cruising. News bulletin, <http://www.world-tourism.org/newsroom/Bulletin/archives> Accessed April 2014.
- World Resources Institute, 2011. Reefs at risk in the Atlantic/Caribbean. URL:
<http://www.wri.org/resources/maps/reefs-risk-atlanticcaribbean> Accessed September 2014.
- World Travel and Tourism Council, 2014. Travel and tourism total contribution to GDP, Travel and tourism contribution to employment. URL:
<http://www.wttc.org/focus/research-for-action/economic-data-search-tool/> Accessed 2014
- Yin, R. K., 2003. Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage.