CULTURAL SURVIVAL AND RESOURCE USE AT THE MARGIN:

CULTURAL ECOLOGY OF PUNTA GORDA

by

ROBERT DAVID GREENAWALT

(Under the Direction of Robert Rhoades)

ABSTRACT

This dissertation focuses on the Garifuna people living in the community of Punta Gorda in the Bay Islands of Honduras and the relationship between their marginal social, economic, and political status and their maritime resource use practices. Its theoretical approach is strongly grounded in cultural ecology and draws inspiration from recent developments in maritime anthropology and political ecology. Conclusions based on field research in Punta Gorda demonstrate that socioeconomic marginality is one of the primary factors that led to the unsustainable use of their local maritime resources. Contemporary resource use strategies in Punta Gorda focusing on fishing for profit, rather than fishing for subsistence, have drawn its inhabitants into an economy upon which they are now dependent. Driven by poverty and out of necessity, they have continued to exploit their maritime resources to the point of ecological collapse.

INDEX WORDS: Ecological Anthropology, Cultural Ecology, Maritime Anthropology, Political Ecology, Caribbean, Central America, Honduras, Garifuna, Black Carib, Bay Islands, Fishing, Environmental Degradation

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To my parents, Shanna Michelle, and William

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TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER ONE

INTRODUCTION

The Research Problem

This dissertation is about the cultural ecology of a fishing community in the Bay Islands, Honduras. It assesses the relationship between one culture's marginal status, the Garifuna of Punta Gorda, and their maritime resource use practices. Marginality of the Garifuna is addressed by examining how they were marginalized in the past and how they have been confined to the margin in present times through socioeconomic, political, and ecological phenomena. Maritime resource use practices are examined to gauge the ecological ramifications of Garifuna fishing strategies. Socioeconomic and political linkages between the local community and regional systems are examined to contextualize Punta Gorda's cultural ecology in the larger picture.

In the Bay Islands, Honduras, population growth, increasing consumption of natural resources, and development pressure have influenced the local government to reassess their maritime resource use strategies and practices. Human-environment relationships in the Bay Islands are at a critical juncture as the local economy is transformed from a basis of extractive resource use, such as fishing, to tourism which is, at least hypothetically, more sustainable. Paralleling trends in global fisheries that are often reported to be in a state of crisis (McGoodwin 1991, Kurlansky 1997), Bay Islands'

fisheries have declining yields and may be in danger of collapse. Susan Stonich (1995: 70) states that:

> Conserving Honduras' natural resource base is crucial because the country remains exceedingly dependent upon renewable resources to generate income in the predominant economic sector – agriculture, forestry, and fisheries.

Given this background, it is no surprise that the economy of the Bay Islands is shifting away from fisheries where future prospects are dim. The Bay Islands provide ideal circumstances for a scaled-down study of global problems because it is a microcosm of the world as a whole (Evans, personal communication). The islands face many of the same problems that the world does (ecological degradation, population growth, limited energy supplies, and scarcity of water) on a smaller and more manageable scale that facilitates academic inquiry.

The causes of decline in global fish populations are debated by marine biologists, anthropologists, environmentalists, and fishers; some claiming that degradation in coastal ecological integrity led to decline, while others claim that overfishing caused the pool of maritime resources to shrink. Impacts on coastal ecological integrity include pollution on land and upstream ecosystems (Letson et al. 1998). It is also important to consider the role of essential fish habitat (Morris 1992) – ecological zones that fish need for important elements of their life cycle (such as spawning, growth and development). As coastal development pollutes and reduces available fish habitat, there is a high likelihood of disturbance to associated ecological zones, such as coral reefs, through processes of eutrophication, increased siltation, and reduced amounts dissolved oxygen in the water (Schmitt 1996). Overfishing can result from too many people fishing (Cordell 1989,

Pauly 1997) or from using extremely efficient resource extraction technologies (Kurien and Achari 1998).

The ecology of Roatan in the Bay Islands of Honduras is at the threshold of significant transformation. Factors that currently threaten the environment of the island include increased water usage, overfishing, and habitat destruction (both maritime and inland). These factors are indicators of larger problems such as population growth and increased development pressure on Roatan's carrying capacity. Population on the island has grown significantly due to domestic increase and immigration. Adoption of more destructive resource extraction technologies and the growth of tourist infrastructure (Stonich 1998) have exacerbated the effects of population growth on the environment. The combined effects of non-sustainable fishing practices and destruction of essential fish habitat to make room for tourist facilities could lead to a collapse of the island's traditional fisheries and have serious social and economic consequences for island communities which depend upon those resources.

Such a scenario is potentially disastrous for communities in the Bay Islands that rely upon fishing for subsistence and income. In the Garifuna town of Punta Gorda, where current fishing practices are not sustainable, the potentially negative consequences of fishery collapse remain an important issue to be addressed. Given the traditional relationship that Garifuna have with maritime resources, it is understandable that decline in those resources represents a serious threat to the viability of their culture, community, and economy. Creation of a comprehensive environmental management program, which includes regulation of fisheries, is one of the best options to prevent a tragic collapse of local ecological resources. Governmental officials, working through *Proyecto Manejo*

Ambiental de las Islas de la Bahia (abbreviated PMAIB and translated as Project for the Management of the Bay Islands' Environment) have begun to work toward the goal of comprehensive environmental management, but they have not discussed how to implement plans or considered the socioeconomic ramifications any plans might have. Before significant changes are made in Bay Islands' environmental management, it is necessary to assess the cultural ecology of fishing communities, such as Punta Gorda, in greater detail.

In the Bay Islands, degradation in coastal ecological systems (due to natural and human causes) and overfishing are to blame for decline in local fisheries. Both of these issues are symptomatic of deeper sociocultural problems underlying regional resource use practices. The socioeconomically and politically marginal status of local artisanal fishers is one of the primary causes of ecological degradation in Bay Islands fisheries. The marginal status of artisanal fishers is linked to poverty, which can motivate fishers to increase their exploitation of local resources in an unsustainable manner (Pauly 1997). Based on this problem, several questions arise: What effect do local fishing practices have on Bay Islands' ecosystems? How does marginal status influence resource use practices? How do traditional fishing cultures (where fishing is of great historical and contemporary importance) respond to dynamic cultural and ecological situations, including changing demands on their time, new opportunities, and trends in the marketplace?

Of the cultural and ethnic groups currently living in the Bay Islands, the Garifuna of Punta Gorda provide researchers with an excellent window through which to view how marginal status affects local culture and the way they interact with ecosystems. By

assessing the relationship between marginality and the ecological effects of fishers in small-scale systems, scientists potentially gain insight into the role of these processes in global systems. To get at the core of resource use problems and eventually develop sustainable solutions, scientists must first look at culture to understand how historical, political, economic, and social patterns influence decision-making processes concerning resource use practices.

This dissertation will demonstrate that the marginal status of Garifuna living in Punta Gorda leads them to employ diversified subsistence strategies, in which fishing is a central component, that emphasize their independence and resiliency as a culture, yet create a situation where their resource use practices are not sustainable in the context of changing demographics, economic motivations, and ecological opportunities. Additionally, a legacy of historical patterns which led to socioeconomic and political marginalization of the Garifuna people continue to have a profound effect in the present-day, and consequentially influence the community in a variety of different ways including how they use their local resources. Because of their marginal position in social and economic spheres of interaction, Garifuna fishers engage in non-sustainable resource use practices which threaten local ecosystem integrity and ultimately the economic future of the community. Because of their marginal political position, Garifuna have little ability to control or influence fisheries management processes which have significant potential to affect their livelihood.

To gauge how the marginal status of Garifuna fishers influences their resource use practices, I developed three different research objectives. First, it was important to establish the socioeconomically and politically marginal nature of the Garifuna

community. This objective focused on how poverty and lack of political clout influence Punta Gorda residents when they make economic decisions. Second, it was necessary to measure how Garifuna fishers affect local ecosystems by their maritime resource use practices. The purpose of this objective was to gauge the ecological impact of fishers on their surrounding environment. Finally, it was essential to contextualize the place and role of Punta Gorda's Garifuna fishers in regional and international systems of social, economic, political, and ecological interaction. The intent of this objective was illustrate how Garifuna fishers are affected by extra-local phenomena which are not always directly observable based on study of the community alone.

Theoretical Background

Because ecological anthropology has accumulated a significant body of literature addressing the human-environment interface from a variety of perspectives and academic specializations it provides the theoretical and methodological tools to assess issues underlying the relationship of socioeconomic marginality of Garifuna fishers and their maritime resource use practices. By viewing humans as actors in their ecosystem, ecological anthropologists are able to understand how humans adapt to their environment through culture. At the theoretical core of ecological anthropology is cultural ecology. Ecological anthropology encompasses other subfields such as political ecology and maritime anthropology, which can trace their theoretical origins to cultural ecology.

In this dissertation, I use a cultural ecology approach to address my research questions and objectives. Cultural ecology, which I use interchangeably with the term

human ecology, "links the subject matter of anthropology, biology, geography, demography, economics, and other disciplines in an attempt to understand relationships between people and their environments…" (Bates and Lees 1996: 1). To supplement my use of cultural ecology, I drew inspiration from recent developments in political ecology and maritime anthropology. Although both of those fields originated, in part, in the cultural ecology approach and remain closely linked in terms of theory and methodology, they have since grown into subfields in their own right that provide unique insights into human-environment relationships.

The cultural ecology approach was developed by Julian Steward (1976) and Leslie White (1959). Hatch defines cultural ecology as "the study of the adjustment or relationship of culture to the natural environment" (1973: 114). Robert Netting (1986) clarifies this definition; stating that cultural ecology focuses on the interaction of humans within their environment. Cultural ecologists emphasized cultural adaptation to environmental challenges using technology or social organization and borrowed ideas from ecology, such as the niche concept (Barth 1956) and ecosystems (Frake 1962), to help understand interaction between cultural systems and their environment.

In its early theoretical development, cultural ecology emphasized artificially bounded local ecosystems, homeostasis or feedback mechanisms, carrying capacity, and the reduction of human culture energy units (Blount 1999). Scholars criticized these research foci for their static, non-historical view of ecology, lack of focus on individual actors, and over-emphasis on feedback systems (Hardesty 1977, Ortner 1984, Biersack 1999, Kottak 1999). Nonetheless, cultural ecology provided a solid foundation for a more thorough analysis of the ways in which humans are related to their environment.

Outside of ecological anthropology, scholars questioned the ability of anthropologists to maintain distinctions between subjectivity and objectivity (Headland 1997) and who had the authority to represent others. Foucault's (1973) post-structuralist theory highlighted problems associated with representation and introduced concepts such as situated truth (where reality is dependent upon context and perspective) and hegemony or the privileging of position.

Recent developments in cultural ecology transcend these criticisms to engender a "New Ecological Anthropology" (Kottak 1999) that allows anthropologists to view human ecosystems as multi-leveled spheres of interaction where dynamic processes of events influence the lives of individuals and social groups. Contemporary scholars in ecological anthropology incorporate analysis of human agency within cultures to see how actors influence events in local, regional, and global systems (Biersack 1999) and they increasingly use participatory research approaches to achieve more accurate views of local ecosystems (Little 1994). The reemergence of ecological anthropology influenced the development of other related, albeit more specialized, theoretical foci such as political ecology (Bryant 1992, Bryant and Bailey 1997, Greenberg and Park 1994) and maritime anthropology (McCay and Jentoft 1996, McCay and Acheson 1987).

It is appropriate to frame discussion of Garifuna fishers' resource use in the theoretical context of cultural ecology because it allows researchers to analyze the human-environment relationship in a holistic manner by studying people's behavior in the past and present. "The examination of the interaction between human behavior and environment permits assessment of the impacts of people on environment and vice verse. The value of human ecology as an instrument of environmental management comes from

the fact that its ideas arise from the observation of people within their political, economic, social, historical, and physical context" (Moran 1993: 144). Because it starts at a local level and builds outward from there, including in its analysis relevant information from fields that are traditionally the specialty of other social and physical scientists, cultural ecology provides an excellent way to address factors that shape humanity's culture.

Since Garifuna fishers in Punta Gorda are located at the margin of society, it becomes important to start studying, from a point within their community, how various influences (historical, economic, etc.) condition their daily lives and resource use decisions. The cultural ecology approach provides the key; it allows researchers to start from the all-important local setting, while steadily adding different study components in order to construct a holistic analysis of a community's place in their environment. For this reason, I felt that cultural ecology was the most appropriate theoretical forum for discussion of Punta Gorda and the factors that shape Garifuna fishing practices.

In this dissertation I draw on aspects of contemporary cultural ecology that are particularly relevant to the study of Punta Gorda's fishers. The ecosystem concept is useful because it provides a fitting frame of reference for fishers' domain of influence on the island of Roatan. Although the ecosystem concept is controversial because it is difficult to define boundaries, it is very pertinent to studies of islands because they are naturally "bounded". It is true that islands are not completely separate from other nearby ecosystems; interactions take place with other ecosystems by migratory species and islands can be part of a larger eco-region. For example, Roatan is part of the Bay Islands archipelago, which is part of the Mesoamerican reef system that runs from the Yucatan peninsula south to the Rio Dulce of Guatemala. Thus, the ecosystem of Roatan is linked

to those found in nearby islands and to those in coastal areas of mainland Central America. Despite potential linkages with other ecosystems, an island nonetheless provides a convenient unit of ecological analysis because it is as close as researchers can get to an independent and isolated ecosystem without creating artificial boundaries. For purposes of theoretical discussion of human impacts on ecosystems, islands are natural laboratories that provide a unique opportunity to study "bounded ecosystems" without encountering many of the difficulties associated with inter-ecosystem relationships. Using an island ecosystem as a unit of analysis also enables cultural ecologists to incorporate the concept of carrying capacity because local resources on an island are, by nature, limited and the people living on islands must either depend on what they have or import the things they need.

Although cultural ecology provides an excellent theoretical perspective for analysis of the human-environment interface it is somewhat limited in its ability to understand how changing dynamics of power, wealth, and prestige and the unequal distribution thereof – the basic elements of politics – influence the ways in which people use their resources. To more effectively evaluate how political interactions affect Punta Gorda's fishing practices; I turned to political ecology for inspiration. Political ecology is better positioned than cultural ecology to address issues such as marginality, marginalization, and the process of political wrangling for control of resources, thus it has direct relevance to this dissertation.

Political ecology emerged as an interdisciplinary field that combines political economy with ecological studies (Blaikie 1985). It has since been embraced by ecological anthropologists as a way to inform our perspective on the political nature of

resource use. Political ecology is not without controversy – there are contentions within the ranks of anthropology about how ecological political ecology actually is (Vayda and Walters 1999). Depending on a scholar's viewpoint, political ecology could be considered a new and separate subfield of anthropology or it could be viewed as a maturation of cultural ecology to include greater perspective on scale. Supporting the idea that political ecology is simply an extension of cultural ecology is the fact that one of the first usages of the term among anthropologists was by Eric Wolf (1972). He cited the importance of understanding human political relationships in the context of their environmental circumstances. Since then anthropologists have certainly paid more attention to the ecological nature of political relationships and the political nature of ecological relationships between their communities of study (the locus of ethnography) and extra-local entities. However, political ecology has grown beyond the bounds of any single scholarly discipline and serves as a catch-all category for any study that is remotely political or ecological. So Vayda and Walters were correct to question political ecology because it appears that in its relative youth political ecology has strayed from its true focus.

Despite these contentions, political ecology serves as a broad framework to guide our understanding of how social, economic, and political relationships interact across multiple levels of spatial scale with emphasis on how these relationships affect environmental quality and opportunities for local populations (Blaikie 1995, Bryant and Bailey 1997). This includes a focus on how certain groups gain privilege and can marginalize others through the practice of conservation, development, and domination. To paraphrase Greenberg and Park (1994: 8): "there is a developing consensus that it is

not enough to focus on local cultural dynamics or international exchange relations, rather there is a need to address past and present relationships between policy/politics/political economy and the environment". Once again, Vayda and Walters (1999) provide an insightful caveat for scholars who wish to use the political ecology approach: it is well and good to shift focus beyond local culture, but anthropologists must start with the local before trying to understand a community's relationships with the regional and global.

A major theme of political ecology has been conflict over resources, especially in the context of development. In some cases, states marginalized local communities in order to control their resources (Scott 1998, Martinez-Alier 1991). In addition to focusing on conflict over resources, many political ecologists emphasize political and socioeconomic influences on environmental degradation (Painter and Durham 1995). Little and Horowitz (1987) use case studies from various parts of the world to describe how unequal social and economic relationships can present circumstances under which local populations use their ecological resources unsustainably. Local individuals may become locked into a cycle of environmental degradation because the only way they can make a living is to over-exploit their ecosystem (Stonich 1993).

A second major theme in political ecology focuses on discursive explanation of relationships between people at local, regional, and global levels by emphasizing concepts such as hegemony, legibility, and resistance to authority (i.e. Escobar 1996, Scott 1998). Many of these scholars focus their attention on power relationships between people in order to gauge how people negotiate and resist political, economic, and social challenges to use of ecological systems (Peet and Watts 1993). Within this line of

thinking, it becomes important to emphasize the relationship between ecological degradation and impoverishment of people (Martinez-Alier 1991).

There are at least two important critiques to consider. The first is that the political economic approach within political ecology tends to develop essentialized characterizations of political influences on ecological and cultural systems (Escobar 1999). The second is that political ecology often uses a top-down perspective that looks at how global relationships affect local communities (Vayda and Walters 1999). Rather than using a top-down approach, it is more important to begin at the local community and then branch out from there, studying the flows of goods and information into the larger world.

An important concept in political ecology that helps to explain the role of history and socioeconomic issues in resource use is marginalization. As portrayed by Blaikie and Brookfield (1987) in *Land Degradation and Society*, marginalization is both a cause and a consequence of phenomena when people who have limited political, economic, or social capital are left little choice but to unsustainably exploit their available resources. Robbins (2004: 77) cogently explains that marginalization is:

> A process whereby politically and socially marginal (disempowered) people are pushed into ecologically marginal (vulnerable and unstable) spaces and economically marginal (dependent and narrowly adaptable) social positions, resulting in their increasing demands on the marginal (increasingly limited) productivity of ecosystems. As a consequence, those individuals and groups will tend to increase their efforts on the landscape, increasingly pushing the limits of its capacity, and achieving lower and lower yields.

It remains important to distinguish between marginal and marginalized peoples. Marginal peoples are those who are on the periphery of society and have, due to circumstance, less access to resources and less social, economic, and political capital.

Marginalized peoples are those who are unfortunately at the wrong end of a process whereby their access to resources and capital are steadily eroded, expropriated, or extinguished due to the unequal application of political, economic, or social influence. The process of marginalization eventually leads to marginal status, but the reverse is not necessarily true. Societies that are already marginal may never become the focus of further marginalization simply because their peripheral position is not sufficiently attractive to warrant the expenditure of resources for further exploitation. It is critical to understand this difference in regard to discussion of Garifuna fishers. Their position in Punta Gorda is marginal because they are at the social, economic, and political periphery of society in the Bay Islands, Honduras. However, their marginal position is also the result of a process of marginalization that took place during their cultural history. Despite the fact that Garifuna were marginalized in the past, it would be untenable to claim that a process of marginalization is still occurring in Punta Gorda to this day.

In my theoretical perspective, I prefer to view political ecology as the logical outgrowth of cultural ecology. As such it is directly relevant to my study of Punta Gorda fishers and their resource use practices because any type of resource extraction will eventually become a political issue. Included in my study of Garifuna fishing, I discuss the political and economic relationships that they have with other stakeholders on the island and how those can potentially influence the future of their fishery. Although my analysis of Punta Gorda is primarily focused on the local situation and does not delve in depth into regional and global political and economic influences on Garifuna resource use practices, I do provide the groundwork for discussion of those issues and hope to address them in future research activities.

Because this study focuses on Garifuna fishers in Punta Gorda – a seagoing people with an extensive history of intensive maritime resource use, it is imperative to discuss the major theoretical issues in maritime anthropology. Though its origins were in cultural ecology, maritime anthropology has become a subfield of anthropology in its own right. It narrows the focus of ecological anthropology to coastal and fishing cultures, but incorporates elements of marine ecology and economics to develop a holistic understanding of the human-environment interface in maritime ecosystems. Maritime anthropology is important to this discussion because of its focus on complex social and ecological relationships in fisheries, such as their common property nature and their use and management.

Maritime anthropology developed from an ethnographic tradition that emphasized descriptions of variation in fishing strategy, systems of marine tenure, and the relationship of fishers to ecological systems (Acheson 1975, 1981). Cultural ecology's influence on maritime anthropology, led scholars such as Nietschmann (1973) to use an ecological focus and Cordell (1978) to account for ecological issues such as carrying capacity. Recent developments in maritime anthropology focus on methods of fisheries management (Fiske 1990), ecosystemic approaches (McCay 1978, McCay 1981), and risk as a driving factor in local decision-making practices (Pollnac et al. 1998).

Fishing is an occupation that is filled with uncertainty; fisherfolk are never guaranteed that they will return to their homeport with enough fish to break even (Pollnac et al. 1998). As a result of this risk and uncertainty, many fishing cultures have developed similar cultural adaptations to help them cope with and minimize these dangers (Pollnac 1988). Acheson (1981) supports this idea by stating that fishing

cultures emphasize a great amount of self-reliance and independence in their profession in order to deal with risk and danger. In order to fully take advantage of fisheries, fishermen must be willing to engage in high-risk behavior (Hanna 1997). Fishers view attempts at cooperation with other fishers, such as cooperative management, as ways to take the challenge and prestige out of fishing. Since fishers deal with common property resources, they often find themselves in intense competition with other fishers, where higher risks are often acceptable (Cordell 1989).

A major theme within maritime anthropology underscores the importance of common property nature of fishery resources (Cordell 1989, McCay and Acheson 1987). There are two types of common property resources (CPRs): those that have common property management systems and those that are open-access. CPRs with commons management systems encompass those resources that are owned communally and where aspects of resource use are managed by either *de facto* or *de jure* institutional structures. They should be distinguished from CPRs that are open-access where there is no institutional control, formal or informal, over resource use (Iversen 1996). The artisanal fisheries of the Bay Islands, Honduras are a prime example of an open-access resource because there are currently no controls over who can fish in local waters and no management of the fishery.

Problems associated with common property were initially put forth by Hardin (1968) in his "Tragedy of the Commons" scenario; where lack of regulation and increased usage can lead to ecological degradation and poverty. The real "tragedy" is actually a failure of institutional structure to regulate resource use via private property rights. Ostrom et al. (1999) characterize the problems of common property resources as

ones of subtractability (where each user's activities diminishes the ability of other users to use the resource) and excludability (where it is difficult to determine property rights).

Several major problems are associated with open-access resources. First, the incentive structure is oriented such that an individual's effort goes to extracting resources instead of producing them. Second, there is an inhibition to investment for two reasons; the inability to safeguard private investments and because there is more incentive to spend effort in extraction rather than in tenuous investments. Third, there is over-investment in extraction effort, including type of equipment used and time spent in extraction activities. Fourth, price signals do not work well to regulate resource use. In fact, just the opposite; as open-access resources are depleted, their value increases, potentially spurring increased extraction effort. Economists have discussed how this characteristic of CPRs is a technological externality where the average unit of productivity is inversely related to the average unit of effort (Bell 1972).

Open-access resources are vulnerable because the economic and ecological cost incurred by one individual is shared by the entire community. The literature on maritime issues contains many case examples of common property degradation resulting from overfishing and technological development (Kurien and Achari 1998), increased entry into fisheries (Pauly 1997), and as a consequence of coastal development (Morris 1992). Many fisheries in the world are experiencing decline because of increased entry (McGoodwin 1991), increased efficiency of technology (Kurien and Achari 1998), and conflict with competing uses of the resource (Stonich 1995, Stonich et al. 1997, Young 1999).

Scholarship within maritime anthropology stresses the importance of the relationship between management systems and social practices. Much of the research devoted to study of management systems has focused on fisheries in developed countries because those societies possess complex fisheries management agencies and extension services to provide vital statistical information for regulatory practices (Hanna 1997). Several different techniques have been suggested to help manage fisheries. In the past, fisheries management strategies in developed countries originated in centralized agencies endowed with a wealth of statistical information and used regulations such as limited entry, allowable catch, gear types, and fishing seasons. However, these top-down strategies were criticized for leading to the exhaustion of many fisheries such as Cod (Kurlansky 1997) and for being reactionary and not taking more effective preventative action (Dyer 1994). Unfortunately, top-down management strategies are ineffective for countries such as Honduras, where the centralized fisheries agency lacks scientific and regulatory capacity.

In areas of the world without developed biological fisheries agencies or extension services it is difficult to set fishing quotas or gear restrictions because there are insufficient statistical data to guide the management process. In such cases, anthropologists have focused on traditional common property management systems to provide models for the management of other fisheries (Davis and Bailey 1996, Dyer and McGoodwin 1994, Knudsen 1995, Palmer 1993). Traditional management systems typically use local institutions based on systems of folk knowledge to guide who uses the resources and the way in which they use it (King 1997, Mantjoro 1996).

One increasingly popular method of making fisheries management proactive is to incorporate the participation of local communities (Warner 1997, Christie et al. 1994, Davis and Bailey 1996). Social scientists advocate participatory approaches in management planning and implementation as a means to make the management process more effective. The community focus intends to develop a system that fosters co-management by including a bottom-up perspective from individual stakeholders combined with top-down facilitation and enforcement of regulation (Wilson et al. 1994, Jentoft et al. 1998, Jentoft and McCay 1995). Co-management can provide local users with a feeling that they have an important stake in their fishery and can help fisheries agencies encourage conservation and sustainable use of maritime resources (Ventocilla et al. 1996, Hartup 1994).

Maritime anthropology is relevant to my dissertation because I focus on the activities of fishing people. For Punta Gorda fishers in Roatan, Honduras the open-access nature of their fishery will eventually lead to its collapse unless management action is taken. Increased numbers of Garifuna fishers combined with their use of unsustainable fishing techniques means that they are severely depleting their local resources. By framing discussion of Punta Gorda's case in the context of maritime anthropology, I obtained a valuable analytical perspective to understand the challenges that Garifuna fishers face and how their resource use practices affect the local ecosystem. By studying how fishers make economic decisions (including resource use activities) within an open-access system it is the intention of this dissertation to inform scientists and environmental managers as to why individuals in the fishery continue to exploit degraded resources.

Research Methods

My field site was located in the Garifuna community of Punta Gorda on Roatan, the largest of the Bay Islands, which lies about 35 miles off the northern coast of Honduras. I initially arrived on Roatan on January 1, 2003 and found lodging in the community of West End. Since that January was particularly rainy and because Punta Gorda, my intended study location, was located on the other end of the island (a thirty mile, hour long drive), I had difficulty finding a residence there until mid-February. I remained in Punta Gorda from mid-February 2003 through March 2004, during which time I was able to conduct a variety of inquiries.

To carry out my research objectives, I aimed to use the most appropriate research techniques, which often involved a combination of qualitative and quantitative research methods. To address the first research objective – establishing the socioeconomic and politically marginal nature of the Garifuna community of Punta Gorda – I determined that I needed to consider Garifuna history as well as their present circumstances in the community of Punta Gorda. To interpret Garifuna history, I borrowed methodology from ethnohistory, namely the critical use of historical documents, archaeological evidence, and historical linguistics to develop a model of Garifuna culture in the past. Axtell (1997: 13) defines modern ethnohistory as:

> An idealized pattern of meanings, values, and norms differentially shared by the members of a society, which can be inferred from the non-instinctive [or learned] behavior of the group and from the symbolic products of their actions, including material artifacts, language, and social institutions.

Though one should not presume it is true in all cases, much ethnohistorical work focuses on past cultures that were marginal or at least were pushed into the margins by their interactions with other cultures that had advantages in technology and political and social organization. The usual objects of study in ethnohistory are cultures that were non-literate and thus did not have a written history to benefit future scholars. When scholars are able to obtain oral history from non-literate cultures, it can provide a valuable counterpoint to written history that is often recorded by biased, outside sources. When oral history is not a reliable option, due to loss of knowledge or time distance, scholars must turn to ethnohistory. Ethnohistorical analysis provides researchers with a means to paint an accurate illustration of a culture's past, including how they interacted with other cultures and if their culture was marginalized through those interactions. Garifuna ethnohistory has been previously addressed by scholars such as Taylor (1951) and Gonzalez (1988). I consider their arguments and have also reanalyzed important ethnohistorical documents in order to reach my own conclusions about Garifuna past experiences and how they pushed Garifuna to the margins of society.

To further consider the marginal status of Punta Gorda's Garifuna population, I used ethnography to focus on their present and recently past experiences. By relying on participant observation to provide general details, and in-depth interviews with Garifuna fishers to gather information on their attitudes about current socioeconomic and political trends in the community and their interpretation of the recent past, I was able to develop a picture of how they view their present status to be marginal. Based on my interviews, I was able to identify themes related to Punta Gorda's poverty, lack of political influence,

and feelings of being simultaneously exploited and ignored by other groups and the government.

To analyze interview based data, N-Vivo – a software package for the analysis of qualitative data – was used. Using N-Vivo, researchers can code documents according to emergent themes and patterns – a process called content analysis. Once researchers have coded for various themes, N-Vivo can facilitate the organization and analysis of those themes so that they can develop models of the cultural system. Cultural modeling is a qualitative approach toward developing an understanding of cultural themes and patterns and is heavily based on schema theory (i.e. Casson 1983, D'Andrade 1995, Strauss and Quinn 1998). The key component of the cultural modeling approach is textual analysis – or looking for patterns within language (Bernard and Ryan 1998). Based on the frequency of mention of particular words and themes, cultural modelers can develop explanations of indigenous perspectives on social phenomena, such as marginality.

A second way of establishing marginality among Punta Gorda's Garifuna was to conduct a socioeconomic survey of the community. There are difficulties associated with developing socioeconomic ranking systems in non-Western societies. For example there is often no accurate database of census information to assist in a statistical analysis of wealth variances. It is also important to recognize that methods of valuing environmental resources and assigning social status vary cross-culturally (Goldin 1996). The list of items of value that individuals rank should be developed based on structured interviews (i.e. Weller 1998) and free-listing exercises that allow anthropologists to elicit information on cultural domains (Ryan et al. 2000).

Keeping these factors in mind I used Guttmann scaling to develop a system of socioeconomic ranking that was relevant to the community. Guttmann scaling is a method used to estimate the value of different items and the range of socioeconomic status in non-Western societies (Johnson 1998). Weller and Romney (1987) discuss how the Guttmann scaling approach develops a ranking system based on the presence or absence of material possessions owned by individuals or households. This ranking system serves as a proxy for socioeconomic status. To analyze information pertinent to Guttmann scaling, I used Anthropac 4.0 (Borgatti 1996) – a software package for analysis of qualitative data derived from ethnographic research methods.

To construct a Guttmann scale of socioeconomic status and wealth differentiation at the household level in Punta Gorda I developed a survey which collected information about the presence of material goods, economic behaviors (i.e. income from work and remittances), and social achievements (i.e. education and bilingualism). I administered this survey while I conducted a complete census of all households in the community. In addition to collecting data to develop a socioeconomic ranking system, the household census gathered data on other factors such as employment and subsistence patterns, and demographic factors such as age and gender of individuals within each household. The household census served an important secondary function because it established a sampling frame for random recruitment of fishers for catch surveys and in-depth ethnographic interviews.

My second research objective – to measure how Garifuna fishers affect local ecosystems by their maritime resource use practices – was achieved by conducting catch surveys with Garifuna fishers over a period of ten months. To administer catch surveys, I

asked fishers to self-report on a weekly basis the number of fishing trips they made, how long they stayed out fishing, what type of fishing method was used, and how much product was landed. By determining how much each fisher took from the sea and the amount of time they spent in resource acquisition activities, I was able to develop an estimate of each fishers' catch per unit effort (CPUE). This measure provides baseline data on how fishers affect their local resources. Taken by itself, data for one year does not provide much insight into Garifuna fishermen's resource use practices. However, I was fortunate to be able to compare my catch statistics with similar information gathered by PMAIB several years before. By comparing how fishers' CPUE changed, I was able to make inferences about trends in their resource use.

In addition to surveying Garifuna fishermen, I conducted in-depth interviews during which I collected information on their fishing strategies. For example, I asked fishers about length of time in and chronological continuity of individual participation in the fishery. Respondents were also asked to provide information concerning the types of species targeted, the technology employed to capture them, and when the technology was first used. After these interviews were analyzed using N-Vivo, I was able to develop a better understanding of how Garifuna fishers affect their local ecosystem.

My final research objective – to contextualize the place and role of Garifuna fishers in regional and international systems of social, economic, political, and ecological interaction – was addressed by increasing my analytical scope to focus on issues of maritime resource use throughout the Bay Islands. Much of this information was obtained by discursively analyzing documents related to fishing, tourism, development, and international relationships in the Bay Islands. I obtained several documents about

artisanal fishing in the Bay Islands from PMAIB. For information about tourism and development in the Bay Islands, I used documentary information from local organizations dealing with conservation (such as the Bay Islands Conservation Association or BICA), development (such as the Bay Islands Professionals and Laborers Association or NABIPLA) and tourism (such as the Bay Islands Chamber of Tourism or CANATURAH-BI). My understanding of international relationships affecting the Bay Islands was informed by analyzing local news sources (such as *La Prensa* – a daily paper in Honduras and *Bay Islands Voice* – a monthly magazine focused on the Bay Islands).

When discussing anthropological methods, it is essential to also discuss anthropological ethics. Many scholars (i.e. Brush and Stabinsky 1996, Greaves 1994) have pointed out that indigenous systems of knowledge have proprietary value and that these systems should be respected. A major way that anthropologists have helped to incorporate local perspectives and the desires of indigenous peoples into anthropological research is by making it a participatory process (Rhoades 1986). In the contemporary world, anthropologists cannot (and should not) approach their research from a top-down, extraction-oriented point of view. Instead, they should endeavor to negotiate with communities so that local people feel like they are part of the research process (Arcury and Quandt 1999). The use of participatory approaches can make research results more reliable and valid because the anthropologist acts as a research facilitator, instead of as a research extractor (Chambers 1994, Beebe 1995). Participation of local individuals in the research process also helps to ensure that the researchers will be held accountable to the study population.

Accountability to the local population is important to consider in the research process (Brosius 1999). One of the best ways to remain accountable to the study community is to "give back" the results of research to the very people who helped make it possible. To hold myself accountable to the community of Punta Gorda, I plan to share my findings with the people there. Since there is currently no museum or cultural center in Punta Gorda I believe that the best method of sharing my work is to donate a copy of my dissertation to the local school. I also intend to make my dissertation available in an online format which residents of Punta Gorda will easily be able to access at the local internet café. In addition, I plan to share my findings with PMAIB in hopes that it might shed further light on the challenges that face the Garifuna fishery and the management thereof.

Structure of Dissertation

In this dissertation I will examine how a marginal community responds to cultural and ecological challenges. To do this I focus on the Garifuna people's struggle to survive throughout history with the goal of fully contextualizing how their socioeconomically marginal status has influenced their culture in terms of world view, way of life, and subsistence practices. In this chapter I have outlined the basis of my theoretical perspective in cultural ecology and how I was inspired by recent developments in political ecology and maritime anthropology. In addition, I have explained what methods were used to assess my research objectives. In Chapter Two, I will explain how the Garifuna came to be in a marginal position by analyzing their history from the time of

their ethnogenesis in the Lesser Antilles to recent events in Honduras. In Chapter Three, I will discuss the cultural ecology of the Bay Islands of Honduras to lay out how the Islands' unique history, geography, and environmental characteristics have influenced the trajectory of Garifuna cultural development. In Chapter Four, I focus on present-day ethnographic characteristics of Punta Gorda with emphasis on demographic structure, socioeconomic status, and cultural practices, both traditional and changing to demonstrate how Garifuna are positioned at the margin of society. Chapter Five discusses variation in Garifuna fishing practices, including differences in fishing methods, time commitment to fishing, target species, and catch levels. Chapter Six expands discussion of fisheries related issues to include all relevant stakeholder groups in the Bay Islands, such as commercial and artisanal fisheries, tourism-oriented groups, and environmental groups. Chapter Seven summarizes my discussion of Punta Gorda's marginality and maritime resource use practices, readdresses theoretical concerns, and draws conclusions.

CHAPTER TWO

ETHNOHISTORY OF THE GARIFUNA CARIBBEAN

History can never be understood apart
from its moment in time – Marc Bloch (1953:35)

Figure 2.1 Map of Central America and the Caribbean

My study of Garifuna culture starts hundreds of miles away from their present location in the Bay Islands and centuries ago in the Lesser Antilles. Like Central America, the eastern Caribbean has a dynamic cultural history which spans across a much greater geographical area than what its name implies. People from the Americas, Europe, Africa, and Asia have all brought their own distinct flavor to the Caribbean. The

Garifuna are but one of the hundreds of cultures who have called the Caribbean basin home throughout the slow, but ever progressing march of time. They are unique, however, in that they are one of the few cultures that can be considered truly indigenous to the Caribbean.

Garifuna culture was born on the island of St. Vincent nearly 400 years ago, a product of intermarriage between indigenous Island Carib and escaped African slaves. The Garifuna story should not be studied as an interesting historical anecdote; rather it should be contextualized within socioeconomic, political, and historical patterns that have influenced the Caribbean over the past millennia. Representation of Garifuna cultural development as a continuous unchanging tradition is impossible. More accurately viewed as the product of various influences and constraints, the ethnogenesis of Garifuna culture could be viewed as the ultimate form of cultural survival.

For well over a thousand years, the Caribbean basin has witnessed the rise and fall of several widely varied cultural groups. At different points in history, control of the Caribbean belonged to Ciboney, Arawak/Taino, Carib, Spanish, French, English, and American socioeconomic and political networks. The cultural landscape of the Caribbean endured constant transformation both in Pre-Columbian times and after the arrival of Old World cultures. Perhaps owing to its geographical location in-between two of the world's great continents, its fortuitous position near useful sea currents and trade winds, and its year-round benevolent tropical climate (excepting hurricanes, of course), the Antilles have been a crossroads of culture throughout time. Remaining true to the present day, the Caribbean could be construed as a frontier where different societies have mingled and competed for political and economic dominance. As in all historical

transformations, some cultural groups came out ahead while others suffered losses. In the case of the Garifuna, their struggle through history has positive and negative aspects. As their unique society was born from the mixture of two cultures, Garifuna were endowed with some advantages that promoted their survival as a culture. Unfortunately, they were on the wrong end of colonial endeavors and eventually lost their historical homeland.

Not including Pre-Columbian Antillean societies, whose systems of political organization had not yet developed complex state-level, empire-seeking governments, each of the cultural groups involved in the Caribbean viewed the area as an outlying border area to be dominated, conquered, and incorporated into their empires. In the classic pattern of world systems, European empires exploited the Caribbean to the benefit of distant developed core areas in their homeland without providing the means or incentives for development of local infrastructure, economy, and society. Yet none of these empires were able to maintain long-term control over the Caribbean.

This chapter focuses on the ethnohistory of Garifuna tracing their history from St. Vincent to arrival in Roatan, Honduras. Emphasis is given to phenomena that led to marginalization of Garifuna in the past and contributed to their marginal status in contemporary times. In order to engender an accurate portrayal of ancestral Garifuna in the Eastern Caribbean (St. Vincent) and to avoid confusion with present-day Garifuna in the Western Caribbean, this chapter refers to St. Vincentian Garifuna by their historical, European-given name: Black Carib. Present-day members of this culture prefer to identify themselves and their ancestors by their indigenous name, Garifuna (singular) or Garinagu (plural), rather than use a name associated with discrimination and prejudice.

Because many historical works use “Black Carib” in their accounts of the ancestral Garifuna, this chapter will use that term in order to maintain continuity and avoid confusing contemporary Garifuna with their progenitors.

Caribbean Prehistory

Prior to arrival of Old World cultures to the Caribbean, the region had already witnessed several mass migrations of different groups of people into the area. The two archipelagoes that constitute the geography of the Caribbean served as stepping stones over which various groups from South America, such as Ciboney, Arawak/Taino, and Carib, were able to island hop their way north through the Lesser Antilles, and then west through the Greater Antilles. The most recent pre-Columbian migration into the Caribbean was by Carib-speaking peoples. Possibly driven by population pressure and environmental circumstances that led to fewer subsistence resources, Carib tribes began to migrate into the Lesser Antilles from the coast of South America around the year 1200 (Gullick 1985). Their social organization was not as complex as that of the Arawakan chiefdoms that they were replacing; Carib society was structured into tribes. Their subsistence was based on fishing and farming of staple crops, such as cassava.

There are two major theories on Carib expansion into the Lesser Antilles: a conquest model and a trade model. The Carib conquest model is based on the idea that Carib tribes pushed Arawak-speaking groups out of the Lesser Antilles by violent means. Arawak cultures steadily retreated northward where they took refuge in the larger islands, but “fierce” Carib warriors persistently pursued them. Carib conquest models have been

heavily criticized due to scant supporting evidence, because it romanticized Carib people as “Noble Savage” conquerors, and because it seems unlikely that chiefdoms would be eliminated by societies with less complex forms of political organization such as tribes (Hally, personal communication).

Critics contend that the conquest model is based on dubious historical accounts provided by early European explorers who had only passing contact with indigenous peoples. Erroneous reports were perpetuated since the beginning of European exploration: Columbus’ first encounters were with Taino/Arawak societies living in the Bahamas and the Greater Antilles – areas where Carib had not yet made significant inroads, yet he wrote about Carib as if he had firsthand knowledge. When the Spanish arrived in the New World, Arawak inhabited the Greater Antilles and a portion of Trinidad, while Carib occupied the Lesser Antilles (Ashdown 1979). Perhaps due to the more organized political structure of Arawak society, Spanish conquistadors viewed them as a gentle, cooperative people in contrast to the hostile and warlike Carib (Rogozinski 1999). Opponents of the Carib conquest model also argue that there is insufficient linguistic evidence to support the idea that Carib-speaking tribes completely replaced Arawakan-speaking peoples in the Lesser Antilles.

Oral tradition in Carib society lends support to the conquest model of Carib expansion. According to Carib myths described by Gullick (1985), Arawakan-speaking tribes living near the Orinoco delta in South America had enslaved their Carib-speaking counterparts. With the aid of their allies, the Galibies, Carib slaves rebelled against their captors, brutally slaughtered them, and then escaped to sea. Carib-speaking tribes then island-hopped through the Lesser Antilles, ravaging all people they encountered.

Presumably, peaceful Arawak chiefdoms were unable to withstand the onslaught of warlike Carib who unequivocally killed all Arawak men and boys of fighting age while keeping the Arawak women as enslaved wives.

This oral history is echoed by eighteenth century scholar, Sir William Young (1971: 5) who described how "Carib traveled to Trinidad, Tobago, Grenada, and then to the Grenadines," eventually making their way to St. Vincent, where they found Arawak already inhabiting the islands. Carib slaughtered the male Arawak, took the females as wives, and adopted the children. However Young's account was certainly biased for a number of reasons. First, he personally suffered during conflict with Carib and most likely had desire for retribution. Second, he wrote his account using papers from the archive of his father who had been a governmental representative of St. Vincent where the Carib (and Black Carib) had a stronghold. Finally, following in the footsteps of his father, Young represented St. Vincent to the English crown and it is entirely possible that he presented a disparaging account of the Black Carib to justify the expropriation of their lands.

The alternative model of Carib expansion is the island trader model. Proponents of this model argue that linguistic and archaeological evidence points to peaceful expansion into the Lesser Antilles by Carib tribes through systems of trade. Carib traders traversed distances between islands using large, sturdy canoes fully equipped with paddles and sail and capable of holding dozens of people and large quantities of trade goods. Archaeologists point out that there was no significant change in material culture around 1200, when Carib supposedly moved into the area, thus discrediting the idea that a new culture arrived to conquer the previous inhabitants. Although the smaller islands

in the Lesser Antilles where Island Carib lived lacked large ceremonial structures such as found on some of the Greater Antilles, similarity in material culture, such as pottery styles, suggests that their inhabitants were participating members of a greater Arawakan culture found throughout the Caribbean.

The island trader model suggests that distinct Island Carib languages found in the Lesser Antilles were pidgin trade languages that developed as a result of peaceful economic and social exchange. Despite its name, Island Carib is a linguistic sub-family which is classified as part of the Arawakan language family. Adherents of the island trader model point out that only about one-third of Island Carib words have cognates in South American Carib languages, thus making it unlikely that a complete replacement by conquest ever took place.

However, linguistic evidence also supports the idea that Carib-speaking people displaced Arawak cultures. The Galibi (pronounced Ga-lee-be) of Venezuela have a corresponding contemporary culture of the same name and their name is strikingly similar to Caribe (Ca-ree-be). Galibi are closely related to the Kallina or Kalinagu – a historical Carib culture from the South America coast. Again, the similarity in names jumps out, with Kalinagu resoundingly similar to Garinagu of St. Vincent and even more similar to the name of a living group of Island Carib in Dominica who call themselves Karifuna or Karinagu. The Kallina/Kalinagu migrated into the Caribbean islands, and as they mixed with local Arawak societies, their language changed into a form known as Caliponam or Island Carib (Suazo 1994). Although contemporary Garifuna is classified as an Arawakan language, Garifuna still consider themselves to be descendents of Island

Carib. The word Garifuna and its plural, Garinagu, are variants of a Carib word meaning "the cassava eaters".

Because Island Carib incorporates vocabulary from both Carib and Arawakan languages, there are interesting gender-based divisions in its lexicon. Island Carib males use vocabulary that is much more Carib in origin, while Island Carib females use Arawakan vocabulary (Suazo 1994). Such linguistic differences could support either model of Carib expansion; the men's language could be portrayed as a pidgin trade language which spread via economic contacts or the men's language could have been the result of violent mixing between two distinct cultures as Carib men conquered new islands. Regardless of which occurrence actually happened, it is reasonable to say that as Island Carib men traded, fished, and set off on conquering or raiding expeditions, they maintained some degree of homogeneity in the male language, while women and children at home spoke an Arawakan version of the language.

Which model is correct? Were Island Carib savage conquerors or were they peaceful traders? Both models have merits and drawbacks. While the Carib conquest model paints an overly romantic picture of savage Carib warriors cannibalizing peaceful Arawak farmers, and should be taken with a grain of salt, there was surely violence in the form of raiding and slave-taking in the Pre-Columbian Caribbean. And while trade-based expansion corresponds better with archaeological and linguistic evidence, it is doubtful that speakers of a pidgin trade language would refer to themselves by Carib names such as Kallina and Karinagu and maintain oral history about their Carib origins if they were not in fact Carib or, at least, highly acculturated to Carib customs and culture. Because both conquest and economic exchange models have merit, the truth most likely lies

somewhere in-between, making a combination of trading and raiding the most plausible explanation for Island Carib expansion. This early stage in Garifuna history was one of the few time periods where they were not marginalized by other groups of people. In fact, pre-Columbian Island Carib ancestors of modern Garifuna were so effective in exploiting their cultural and ecological landscapes that they successfully expanded their realm of influence and thus may have been perceived as aggressive by their Arawakan neighbors in the larger islands.

European Conquest and Indigenous Marginalization

Emboldened by recent military success in the *Reconquista* (reconquest of the Iberian Peninsula), equipped with improvements in navigation, and driven by economic-based desire for new trade routes to circumvent middlemen in the valuable spice trade, Europeans began to explore away from their homeland in the fifteenth century. In 1492, Italian navigator Christopher Columbus crossed the Atlantic believing that he could find a new trade route to the "Great Khan of Asia" (China). Under the terms of the Treaty of Torsedillas, Spain divided the world with Portugal and gained unfettered claim to the Philippines, North America, the Caribbean, and most of South America (Randall and Mount 1998). In the two decades after Columbus' landmark voyage, Spanish colonial and exploration efforts in the New World focused primarily on the Caribbean and had significant effects on Arawakan and Carib societies.

As colonies began to thrive, Spanish adventurers arrived to the New World to reap its wealth and make their fortune. Spanish colonial administrators and clergy also

sought to Christianize "heathen" indigenous peoples. Although Spanish conquistadores and missionaries had seemingly contradictory aims of economic exploitation and religious salvation, they both employed strategies which marginalized indigenous cultures to justify the exploitation of as many people and resources as possible. In essence, Spain's early New World experience was the extension of the same religious militarism that characterized the Reconquista (Stevens-Arroyo 1993). In their quest for mineral riches, greedy Spanish explorers co-opted religion to justify the exploitation and enslavement of thousands of indigenous peoples. They used the flawed logic that indigenous people who refused conversion to Christianity had no souls and thus it was not sinful to make slaves of them.

In 1503, the Spanish government officially sanctioned enslavement of non-Christian indigenous people with the *Encomienda* (Winn 1999). This ultimately encouraged Spanish slave-taking raids in all parts of the Caribbean. Encomienda provided Spanish conquistadores with quick access to labor, but the susceptibility of Native Americans to Old World disease soon diminished their value as slaves. Because of the rapid depopulation of Caribbean indigenous societies due to disease, genocidal purges, and horrendous labor conditions the Spanish began to look for other sources of labor, such as African slaves. Although the Spanish initially resisted the introduction of African slaves, they soon became the preferred laborers because of their greater resistance to disease.

Espanola (present-day Hispaniola) remained the only Spanish colony in the Caribbean for sixteen years (Andrews 1978). Demonstrating the centrality of Espanola to Spanish colonial strategies, a 1511 map of the Caribbean by Peter Martyr (see Figure 2.2)

places exaggerated emphasis on the island and gives much less attention to other islands. Spanish settlers slowly expanded into other Caribbean islands, but relative lack of mineral wealth in the Caribbean soon led Spanish interests to look for riches of gold and silver on mainland America, such as in Mexico and Peru. Spanish colonizers largely ignored the Lesser Antilles because it was believed that the tiny volcanic islands held insufficient mineral resources to justify a costly campaign against the warlike, indigenous Carib.

Figure 2.2 Peter Martyr's 1511 Map of the Caribbean

Numerous historical accounts of the Carib describe how they valiantly defended against any incursions into their territory, even though they initially had no access to firearms. The fierceness of Carib resistance kept the Spanish at bay, but helped to reinforce their reputation among Europeans as savage cannibals (Boucher 1992). Early historical accounts of the Carib emphasize their propensity to take slaves and to

cannibalize Europeans. Because it was part of their cultural tradition, it is entirely likely that Carib warriors enslaved some of their enemies after victoriously capturing them in battle. Similarly, it is possible that some captives were ritually sacrificed and portions of their body (i.e. the heart) eaten ceremonially. Interestingly, the etymological root of the word "cannibal" comes from a historic Carib tribe known as Caniba. Columbus first heard about Caniba from Arawakan tribes living in the Greater Antilles who related stories about flesh-eating tribes who lived in the Lesser Antilles, but he never had direct contact with these alleged cannibals. Reports of cannibalism may have been only a ruse to turn the Spanish against the sworn enemies of Arawakan tribes.

Tales of Carib cannibalism were aggrandized by European writers and misconceptions about Carib culture remain widespread to this day. Ironically, their reputation as fierce, dangerous cannibals may have spared Carib tribes the immediate wrath of colonization. In a sense, Carib benefited from propaganda that warned of their savagery; for example, one account listed Carib order of preference for European flesh: "…the Carib found the French to be quite delicious, the English and Dutch mediocre and tasteless, and the Spanish to be stringy and gristly" (Barome 1966: 32). Due to their geographical location on small mineral-poor islands and their undeserved reputation as cannibals, Island Carib societies were able to maintain territorial and social integrity throughout most of the Lesser Antilles, unlike their unfortunate Arawak/Taino cousins to the north. Although these initial reports of Carib ferocity and flesh-eating practices were based on hearsay, the association between Carib and cannibalism has persisted to the present day. Upon hearing that an upcoming motion picture, "Pirates of the Caribbean 2"

negatively portrayed Carib as flesh-eaters, one of my key informants, a self-styled scholar of Garifuna history, expressed concern and dismay that his ancestors were cannibals.

The impact of Spanish colonialism on the Caribbean Islands led to rapid decline of indigenous population and the destruction of Arawak society. Due to the limited degree of agricultural production, Spain did not create significant change to the ecological landscape. The Spanish world system in the New World was geared toward mineral extraction in order to fund costly military campaigns in Europe. This resource use policy led the Spanish to largely ignore the Caribbean and focus on the conquest of wealthier state-level societies in Mesoamerica and Peru. Spanish colonial effort in the Caribbean was limited to the Greater Antilles and thus enabled the Carib to continue their control of the Lesser Antilles. Island Carib ancestors of the Garifuna in St. Vincent were undoubtedly targeted by Spanish slave raiders, but they managed to maintain a cohesive society and sometimes engaged in raiding enterprises themselves.

European Competition for the Caribbean

In the early sixteenth century, Spain's Habsburg dynasty controlled the largest empire in the world and used their New World mineral wealth to fund dreams of European empire. In doing so, Spain placed herself in direct opposition to countries such as England, France, and the fledgling Dutch Republic. Although expansion of territorial control provided enough reason for warfare, much of the conflict between Spain and Northwest European countries was based on ideological and religious differences. Differences in colonial management strategies did not influence the reasons for conflict,

but nonetheless helped determine its outcome. Spanish colonial strategy was clearly exploitative, while Northwest European strategy focused more on agricultural mercantile colonialism. One can correctly argue that mercantilism was also exploitative since it disrupted native populations, encouraged slavery, caused drastic ecological change, and maintained a substantial difference in political and economic power between the colony and the homeland. However, mercantile colonies did require more investment and attention from the home country, thus leading to a long-term presence.

As early as 1522, Northwest European powers began to challenge Spanish authority in the Caribbean (Rogozinski 1999). Privateers were encouraged by France, England, and Holland to attack Spanish shipments of gold and silver from the New World. Privateering was viewed as a favorable alternative to the political and economic cost of official government action and a useful tool to pressure Spain for access to Caribbean trade (Andrews 1978). Since Spain used a large portion of its New World plunder to fund a series of wars in Europe, privateering offered the opportunity for states to potentially harm an essential part of the Spanish empire and weaken its military capability.

Spanish response to the privateer threat led to the development of a convoy system (Ashdown 1979). In spite of these protective measures, raiding continued throughout the sixteenth century and contributed to hostile relations between Britain and Spain in the European theater. Anglo-Hispanic conflict culminated in the late sixteenth century when Spain sent their ill-fated Armada against England. After their Armada was lost, Spain's control of the seas in Europe and the Caribbean was terminally weakened,

giving Northwestern European countries greater leeway to capture large islands such as Jamaica and part of Hispaniola and colonize the smaller Leeward Islands.

Further to the south in the Windward Islands, Island Carib were able to maintain territorial control, at least temporarily. They resisted multiple attempts at settlement by the British, French, and Dutch. It was not until the rise of the sugar plantation complex that European powers were able to effectively wrest control of the islands from the Carib. Early in the colonial phase of the Lesser Antilles, Britain and France cooperated to some degree in order to combat Spanish and Carib threats (Boucher 1992). But with Spanish power on the decline, cooperation between England and France quickly turned into competition. In 1630, England colonized Barbados and in 1635 France occupied Martinique. In both instances, these islands were used to serve as bases in the New World for trade in African slaves (Knight 1997).

During the seventeenth century, France's colonial efforts put them into direct conflict with Island Carib societies on several different islands. After defeating Island Carib tribes in 1660, the French forced them to sign a treaty which mandated Carib resettlement on either St. Vincent or Dominica (Layng 1983: 24). Although the treaty was signed by only a few Carib tribal leaders and not representative of all Carib tribes, many Carib migrated from surrounding islands to their two strongholds on St. Vincent and Dominica (Boucher 1992). On these two islands Carib populations still exist in significant numbers. Despite having confined Carib activities to a narrower sphere, some Europeans felt that the Carib should not enjoy those privileges and wanted them destroyed (la Borde 1992). As the Carib landscape became depopulated, the Lesser

Antilles were left open to mercantile colonization and the establishment of sugar plantations.

French and English mercantilism in the Caribbean was centered on the cultivation of sugar cane. Europeans had known of sugar cane for centuries, but the crop does best when planted in tropical or sub-tropical climates. In addition to types of sugar, cane was used to produce molasses and distilled to produce rum. All three of these products were in high demand in European society, thus motivating the expansion of sugar production in the West Indies. Since sugar cultivation requires intense amounts of labor, plantation owners made use of slaves and indentured laborers.

Garifuna Ethnogenesis

The constant need for more slave labor led to the development of the infamous Triangle Trade, which involved transportation of African slaves to the Americas where they were used in sugar production; shipment of sugar, molasses, and rum from the Americas to Europe; and trade of European manufactured goods, such as iron products, in Africa for more slaves. Europeans had been trading in African slaves since the early 1500s, but establishment of labor intensive agricultural colonies led to significant increases in the slave trade. West Africans were viewed as ideal slaves, in part due to their heightened immunity to Old World diseases that had been inadvertently imported to the Americas. The African slave trade produced disastrous consequences for the people and nations of West Africa and the Middle Passage of slave ships across the Atlantic was cruel and inhumane and thousands of slaves died during the voyage. As a consequence

of the slave trade, there was a major demographic shift in the population of the Caribbean so that oppressed and enslaved Africans outnumbered their European captors.

Slave traders were not always successful in reaching the Americas with their cargo. Sometimes ships were lost at sea or shipwrecked near islands and some slaves may have survived these calamities. There were also frequent uprisings on slave ships, which when successful, allowed small groups of Africans to settle freely in the Americas. Collectively known as Maroons, these escaped slaves settled across diverse areas of the Americas, from Mexico to Guiana. One group of Maroons landed near St. Vincent (see Figure 2.3), where they adopted Island Carib traditions and intermarried into the culture to form a distinct ethnic group: the Black Carib (Gonzalez 1988).

Map 2. The island of St. Vincent in the late eighteenth century. From Bryan Edwards, *History Civil and Commercial of the British Colonies in the West Indies*, vol. 1 (London, 1807).

Figure 2.3 Map of St. Vincent (Edwards 1807 in Young 1993)

Black Carib folk history dates their ethnogenesis to sometime between 1535 and the early 1700s (Gullick 1985). Early European travelers reported evidence of intermarriage between Carib and Maroons before 1646 (Young 1993). The most widely accepted account of Black Carib ethnogenesis describes how two Spanish slave ships wrecked near the Grenadines in 1635. The enslaved Africans escaped their captors and swam to shore where they encountered Carib natives and joined them (Gullick 1985). It may never be known exactly when the first Africans arrived on St. Vincent. While the best circumstantial evidence points to the 1635 date, it is nearly impossible to actually verify this by archaeological investigation. There was no major change in material culture on St. Vincent, so it appears that the Afro-Carib hybrid culture maintained Island Carib traditions. One avenue of research into the question of Black Carib origins would be to look for a shipwreck in the area surrounding St. Vincent. However, due to the inherent difficulties in underwater archaeology, it is likely that any such shipwreck has since deteriorated, been washed away by sea currents, or covered with sand and other debris. Two key points make the 1635 date plausible: the proximity of St. Vincent and the Grenadines to Barbados and the treacherous nature of the prevailing sea currents in the Windward Islands. The British sugar colony and slave trading post at Barbados is strategically positioned almost one hundred miles outside the archipelago of the Lesser Antilles. To reach the port of Bridgetown on the western side of Barbados, a ship must sail past the island and then tack to the east – against the current and the prevailing wind. It is conceivable that one of the frequent Caribbean storms may have blown a slave ship past Barbados and into the shoals of the Grenadines before captain or crew was aware of their error.

After the slave ships wrecked, the escaped Africans began to be incorporated in local Carib society. Following their tradition of slave taking, it is likely that Caribs quickly returned the escaped Africans to slavery. Physically and psychologically weary after a long and arduous sea voyage and hampered by communication difficulties (slave ships were often loaded with slaves who spoke different languages to try to avert organized rebellion), the shipwrecked Africans probably could not resist Carib attempts to return them to slavery. According to Young (1971: 6), Carib fishers discovered the Africans in "great distress for provisions, particularly water" and subsequently transported them to St. Vincent to work as slaves. The practice of slavery among the Carib was radically different than that practiced by Europeans, in that there were fewer instances of inhumane cruelty and the offspring of slaves were treated as full members of society.

After being shipwrecked, the Africans recuperated for a time among the Carib during which they adopted Carib language and many customs. But, the Africans proved to be "restive and indocile servants" (Young 1971: 7) and their Carib captors resolved to put all male children of the Africans to death. The Caribs believed that soon the Africans would outnumber themselves. However, the Africans rebelled against Carib plans, killed some of their captors, and subsequently fled to the mountains on the northeast coast of St. Vincent. There, they joined with other Africans who had run away from slavery on nearby islands. In their mountain refuges, the Africans continued their practice of local native customs, perhaps in an effort to affirm their own indigenous claims. As Young (1971: 8; original 1797) describes:

> Incorporating with these Negro outlaws, they formed a nation, now known by the name of Black Charaibs; a title themselves arrogated, when entering into contest

> with their ancient masters. The savage, with the name and title, thinks he inherits the qualities, the rights, and the property, of those whom he may pretend to supersede: hence he assimilates himself by name and manners, as it were to make out his identity, and confirm the succession. Thus these Negroes not only assumed the national appellation of Charaibs, but individually their Indian names; and they adopted many of their customs: they flattened the forehead of their infant children in the Indian manner; they buried their dead in the attitude of sitting, and according to Indian rites; and killing the men they took in war, they carried off and cohabited with the women. To the latter practice of either people is attributed the tawny and mixed complexion to be met with occasionally among the Charaibs.

By 1713 there were at least 4,000 to 5,000 Black Carib living on St. Vincent (Boucher 1992) and they were able to defend their island from French attack in 1719 (de Groot et al. 1997).

It is difficult to ascertain exactly how much mixing took place between indigenous Island Carib on St. Vincent and escaped African slaves who arrived in the early seventeenth century. Recent studies (Crawford 1984) used blood typing to compare the relative genetic contribution of West African, Native American, and European genes to contemporary Garifuna populations. This data was then used to estimate the historical genetic structure of Black Carib populations living in eighteenth century St. Vincent. Roberts (1984) concludes that Native American genes contributed at least 50% of all genes in the hybrid Black Carib population in St. Vincent. However, contemporary Garifuna populations reflect less Native American ancestry because of more recent admixture with non-Garifuna populations of West African ancestry (i.e. Creoles).

The ethnogenesis of the Black Carib was a novel response by two formerly different groups to the threat of marginalization by European colonialism. Island Carib had been previously marginalized by the loss of their land on other islands and subsequent confinement to St. Vincent and Dominica. Old World disease also severely

affected Island Carib populations, leading to drastic demographic declines. Their society and culture was under threat of complete annihilation. West African populations had been marginalized by Europeans through the practice of slavery. Forcibly taken from their homeland and subjected to inhumane treatment during the Middle Passage, Africans were victims of one of the ultimate forms of marginalization – loss of all political, social, economic, and human rights. When these two groups came into contact with one another, it gave them both the prospect of survival. Island Carib undoubtedly saw the advantage of incorporating physically larger and presumably stronger Africans into their depopulated society. While Africans were given the opportunity to escape their European slave drivers (even if they were quickly returned to slavery). As the two populations mixed, Island Carib numbers were reinforced and the homeless Africans gained a new culture to unify themselves. Though the ethnogenesis of the Black Carib did not occur overnight and certainly was not a voluntary or planned process by either group, both cultures ultimately benefited from the merger. Through their combined strength, they were able to resist further marginalization by Europeans well into the eighteenth century, long after other indigenous Caribbean peoples had been annihilated or pushed into remote refuges.

Carib Resistance to European Colonization

By the eighteenth century, momentum for colonization of the Caribbean was gaining, but it came from different European powers. Throughout the 1700s, England and France vied for economic and political supremacy in Europe and both had imperial

ambitions in the Americas. The English-French conflicts in North America and the Caribbean should thus be viewed as manifestations of larger world-wide conflicts for global supremacy. In the Caribbean, a major aspect of conflict between Britain and France was competition for control of West Indian sugar production (Badillo 1995). After suffering low prices due to a glut in the European sugar market, prices began to rise after 1740 (Stinchcombe 1995). Under these circumstances, Britain and France increased their colonization effort and their overall impact on indigenous peoples in the Caribbean basin. As one of the few remaining indigenous cultures in the Caribbean, the Black Carib were caught in the middle of conflict between these two great powers.

Britain laid claim to St. Vincent early in the seventeenth century as a logical extension of their colony in Barbados. In 1722, George I granted St. Vincent to the Duke of Montague, however the British exercised "no rights of sovereignty, other than wooding and watering" (Young 1971: 4). During this time, St. Vincent was inhabited by Red Carib (the original natives) and Black Carib (the escaped slaves who had acculturated to and mixed with Island Carib). Despite British claims to St. Vincent, Carib people living there had more contact with French colonists living in Martinique. They frequently traded with French and a number of Carib leaders were able to speak that language. The Black Carib on St. Vincent maintained a policy of raiding Red Carib communities for resources and to steal wives. Endemic conflict between Black Carib and Red Carib groups led the latter to ask the French for help, who then arbitrated the conflict and divided the island between the two groups. The Red Carib were allotted the western portion of the island and the Black Carib received the eastern portion. Faced with continued attacks by Black Carib, Red Carib invited French settlers to immigrate to their

territories on St. Vincent, hoping that their presence would bolster their defenses. Ironically, Black Carib raids on Red Carib settlements helped to open the door to European colonization.

In 1748, the French gained the upper hand in the Caribbean and forced Britain to give up its claim to St. Vincent. The French were able to extend control over the Windward Islands and, in violation of their previous 1660 treaty with the Carib, declared Dominica and St. Vincent neutral. After the Carib strongholds were no longer imbued with protected status, French settlers flocked to the two islands. By 1763, the French had created major sugar plantations on St. Vincent with 1,300 white settlers and 3,400 African slaves (Young 1993). Nearly all of the French plantations were in the eastern (Red Carib) portion of St. Vincent and did not significantly encroach upon Black Carib lands. Nonetheless, Black Carib on St. Vincent resisted the increasing presence of European settlers by providing a safe haven for escaped slaves. The French strategy toward the Black Carib was to use increased cultural contact and trade as a way to decrease the potential for conflict.

French fortunes came to an end in 1763 when they were forced to cede vast amounts of land in the New World to England, including the island of St. Vincent (Gonzalez 1988). British colonists soon arrived on St. Vincent and began to expand the sugar plantation complex. French settlers were allowed to remain on the island, so long as they pledged allegiance to the British crown. Because the treaty that divided St. Vincent into Red and Black Carib sectors had been drafted by the French authorities in Martinique, the new English governor did not recognize its validity. As a result, the British viewed a sizeable portion of Black Carib lands to be open for settlement. Overall,

British methods of dealing with Black Carib on St. Vincent were quite different from methods used by the French. Rather than trying to increase their influence through trade as the French had done, the British were more confrontational. They sought to minimize Carib control of St. Vincent in order to expand their plantation complex. Although the French-brokered agreement had given Black Carib control of the entire eastern portion of the island, the British quickly restricted them to the northeastern quadrant and usurped lands in the southeast. Still though, British settlers resented the fact that Black Carib controlled the northeastern sector of St. Vincent, which they believed was the most fertile area of the most fertile volcanic island in the Antilles (Shephard 1971).

Expansion of sugar plantations on St. Vincent caused significant ecological change in the form of deforestation and reduction in soil fertility. With the influx of British settlers came livestock animals, such as cattle, which were permitted to roam free and browse the forest vegetation. Sometimes domestic animals roamed into Black Carib territory and grazed on their farms. To defend their livelihood, Black Carib occasionally killed roaming cattle, fueling tensions with the British colonists. Much of Black Carib territory was forested because they used the areas for hunting and shifting cultivation. British settlers, however, believed that forested areas were going to waste and should be cleared and planted. Due to this crucial difference in how they viewed the island's resources, Black Carib and British settlers seemed destined to come into conflict. Deforestation of the island, encroachment of sugar plantations into their territory, and destruction of subsistence crops by nuisance cattle led the Black Carib to resent British occupation of St. Vincent and eventually culminated in the First Carib War, 1769-1773 (Young 1971).

The Black Carib insurrection was aided, and perhaps prompted, by French influence who sought to regain their hold on the valuable sugar island. After Black Carib groups were defeated by the British in 1773, they were subjected to an unequal peace treaty which greatly restricted their economic, political, and social freedom. It has been suggested that the cause of the Black Carib rebellion was that they had transgressed the carrying capacity of St. Vincent and needed subsistence resources (Young 1993:25, Gullick 1985: 81). This argument has merit, but it does not consider that landscape change initiated by the encroachment of English settlers could have reduced the Black Carib's ability to procure subsistence. As one of my ethnographic informants related, one interesting strategy employed by Black Carib in order to cope with the encroachment of British cattle was to "plant underground" and rely upon tuber crops, such as cassava (manioc) and yucca. Although Black Carib had already used tuber crops, Garifuna oral history justified their use as an adaptation to changing environmental circumstances.

British colonial endeavors in the Caribbean suffered a setback during the American Revolution (1775 – 1783). The French managed to capture most of the British Lesser Antilles, including St. Vincent in 1779 and kept control for four years until the islands were restored to Britain in1783. Black Carib warriors played a vital role in the capture of St. Vincent and while the island was under control of their French allies, Black Carib groups felt that they had a free hand to terrorize English colonists, partially in retribution for the unequal and oppressive treaty they had been obligated to sign only a few years before. Although Black Carib activities during French occupation were clearly responses to previous grievances against the British, they only served to fuel resentment between settlers and indigenous peoples. After the war was over, Carib and British

experienced a tenuous peace. Opinion about the "Carib question" was divided among the colonists: some felt that Black Carib were the "original and rightful possessors of the island of St. Vincent" (Young 1971: 1), while others felt that Carib had no rights except those granted by the Crown.

Competition between Britain and France in the Caribbean remained calm until French revolutionary forces began to instigate conflict in the 1790s and once again the Black Carib became caught in the middle. Quickly after the French Revolution began, revolutionary ideals such as human equality and the abolition of slavery spread to francophone colonies (Stinchcombe 1995). All over the French Caribbean, slaves were incited to revolt against their oppressive overlords. Although the French were no longer in control of St. Vincent, they maintained strong ties to Black Carib groups living on the island (Shephard 1971) and attempted to persuade the Black Carib chief Chatoyer (see Figure 2.4) to attack the British colonists (Young 1971). Apparently, the Black Carib did not need much persuading and so the Second Carib War (also called the Brigand's War) broke out in 1795.

Black Carib raided St. Vincent's primary settlement at Kingstown in 1796, but before they could enjoy their victory they were beset by a stroke of bad luck. In March 1796, the Black Carib leader Chatoyer was killed in combat (Shephard 1971). Left without political and military leadership, Black Carib resistance began to crumble. Aided by their French allies, the Black Carib forces fought several skirmishes with British troops, holding them at bay for over a year. In many cases, Black Carib warriors disguised themselves in women's clothing to stealthily approach enemy soldiers (see

Figure 2.5). Eventually, the British sent nearly 4,000 troops from Jamaica to reinforce St. Vincent and overpowered the Black Carib on June 8, 1797.

Figure 2.4 Garifuna hero Chatoyer (Satuye) commemorated in a statue in Punta Gorda, Roatan

In the aftermath of the Brigand's War, British animosity toward the Black Carib remained high. The combination of French induced unrest, the Black Carib's history of resistance, and the potential profitability of St. Vincent's sugar industry led the colonists to declare: "That the British planters, or the Black Charaibs [sic], must be removed from off the island of St. Vincent's" (Young 1971: 125). Held in surrender on the nearby islands of Bequia and Balliceaux, the remaining Black Carib were offered a choice of exile or execution. Needless to say, most chose the first option and in late 1797, the wishes of the St. Vincentian planters were fulfilled when Black Carib were deported to Roatan Island in the Bay of Honduras (Gonzalez 1988, Shephard 1971). According to

British records, approximately 5,000 Black Carib were ultimately deported to the Western Caribbean island of Roatan.

Figure 2.5 Young Garifuna men in traditional garb, cross-dressing to demonstrate how they stealthily attacked British soldiers during the Carib Wars on St. Vincent

Summary

This chapter has discussed two major themes in the early history of the Caribbean: the story of dynamic interactions between various political economic actors bent on control of the Caribbean and the processes of marginalization that affected indigenous groups living in the Caribbean. These two themes are interrelated; both had causal and consequential effects on the other. On one hand, competition between European states for colonial possessions in the Caribbean had negative impacts on local populations who were caught in the middle and led to processes of marginalization that

reduced their demographic base, their political and economic influence, and destroyed the fabric of their culture and society. On the other hand, processes of marginalization and, in many cases, complete annihilation of indigenous societies, left the field open for increased competition between European actors. Out of this confusion, from two cultures that were in the midst of being marginalized, there developed a single unified culture that was able to resist further marginalization or annihilation.

Shortly after its discovery by Europeans, the populations of the Caribbean were devastated by disease, genocide, and slavery. Those groups who survived were misrepresented to the world, so early European explorers feared attack by Cannibal Caribs. Although Arawak were virtually annihilated within the first century of European contact, Island Carib remained an important factor in the politics of the Lesser Antilles until the mid-eighteenth century. As momentum for mercantile agricultural colonies grew, indigenous groups living in the Caribbean were marginalized by European states that were intent upon creating trans-Atlantic empires. Island Carib resistance to European colonization on St. Vincent was strengthened by intermarriage with another group of marginalized people, African slaves.

The process of landscape change initiated by the British – via deforestation for the clearing of agricultural land and the introduction of destructive grazing animals – interfered with Black Carib subsistence on St. Vincent. Tensions grew throughout the late 1700s, with British planters calling for the removal of the Carib. Encouraged by French political and economic contacts, conflict erupted between the British and the Carib. Used as a pawn by one great power against another, the Black Carib became caught up in local actions of global conflict between two of the world's great powers.

Ultimately, the creation of sugar plantations in the Lesser Antilles necessitated the removal of the Black Carib from St. Vincent because resource use strategies of Europeans conflicted with (and impaired) resource use strategies of the Black Carib. Transformation of the ecological and cultural landscape in St. Vincent eventually led the Black Carib to armed rebellion which only resulted in their deportation to Roatan Island in the western Caribbean.

Without the context of regional and global political economy, the experience of the Black Carib appears to be a simple case study of European colonialism. When placed in the context of larger systems, however, it is seen that Carib were able to resist European encroachment until landscape transformation changed the structure of their resource base. They were able to resist Spanish intrusion because Spain's early colonial policy did not emphasize agriculture and thus ignored the smaller, mineral poor islands of the Lesser Antilles. Black Carib on St. Vincent were able to resist marginalization because they adopted strengths from two different societies. From Africans came numbers to replenish the disease wracked Island Carib populations and through intermarriage, their children acquired better immunity to illness. From Island Carib came important cultural traditions, a unifying language, and a historical claim to the land. Rather than becoming marginalized like their indigenous Caribbean relatives, the Black Carib developed resiliency to those processes and were able to survive and flourish, at least temporarily.

In the end, Black Carib were affected by processes of marginalization. Black Carib resistance to colonial pressures led them into a conflict they were unable to win. They were used by the French in an attempt to weaken England's colony in St. Vincent.

In the aftermath, Black Carib lost their homeland in St. Vincent to British planters. The British Navy deported them thousands of miles away to Roatan Island, off the coast of Central America. But the Black Carib did not fare so badly. Their unique culture survived (only not where it began) and their people were deposited in an area of the world that was a sparsely populated, open frontier, thus giving them the opportunity to expand once again.

CHAPTER THREE

THE RESEARCH SITE:
CULTURAL ECOLOGY OF THE BAY ISLANDS

This is a plentiful island abounding with wild hogs, deer, Indian conies, wild fowl, quantities of turtle, and fine fish, etc. Its soil in the valleys is rich and fertile, and will produce anything in common with the rest of the West Indies…This island is very well situated for trade with both the Spaniards at Guatemala and the bay of Honduras. It is likewise very healthy, the inhabitants hereabouts generally living to a great age.
– Thomas Jefferys, Geographer to the King of England 1762 (Cited in Davidson 1979)

The Bay Islands of Honduras or *Las Islas de la Bahia*, as they are called by their Spanish speaking residents, are located at the intersection of Central America and the Caribbean not only in a geographical and geological sense, but also culturally and historically (See Figure 4.1).

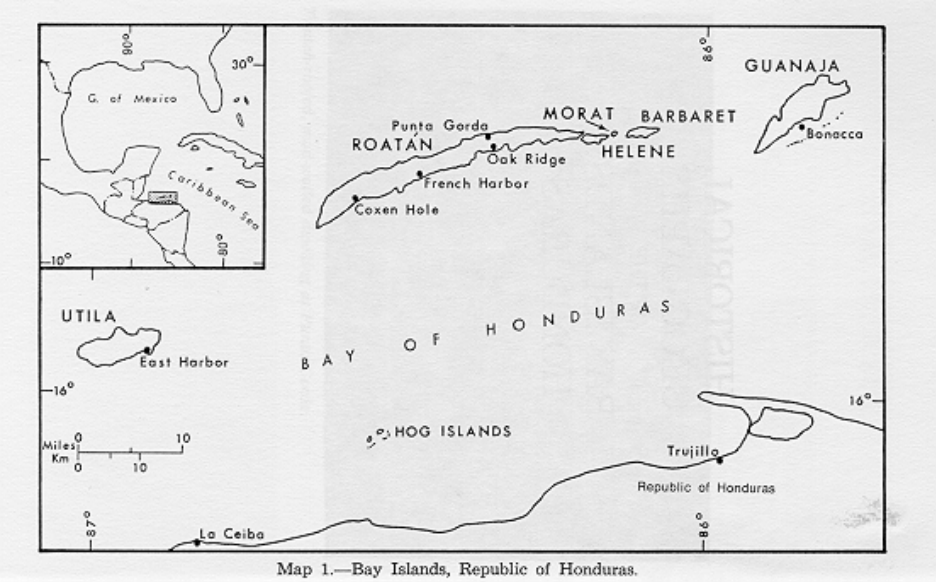

Figure 3.1 The Bay Islands of Honduras (source: Davidson 1979)

Constituting the eighteenth *Departamento* (Department or administrative district) of Honduras, the Bay Islands have a unique cultural history that is a mixture of English-speaking influence from other western Caribbean nations, such as the Cayman Islands, Spanish-speaking influence from mainland Central America, and indigenous flavor from the Garifuna living in Punta Gorda. This chapter aims to describe the cultural and ecological setting of the Bay Islands, Honduras to provide a framework to discuss marginality and poverty of Garifuna fishers in Punta Gorda. In order to facilitate this discussion, it is necessary to first contextualize the Bay Islands in terms of their geological origins, environmental characteristics, physical and political geography, political economy, cultural/ethnic diversity, and the recent history of the Garifuna. It is important to provide this information because according to the theoretical tenets of cultural ecology, the characteristics outlined above are extremely influential factors in conditioning cultural systems to be what they are today.

Environmental and Geological Characteristics of the Bay Islands

The Caribbean Sea is made up of three large basins – the Yucatan, Colombian, and Venezuelan – and is bounded by islands or continental formations on all sides. Inside this geological area, sea surface temperatures are characteristically warmer and typically calmer than the Atlantic Ocean. Forming the western border of the Caribbean, Central America is one of the world's most mountainous areas, a testament to the relatively recent geological origins of the region. Less than one hundred million years ago, North and South America were separated by a shallow sea, but through the process

of continental drift, the landmass of Central America was gradually interposed between the two continents to form a land bridge. As the Caribbean plate – which actually formed in what is now the Pacific Ocean – slowly moved to the west-northwest, it dragged the Central American isthmus into place.

Bounded on the north by the Greater Antilles, to the east by the Windward and Leeward Islands, to the south by the South American continental plate, and to the west by the Central America landmass and the Cocos plate; the Caribbean plate is composed of unusually thick oceanic crust, which allows it to remain "floating" on top of other tectonic plates. Interaction between the Caribbean plate and neighboring plates (i.e. processes of subduction) create a region of frequent volcanic and seismic activity. Although there are no active volcanoes in Honduras, there are several active volcanoes in neighboring countries. Underneath the Pacific Ocean, near Guatemala, lies the intersection of three major tectonic plates, putting the area at high risk for seismic activity. Honduras has not recently experienced any devastating earthquakes, but many geologists suspect that the region is overdue for a major tremor. The northern border of the Caribbean plate, where it slides past the North American plate is not volcanically active, but does sometimes create powerful earthquakes. Earthquake-triggered tsunamis have been known to occur in the western Caribbean; for example, Port Royal, Jamaica was literally sunk after an earthquake and its resulting tidal wave hit there in 1692. Minor quakes are sometimes experienced on Roatan, such as a 4.6 magnitude temblor which hit 134 kilometers north of the island on January 4, 2004 (Brown 2004).

Located 20 to 45 miles north of the Caribbean coast of Honduras, the Bay Islands are the above-water, exposed portions of the Bonacca Ridge – a discontinuous extension

of the Sierra de Omoa mountain range found on mainland Honduras (Davidson 1979). The Bonacca Ridge represents the last significant mountain chain before the Bartlett Trough, which runs east-northeast into the profoundly deep Cayman Trench. Although the Bonacca formation is labeled a ridge, it does not form a continuous unbroken backbone along the islands; instead, ridges on the Islands are oriented in a south-southwest to north-northeast direction, similar to the orientation of geological formations in mainland Honduras. Given the profundity of the waters around the Bay Islands, one could consider that they lie on the extreme edge of the tiny Caribbean plate. In fact, the deepness of the water in the Bay of Honduras gave name to the adjacent country; Honduras comes from the Spanish word *hondo* meaning deep. Deepness of waters adjacent to the Bay Islands tends to restrict ecologically active zones to the area immediately around the Islands, thus limiting available fishing zones.

The total land area of the Bay Islands is slightly less than ninety-two square miles spread across eight large islands and sixty-two smaller islands and cays. From closest to furthest from Honduras' North Coast, the Bay Islands include, Big Hog and Little Hog of the Cayos Cochinos, Utila, Roatan, Helene, Morat, Barbaretta, and Guanaja. The largest island is Roatan (49 square miles), followed by Guanaja and Utila. According to Davidson (1979), the larger islands are differentiated from cays in that the large islands are rocky and continental in their structure and formation, while the smaller cays are much sandier and consist of ancient coral rock that was exposed after sea levels dropped.

The topography of the Bay Islands tends to increase in elevation from west to east. Thus, the western-most island of Utila is relatively flat with its highest hill rising 243 feet at the eastern end of the island. In general, the western end of Roatan has less

differentiated terrain than the mountainous eastern end, but the entire island can be characterized as having extremely steep hills which are divided by deep valleys drained by intermittent streams. The two highest peaks on Roatan are situated at either end of the island; the eastern rising to 764 feet and the western to 770 feet. Guanaja, at the eastern end of the island chain, consists of two relatively high hills connected by a swampy mangrove area. Characterized by extremely steep elevation change, the higher of the two hills on Guanaja rises to 1,361 feet. The dramatically steep terrain of the islands, interspersed with swampy bottomland, restricts large-scale development to off-shore cays, the narrow coastal plains, and flat hilltop areas. Because agriculture is limited to the same areas, growing populations and increasing development in the Bay Islands necessarily reduces the amount of land available for subsistence or cash crops.

The Bay Islands of Honduras are located south of the Tropic of Cancer between 16° N and 16.35° N, resulting in a tropical climate. Although, climate type and temperature are not uniform across the entire nation of Honduras, the Bay Islands and the North Coast of the mainland (the Caribbean coastal plain) remain extremely hot and humid for most of the year. Seasonal patterns also vary within throughout Honduras with the North Coast and the Bay Islands experiencing rainy "winters" from October through January. Winter in Honduras is characterized by mildly cooler temperatures, mainly induced by the increased cloud cover and precipitation. In the Bay Islands and North Coast, winter storms occur when Arctic air masses from Canada press to the south, pushing down temperatures into the upper 60° Fahrenheit range and bringing torrential downpours. When a *Norte* (a cold front from the north) arrives, the cooler air reacts

violently with warmer tropical air and can produce severe storms that have the potential to create significant coastal damage from wind and wave action.

Although only thirty miles separate the Bay Islands from mainland Honduras, the islands experience less rain and a more temperate climate thanks to prevailing trade winds that provide a refreshing breeze which averages over 20 miles per hour for most of the year. The Bay Islands average 85 inches of rain per year, with the greatest likelihood of precipitation during the months of October through January (Davidson 1979). From February until August the climate is likely to be dry, with thunderstorms increasing in the later months. There is more than sufficient rainfall to support agriculture in the Bay Islands, but availability of arable land is the major limiting factor. During September through December, the Bay Islands experience the threat of hurricanes and get hit by a major named storm about every ten years.

The most recent hurricane to severely damage the Bay Islands was Hurricane Mitch in October 1998 (See Figure 3.2). Honduras took a direct hit from Mitch and although there was limited loss of life in the Islands, the hurricane wreaked havoc on the mainland of Central America. Perhaps one of the most powerful and destructive storms in recent history, Mitch was listed as a Category Five (150+ mph sustained winds) on the Saffer-Simpson scale. The storm had been forecasted on a track toward Belize, but a cold front sweeping down from the north caused Mitch to unexpectedly turn south. Large waves from the hurricane's storm surge destroyed structures in practically every community located on the northern side of the Bay Islands and, as the eye passed directly over Guanaja, hurricane force winds denuded that island of nearly every tree. Local accounts of the storm from Punta Gorda, Roatan describe how three successive "tidal

waves", each larger than the previous one, crashed ashore sweeping away houses and breaking down stout concrete buildings as if they were made from matchsticks.

Figure 3.2 Path of Hurricane Mitch in Central America (source: NOAA)

During my ethnographic interviews with fishers in Punta Gorda, the subject of Hurricane Mitch came up often. Evidently the storm remains very salient in the memory of the people there. One man described his experience:

> The [Hurricane] Mitch started to come around evening [near sunset], we heard the radio tell us to get up to high ground. I went to my mother's house up there. [about twenty-five feet up the hill and away from the beach.] There we wait out the storm. We put ropes over the roof and tied them to rocks to keep the roof [from blowing off]. The light went out soon and stayed out until about two weeks after the Mitch had passed. We stay in the house for three days while the storm was overhead and we was praying the entire time. I looked out once to see what was happening, but I could not see much…it was all dark. Three big waves came in the Mitch, each bigger than the last. They knocked down all them houses along the beach. After the Mitch, trees and pieces of houses were everywhere and the people were lawless. Not these Garifuna people from Punta Gorda now, just some of those [Mestizo] people from Barrio Lempira. One day after the Mitch, we had some clothes on the line [drying] and one [Mestizo] came up and started to take the clothes. I got my spear gun, pulled the rubber so it was ready [to fire] and went around behind him. When I called him, he turned and saw my spear, then he drop the clothes and ran.

Another time I heard about Hurricane Mitch was in 1999 while I was conducting preliminary field investigations. I had embarked upon an overnight fishing trip with one of my primary informants and several other Garifuna fishermen. We had taken a skiff with an outboard motor to Fishermen's Cay, about a two hour trip by boat. After fishing successfully the first day, we camped out and got rained on all night. The next morning, the sky was ominously dark and the seas were getting rough. The other fishermen began to say, "This is how the Mitch started" and we all began to think about the coming storm. It did not take us long to develop a consensus that it was better to not remain on a low-lying cay because of the danger of storm surge. So our fishing trip was cut short, because memories of Mitch still lingered.

After Hurricane Mitch ravaged the Bay Islands, it continued southward toward the mainland of Honduras. When the storm ran into the mountains of Central America, the high elevations caused it to drop torrents of rain that destabilized the soil, leading to flooding and mudslides. The true cost of life may never be known, but official estimates place the Central American death toll at over ten thousand. In addition, destruction of property and transportation and utility infrastructure in Honduras caused the country to be "put back fifty years" in development. The storm destroyed millions of dollars worth of agricultural crops such as banana and pineapple in the hardest hit North Coast areas. Hurricane Mitch continued its erratic track west across Guatemala and Chiapas where its fury was weakened by high mountains. Eventually it turned north, and re-emerged in the Gulf of Mexico where it gained enough strength to revert to Tropical Storm status. Other recent hurricanes have had economic effects on the Bay Islands; as Wilma passed through the area in 2005, it destroyed large sections of reef and essential fish habitat in

the Honduran fishing banks, thus negatively affecting the fishery on which the Islands depend.

The Bay Islands support a rich variety of flora and fauna, although many native species are endangered or have already been driven to extinction. Historically, the island had large stands of tall oaks and pines; however, deforestation has taken its toll. Much of the Islands' native forest has been replaced by introduced species such as the Cohune nut palm. The Islands have historically been home to many species of birds, including three types of parrots, but many have been hunted or captured for sale as pets. Two terrestrial species have significance for local islanders: Green Iguana and Agouti, locally called Watusa or Island Rabbits. Both species are hunted for their meat and, in the case of iguana, for their eggs during mating season. Iguanas are currently endangered because of hunting, but there are some protection efforts being made. One local Roatan man, living in the community of French Cay, keeps an "Iguana Farm" where iguana hunting is prohibited. One reason that iguana hunting is so popular is that it can provide a free source of meat for impoverished residents who have few other places to obtain protein. There are many other species that were historically seen around the island in abundance such as deer, manatees, and caimans, but they are now rare or completely absent.

Perhaps the most striking environmental characteristic of the Bay Islands are their expansive system of coral reefs. Large reef networks are found on all the islands, with the most extensive found on Roatan and Utila. As the least topographically varied of the Bay Islands, Utila has less variation in the depth of its submerged littoral zone. There, extensive shallows provide substantial habitat for coral reef ecosystems to develop. The submerged littoral zone of Roatan typically ranges between fifty and three hundred yards

from the coast. On Roatan's northern side, a barrier reef extends the entire length of the island. There are several small channels in the reef, but only small surface vessels are capable of navigating these tight access points. On the southern shores of Roatan, small sections of coral reef are broken up by embayments or bights which provide shelter for deep draft ships. Although the barrier reef is close to shore, depth drops off rapidly outside the reef. In most parts of Roatan, depth drops from around thirty feet at the outer reef down to a sandy shelf about one hundred feet below the surface. Depth continues to rapidly increase – the 100 fathom line (600 feet) is located less than a mile from the island's coast. There is one popular dive site called "Hole in the Wall" where SCUBA divers are able to see the entire spectacular drop to hundreds of feet below without venturing very far from shore.

The coral reefs of the Bay Islands are vibrant ecosystems, teeming with life. Having been well-studied, the coral reef ecosystem is made up of five distinct habitat zones, distinguished by depth: the shoreline zone, near-shore, shallow reef, reef wall, and deep sea (Berthou et al. 2001). The shoreline zone varies around the island, usually consisting of either sandy beach, stands of mangrove, or rocky bluffs of ancient fossilized coral called "Iron Shores". Sandy beaches and mangroves both play essential roles as habitat for various marine fauna; beaches provide nesting areas for crustaceans and turtles (at least historically) and mangrove forests provide habitat for numerous species of birds and valuable nursery space for young marine vertebrates.

The near-shore zone ranges in depth from three to fifteen feet and consists of a sandy bottom or turtle grass cover. With the exception of a few benthic species such as flounder or skates, relatively little habitat is provided by sandy bottom areas. Extensive

turtle grass beds provide essential habitat for some reef fish and, more importantly, for shellfish such as Queen Conch (*Strombus Gigas).* Though all near-shore waters are fairly clear, areas covered with sea grass are much darker than sandy areas. As a result, it provides limited cover for small fish and an attractive hunting ground for predators such as barracuda.

As depth increases to between ten and thirty feet, the habitat zone shifts to shallow reef. In this area, shallow corals such as Elkhorn coral, Brain coral, and Sea Fans are able to exist. Shallow corals also provide haven for many different types of reef fish (i.e. Parrotfish, Yellowtail Snapper, Red Grouper, etc.) and marine crustaceans such as Spiny Lobster and King Crab. Progressing further from shore, just past the shallow corals, depth drops rapidly to between forty and eighty feet at the reef wall. In many cases, the reef wall drops to a sandy shelf before leading to a second reef wall in-between sixty to one hundred thirty feet deep. As depth drops along the reef wall, one may encounter hundreds of different marine species whose range is primarily determined by depth. The rapid change in pressure and available sunlight is the key limiting factor along the reef wall. Taking the opportunity to SCUBA dive along the reef wall, one will notice a rainbow of colors that constantly shifts as descent takes places; lower frequency wavelengths of sunlight (reds and yellows) are filtered out first, resulting in many vibrant hues of greens, blues, and purple at deep depths. The final habitat zone in the Bay Island's maritime ecosystem is deep sea. This area provides habitat for countless ocean-going sea creatures such as sharks, whales, turtles, and rays, which interact with the reef ecosystem, but use the depths as a refuge of safety.

The maritime population of the reef in the first four zones is diverse, but 11 species make up 70% of the total population of reef fish (Photos and briefs descriptions of each species are listed in Appendix One). These species are (listed in order of abundance, from most abundant to least): *Ocyurus chrysurus* (Yellowtail Snapper), *Lutjanus synagris* (Lane Snapper), *Haemulon plumieri* (Grunt), *Caranx ruber* (Bar Jack), *Epinephelus guttatus* (Red hind, Grouper), *Lutjanus analis* (Mutton Snapper), *Lutjanus apodus* (Schoolmaster Snapper), *Mycteroperca venenosa* (Yellowfin Grouper), *Epinephelus fulvus* (Rock Grouper), *Sparisoma viride* (Stoplight Parrotfish), and *Epinephelus striatus* (Nassau Grouper) (Berthou et al.. 2001: 70-98).

Deep sea fish are an important economic resource and are generally caught with hand lines. The major species that make up the deep-sea population are: *Lutjanus vivanus* (Silk Snapper) representing about 45% of deep sea fish, *Lutjanus buccanella* (Blackfin Snapper) which represents 31% of deep sea fish, and *Etelis oculatus* (Queen Snapper) which represents 11% of deep sea fish. Other important deep sea species include *Rhomboplites aurorubens* (Vermilion Snapper), *Pristipomoides macrophthalmus*, and *Apsilus dentatus*. (Berthou et al. 2001: 99). Major lobster species include *Panulirus argus* (Spiny Lobster) and *Panulirus guttatus* (Queen Lobster) (Berthou et al. 2001: 111-114). The primary conch species harvested for commercial purposes is Queen Conch (*Strombus Gigas).*

Cultural Setting of the Bay Islands

There has been insufficient archaeological research to give accurate dates of pre-Columbian settlement on the Bay Islands, but there is widespread evidence of occupation by a Native American group known as Paya. They were culturally related to the Maya who dominated the Yucatan peninsula and the Highlands of Central America. Because Paya had a reputation for providing shelter and supplies to English and Dutch pirates who frequented the Bay Islands during the seventeenth century, Spanish colonial authorities based in Trujillo, Honduras targeted them for elimination. Optimistically believing that removal of the Paya would deny pirates their source of supplies, the Spanish launched a massive round-up operation and subsequently deported large numbers of Paya to the *Rio Dulce* area near present-day Guatemala (Davidson 1979).

Because of its lack of significant mineral wealth, Spanish colonizers largely ignored the Bay Islands in favor of the mainland (Helms 1976). After indigenous peoples were eliminated and removed, the Bay Islands remained free of permanent settlement until 1797 when the Garifuna first arrived. For nearly two hundred years, the Islands were a haven for pirates who used coral reefs and hidden lagoons for protection, forests for replenishment of naval stores (i.e. trees used for ship masts), and high hills to get a commanding view of the surrounding seascape so they could spot and raid approaching Spanish treasure ships

Although English settlers repeatedly attempted to colonize the Bay Islands at various points in history, they consistently met with failure due to the islands' proximity to Spanish fortifications on mainland Central America from where raids were launched.

As a result, the Bay Islands remained largely devoid of permanent settlement until the nineteenth century. Despite repeated disappointments, the English continued to desire the islands because they viewed them as the "key" to the Bay of Honduras due to their advantageous position for trade and military endeavors. The English established other colonies in the area, on the Mosquito Coast, in the Cayman Islands, and in Belize (British Honduras) and the Bay Islands were strategically located in-between. Early attempts at colonization of the Bay Islands by the English in the seventeenth and eighteenth centuries were centered around Port Royal on the eastern end of Roatan. Port Royal offered a large harbor, protected by reef and a cay upon which a fort was built to guard the entrance (and appropriately named Fort Cay). However, poor fertility of soils and close proximity to insect infested areas of mangroves most likely discouraged repeat attempts at colonization of Port Royal in the nineteenth century.

The first group of people to permanently settle the Bay Islands were Garifuna. As discussed in Chapter Two, Garifuna were originally from the island of St. Vincent in the Lesser Antilles and were deported to Roatan by the British in 1797 after they lost the Second Carib or Brigand's War. Although approximately 5,000 Black Carib were deported from St. Vincent (Gonzalez 1988, Gullick 1985) historical records contain various population estimates, from 1,600 to 5,500 (Davidson 1984). When Spanish administrators in Trujillo heard that the British had deposited thousands of people on their territory, they feared a renewed attempt at colonization. The Spanish quickly dispatched representatives to the Garifuna and offered them safe passage and opportunities for employment on mainland Honduras.

In want of water, food, and other vital resources, most Garifuna accepted the Spanish invitation, but a small community remained on the island. The British had left provisions with the stranded Garifuna, but according to one interviewee, "the [Garifuna] people destroyed the supplies because they thought they were poisoned." Evidently, after all they had been through, the Garifuna placed little trust in the English. Garifuna deportees had been permitted to bring seed stock for important crops with them, such as cassava, corn, and sweet potatoes (Gonzalez 1988). Unfortunately, the Garifuna arrived in the wrong season for planting. The British initially stranded Garifuna in the harbor of Port Royal, but lack of water and poor soil in that location led the Garifuna who stayed on Roatan to soon move to the north side. At first, the remaining Garifuna on Roatan settled in the Camp Bay area (almost directly opposite from Port Royal), but lack of water there caused them to migrate further west. Finally, they settled in the area now known as Punta Gorda because it had good water, a good reef for fishing, and cohune palms nearby for housing material. Although Gonzalez (1988: 63) claims that all Garifuna left Roatan for the mainland in 1797 and that Punta Gorda was resettled later by mainland Garifuna, informants that I interviewed for oral history maintain that Punta Gorda was settled in the late 1790s and has been constantly inhabited for over two hundred years.

The Garifuna who moved to mainland Honduras, rapidly spread along the north coast of Honduras, Guatemala, southern Belize, and even into Nicaragua. Many men employed themselves as mercenaries for the Spanish on the North Coast of Honduras (Gonzalez 1988). Other men left in the early 1800s for Belize, to work as wood cutters. Because the Caribbean coast of Central America was a depopulated "frontier" between

English and Spanish domains, Garifuna were able to flourish in an unchallenged niche. Garifuna arrived in Central America as a marginalized people, forcibly removed from their homeland, but they were able to prosper in their new surroundings. Their history in mainland Central America has been fully covered elsewhere; in Honduras and Guatemala by Gonzalez (1988), in Belize by Taylor (1951), and in Nicaragua by Davidson (1980).

The first permanent English settlers began to occupy the Bay Islands in the early 1820s. Originating primarily from the Cayman Islands and from previous English settlements on the Mosquito Coast of Honduras and Nicaragua, English settlers founded various settlements on each of the Bay Islands, such as Coxen Hole, French Harbour, and Oak Ridge on Roatan. The British did not re-attempt to settle Port Royal, where previous colonies had failed, because of its poor soils and lack of water (Evans 1966). Instead, they divided their colonization effort to found the three towns mentioned above. British settlement in the Bay Islands left a legacy of English place names on the island, so that contemporary people, even if they speak Spanish, use the Anglo names. More importantly, British settlement left a strong linguistic tradition; English is still spoken as a first language by many portions of the local population and it is a second language for a large number of Bay Islanders. The descendents of these European populations call themselves Islanders, although that term is now used to refer to anyone from the Bay Islands in general. They are also called White Creoles or simply Creole and are some what disparagingly called *Caracol* (literally meaning shell), by Spanish speakers, perhaps in a reference to their fishing tradition.

Migration of English-speaking groups to the Bay Islands increased when the British Empire abolished slavery in the 1830s. Seeking land and a new life, many freed

slaves of African descent from Jamaica and the Cayman Islands followed their former masters to the Bay Islands. Population pressure and declining soil fertility in the Caymans provided further impetus for migration to the Bay Islands. These groups settled in communities that were ethnically segregated from other groups on the island, such as Sandy Bay, Crawfish Rock, Milton Bight, Pollitilly Bight, and Diamond Rock. People of African descent also settled near the larger towns inhabited by White Creoles, but they typically maintained distinct ethnic divisions between neighborhoods. For example, in Oak Ridge people of European descent occupied the nearby cays while people of African descent settled the shores of Roatan proper. These non-Garifuna Bay Islanders of African heritage are collectively referred to as Black Creoles or simply Creole, though many insist on calling themselves "English".

Beginning in the late nineteenth century and rapidly accelerating during the mid-twentieth century, immigrants from the mainland of Honduras have begun to demographically dominate the Bay Islands. Populations originating from the mainland are predominantly Mestizo; the product of intermarriage between Spanish colonists and Honduran indigenous groups. The first Mestizo communities on Roatan, Juticalpa and Corozal, were settled in the 1800s. More recently thousands of Mestizo migrants have arrived to the Bay Islands in search of work in the fishing and tourism industries, contributing to the growth of communities such as Barrio Los Fuertes. Mestizo migrants have also settled in or near several of the major towns such as Sandy Bay, Coxen Hole, French Harbour, and Oak Ridge. In keeping with traditional practices of ethnic segregation on the Roatan, Mestizo communities are often separated from Black and White Creole neighborhoods. Rapid influx of Mestizo groups into Roatan's population;

combined with governmental mandates to teach in Spanish (rather than in English as was traditional in the Bay Islands) has led to Spanish being more widely spoken than English on the island.

Settlers of European heritage maintain substantial political, economic, and social power in the Bay Islands. From the outset, European settlers were not only interested in land and survival at a subsistence level; they were also interested in developing trade linkages with outside communities. As a result, people of European descent had significant control of the local economy from an early date. White Creoles have used their power to exploit other groups, such as the Garifuna and Black Creoles (Evans 1966). For example, after the fishing industry began to develop, fishing vessels that were usually owned by White Creoles employed people of African descent for barely livable wages. In many cases, White Creoles were able to use their economic positions to purchase large tracts of land across the islands. White Creoles expanded their base of power in the 1970s and 1980s by allowing Mestizo migrants from mainland Honduras to squat on their land. In exchange for this acquiescence to let them settle on land, Hispanics were expected to vote White Creoles into local political offices.

Despite gradual immigration and domestic population growth, Roatan's population stayed below 5,000 until the mid-twentieth century with Punta Gorda accounting for around 10% of people (see Figure 3.3). In 1935, 6,490 inhabitants resided in the Bay Islands: 4,003 in Roatan, 1,431 in Guanaja and 1,056 in Utila. In 1988, the estimated population of the Bay Islands was 23,850 inhabitants; with 15,720 on Roatan, 5,950 on Guanaja, and 2,187 on Utila (Raudales 1992 in Wiefels et al. 2000). In 1999, a sub-program of PMAIB which had the primary goal of completing a cadastral survey of

the Bay Islands estimated total population at 64,877, with 40,840 in the Municipalidad of Roatan, 10,607 in the Municipalidad of José Santos Guardiola, 9,501 on Guanaja, and 3,965 on Utila (PMAIB 1999).

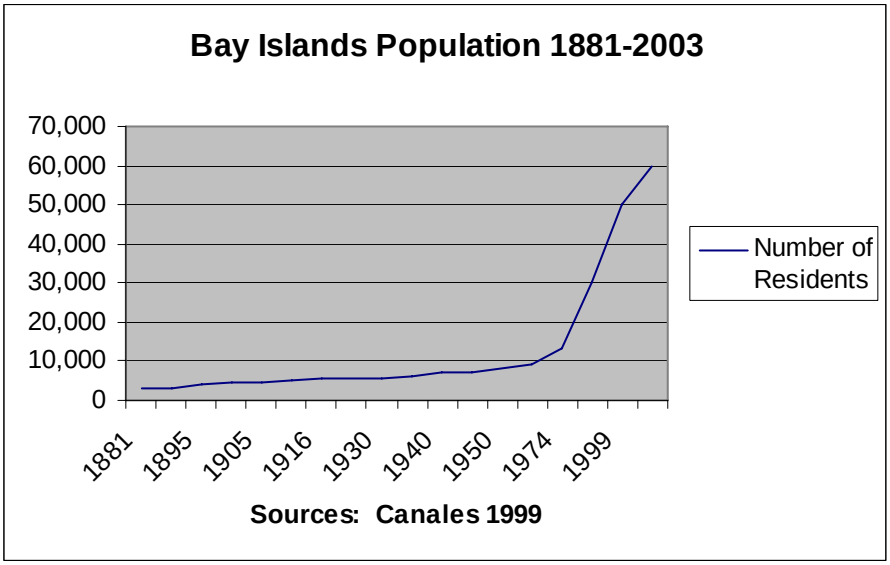

Figure 3.3 Bay Islands Population 1881-2003

After Honduras revised its laws concerning foreign ownership of property in 1995, increasing numbers of expatriates from North America and Europe have migrated to the Bay Islands. Before property laws were modified, foreign individuals could only "own" land or businesses if they had a local Honduran partner. Small expatriate communities have existed on the Bay Islands since the 1960s, but they remained largely concentrated. On Roatan, most expatriates lived near West End. Currently, the number of foreigners living on Roatan is estimated at 2,000 (PMAIB 1999). Expatriates are no longer concentrated in West End, although that area certainly has the highest density of expatriates; they have spread throughout the island. The population of the Bay Islands continues to grow rapidly and shows no signs of leveling off in the near future; making

many residents worry about whether the Bay Islands will be able to grow sustainably. Of great concern to many people is whether there will be room for them to live on an increasingly crowded island. These issues are directly related to the carrying capacity of the Bay Islands. In Roatan, there is a limited amount land available that is suitable for development and a limited amount of water that can be extracted from the local aquifer.

The contemporary cultural setting of the Bay Islands is a diverse mixture of many different ethnic groups, each of which has its unique history and way of life. Cultural groups on Roatan, include Garifuna, White Creoles (descendants of English settlers), Black Creoles (descendants of freed slaves), Mestizo, Miskito, other Indian groups from Honduras, and North American and European immigrants. Relationships between these groups are politically, economically, and socially complex. Historically, White Creoles have held the economic and political power in the Bay Islands. Black Creoles have often had employment from White Creoles, though many maintained a largely independent subsistence lifestyle. Garifuna have occupied a similar status, however there is resentment and discrimination between Garifuna and Creole. Spanish-speaking Mestizo and other mainland cultures are typically employed by the white middle class and are resented by many black islanders (including both Garifuna and Black Creole). One Garifuna man related his antipathy toward Mestizo immigrants:

> …we not prepared for [it, the immigration of Mestizos]. And its effect because there are many immigrants from the mainland came to the island and they [the island businesses] are hiring the immigrants instead hiring island people. And that is really big effect to the Garifuna community.

Another man described how the influx of immigrants has lowered wages, thus contributing to poverty in Punta Gorda, keeping them in a marginal economic position, and motivating their natural resource use practices:

> [It is about]…the life and the situation…where we stand…we used working here before different people, like the Spanish people come get a job, maybe for paying 75 Lempira. For 75 Lempira, you buy two pounds of chicken and that's gone and there's nothing later to buy rice. So we can't work for that. After we start learning to dive for the spear people we know how to make more money, maybe we work for three, four, five hours. Sometimes a day we make for five days what we used to [make] up there. And what we makes for we self we don't have to share with nobody, just feed your family….

International immigrants to the Bay Islands are quickly gaining political, economic, and social influence. U.S. citizens who have relocated to the Bay Islands are aided by their political connections to the U.S. embassy, which has substantial clout in Honduran domestic policy. International immigrants often bring significant economic resources with them when they come to the Bay Islands, giving them more influence in local policy.

Political Geography of the Bay Islands

The Bay Islands are subdivided into four *alcaldia* (local district governed by a mayor): Guanaja and Utila each make up their own *alcalde* and the island of Roatan is divided into two; Roatan and Santos Jose Guardiola. To avoid confusion between Roatan Island and Roatan *Municipalidad* (alcalde), "Roatan" will refer to the island as a whole unless otherwise noted. Located on the western half of the island, Roatan Municipalidad has the highest population and population density in the Bay Islands. Its principal town,

Coxen Hole, is the seat of both government for both the municipal and the entire Department. Some of the largest communities on the island are found in the Municipalidad of Roatan, such as, Coxen Hole, French Harbour, Barrio Los Fuertes, and Sandy Bay/West End. Additionally, most of the Island's booming tourism and resort industry is focused around the western end of the Municipalidad of Roatan. The Municipalidad of Jose Santos Guardiola makes up the eastern half of Roatan and also has jurisdiction over the smaller islands of Helene, Morat, and Barbaretta. Its center of government is located in the town of Oak Ridge – the most populated and developed town in Jose Santos Guardiola. Other significant communities in Jose Santos Guardiola include Punta Gorda, Pollitilly Bight, Jonesville and Diamond Rock. In general, the eastern half of the island is significantly less populated and less developed than the western half.

Across the entire island of Roatan, the majority of residents live on the south side of the island. Offering easy access to deep draft harbors and sheltered from winter storms blowing from the north, the southern coast of Roatan has been a preferred settlement site since the 1600s even though no permanent settlements were founded there until the mid nineteenth century. There are several notable exceptions to this settlement pattern: numerous communities have developed on the north side of the island, with Sandy Bay/West End and the Garifuna community of Punta Gorda being among the largest. In addition, there are two major communities in the interior of the island with no easy access to the sea: Juticalpa and Corozal. Punta Gorda is spread along the seaside in front of several large hills; the largest of which projects into the sea like a "fat point", making it

visible from miles away and giving the community its name. The coastline in front of the Punta Gorda is protected by a barrier reef about two to three hundred yards offshore.

As development in the western end of Roatan continues, many important businesses and services are pulling out of Jose Santos Guardiola and relocating westward, leading to economic decline in the eastern end of the island. With its reduced economic influence, eastern Roatan also suffers reduced political sway, making it difficult to attract new businesses to replace those that have left. Corruption in the government of Jose Santos Guardiola also contributes to inefficient governance and makes the municipalidad less attractive for investment. Eastern Roatan is in the midst of a cycle of decline, which leads to further poverty and hardship in its communities because they have reduced access to political, economic, and social opportunities. In part, because of their location in depressed, impoverished eastern Roatan, Garifuna living in Punta Gorda find it difficult to access the range of opportunities that result from growth on the island.

Because eastern Roatan has been bypassed by much of the development and economic growth taking place in western Roatan, residents there find themselves in an increasingly marginal position. When citizens of Jose Santos Guardiola need banking services, a hospital, or a large grocery store, they must travel to the other end of the island. Similarly, when residents seek gainful employment, they often have to work in western Roatan. Travel from Jose Santos Guardiola to western Roatan can present difficulties, especially when people do not own a vehicle. Taxis are costly to use on a regular basis and bus service is sporadic at best. On days when cruise ships arrive to Roatan, residents of Jose Santos Guardiola are lucky if they see one bus all day long

because all the buses and bus drivers are attending to tourists. One Garifuna fisherman summed up the problems living and finding work in the eastern end of Roatan:

> …[in Punta Gorda we need] a little work. Like a place like this up on the hill [the abandoned resort Henry's Cove]. See this tourist place…a lot of people work for them place, but none of that is around here like that. But around other places like West End, down them area there, the people is working in tourist business. But here in Punta Gorda there's no tourist business. There's other things to do [rather than] to find a job. There's no way how to find a job here in Punta Gorda, no…only if they try to build a house and you get a little job there, but there's nothing here to work on in Punta Gorda. If I get a little job come in, people have to leave it too and work, but there's nothing here to work in Punta Gorda. If you want work and you from Punta Gorda, you got to look work somewhere else cause there's nothing to do in Punta Gorda…nothing. There's not no work here and that's why too, a lot of people dives and fishing…cause there's no work here. Maybe in time to come, a little work come in people might be allowed to leave it, leave fishing, diving…

Bay Islands Economy

The Bay Islands' economy is based on commercial fishing, tourism, and shipping. Commercial fishing and tourism have only been important economic factors since the 1960s; prior to then, the Islands were major agricultural producers. In the years between 1910 and 1930, Roatan experienced a banana boom, with the majority of Island residents growing "Green Gold". Roatan's central place in the banana industry is evidenced by the fact that a variety of the fruit was called the "Roatan Banana". Unfortunately, the inherent difficulties of farming on an island with steep, easily eroded hills led Roatan's industry to be out-competed by farmers on the mainland of Central America. The Roatan banana fell out of cultivation and eventually had to be reintroduced to the Bay Islands from Mexico (Evans, personal communication).

As banana cultivation declined, Islanders began to look for their next valuable commodity to trade. They began to export coconuts to the United States in the 1960s. Although coconuts only generated a few cents per nut, the shear volume of coconuts traded allowed a few Islanders to make a decent living and become wealthy. Jamaican "Green" Coconuts were preferred for trade and for making oil because of their sweeter taste. In recent times, a fungus based disease called Lethal Yellowing has severely affected the Jamaican Coconut leading to massive die-offs. Only a few Jamaican Coconuts are left on the Bay Islands. Local residents have planted Philippine "Yellow" Coconuts to replace those that have died out, but many individuals disdain the Yellow variety as not as sweet in its meat and water.

Garifuna living in Punta Gorda participated in both of these agricultural enterprises. Their agricultural activities, however, were not the mainstay of their subsistence. Rather, agriculture was viewed as a way to bring in small amounts of supplemental income. One of the major limiting factors to Garifuna participation in Island agriculture in the past was Punta Gorda's isolation. Whereas the English-speaking communities on the south side of Roatan were linked by regular boat service, people from Punta Gorda – on the north side of the island – had to cross the island on foot or go all the way around one end or the other by boat. While the banana and coconut booms were still going strong on Roatan, there was no road connecting Punta Gorda to other parts of the island, thus hampering any attempts at trade. Though it is not far (about two miles) from Punta Gorda to the nearby English-speaking community of Oak Ridge, it is a difficult journey when burdened by agricultural products.

Since the 1960s and 1970s, commercial fishing has been the mainstay of the Island economy. Shrimpers from the Islands target the waters off the North Coast of Honduras and northeast of Mosquitia on the *Banco Gordo*. Lobster boats from the Islands usually use traps to catch their quarry; however Islanders have increasingly adopted methods of diving for lobster, as is commonly practiced on the Mosquito Coast. Island fishers have also targeted conch, but recent restrictions are hampering the effectiveness of this fishery. The fishing industry has reached its peak and is beginning to decline. But tourism is quickly becoming the most important industry on the island (Wiefels et al. 2000a:15). The Garifuna of Punta Gorda have been intimately involved with the Bay Islands' commercial fishing industry since its inception. Because of their experience in fishing and their knowledge of the sea, Garifuna have been sought out to work as laborers on commercial fishing vessels based out of the English-speaking communities on the south side of Roatan.

Traditionally, most of the shrimp production in Honduras originated in Caribbean capture fisheries, however shrimp farming or aquaculture is becoming increasingly important on the Pacific coast of Honduras (Stonich et al. 1997). Given that fuel prices have been rising around the world and that shrimp prices per pound have dropped due to increased global investment in aquaculture, capture shrimp fisheries are becoming less profitable. In this context, it is doubtful whether the Caribbean shrimp fisheries will be able to continue make ends meet in the future. The implications for Bay Islanders who depend on fishing, including but not limited to the Garifuna, are obvious. If shrimp fishing in the Caribbean stops being an economically viable industry, it could lead to a

veritable depression in the Bay Islands. Needless to say, such an event would seriously affect Punta Gorda where few opportunities other than fishing are available.

As a small island, Roatan lacks self-sufficiency, thus making it dependent upon shipping to bring in vital necessities. Many Islanders are involved with shipping, resulting in out-migration of males to work in the Honduran Navy, Merchant Marine, cargo shipping, and cruise line industries. Local shipping links the Islands with mainland Honduras ports such as Trujillo, La Ceiba, and Puerto Cortes, in addition to international ports in Miami, Tampa, New Orleans, Houston, and Panama.

The Bay Islands tourist industry started in earnest in the late 1960s, but has only recently become as important as fishing to the local economy. Initially, many tourist resorts catered to SCUBA divers, many of whom consider the Bay Islands one of the world's best dive sites. Off the western end of Roatan and near Utila is located a dive spot where tourists have a high likelihood of seeing the majestic beauty of a whale shark. Since the 1990s, the Roatan's tourist industry has taken off, with increasing numbers of cruise ships paying call to the island. At first limited to an occasional cruise ship visit, Roatan now receives at least five ships per week during prime Caribbean cruising season. Although day visits by cruise ships do not bring significant income to hotels and other well established resorts, they have resulted in the growth of taxis, tour operators, and souvenir vendors, all of which directly benefit local residents. A recent trend in tourism on the Islands is that it is increasingly being recognized as a destination for tourists from Central America. Residents from El Salvador and Guatemala, where economic growth has created more disposable income, enjoy experiencing the white sand beaches and crystal-clear blue and turquoise waters of the Caribbean. An additional aspect of Bay

Islands' tourism is the growth of eco-tourism initiatives. Typically small-scale, locally owned and operated ventures, eco-tourism provides opportunities for recreational fishing, snorkeling, and Island nature tours.

Economic Weakness in Honduras and its Implications for Roatan

Honduras is the original "Banana Republic"; large U.S. agricultural companies have dominated the landscape of Honduras since the late nineteenth century (Euraque 1996). Most of the coastal land on the Caribbean side of Honduras is still owned by U.S. corporations such as Dole and United Fruit. Fruit industries on the coast employ local Hondurans, including large numbers of coastal Garifuna, for low wages and under poor conditions, a practice which led to widespread protests among Garifuna banana workers in the 1950s. Because the major land owners are foreign based companies, many Hondurans have limited amounts of land available for their own agricultural activities. In fact, dominance of Honduras by foreign capital and corporations and lack of a landed middle class is one of the major reasons why Honduras has remained economically marginal and impoverished (Woodward 1999). Nearly all Honduran exports are agricultural or seafood products, with only limited amounts other products such as textiles. Forest products, such as mahogany, also generate economic revenue for Honduras, but widespread illegal logging is leading to increased conservation efforts. Of growing importance to the Honduran economy is tourism, which is viewed as the salvation for the local economy.

Honduras' reliance on the export of raw materials and import of manufactured goods creates an economic climate where the country consistently has a negative balance of trade. This has led to high rates of inflation and declining value of its currency, the Lempira (see Figure 3.4). Prior to 1989, currency exchange rates were "pegged" at four Lempira to the dollar, but President Callejas believed that it would benefit the country's economy if the Lempira was allowed to float freely. Unfortunately, the results of his economic reforms did not go as planed, the Lempira was quickly devalued leading to rapid inflation. The end result of inflation and currency devaluation was that many Hondurans effectively lost what little savings they had. Most affected by this process were the poor and the lower portions of the small middle class because they had limited ability to move their savings to more stable banks outside of the country. Thus, those parts of the population who were already at the economic margin were pushed further to the margin as their savings evaporated.

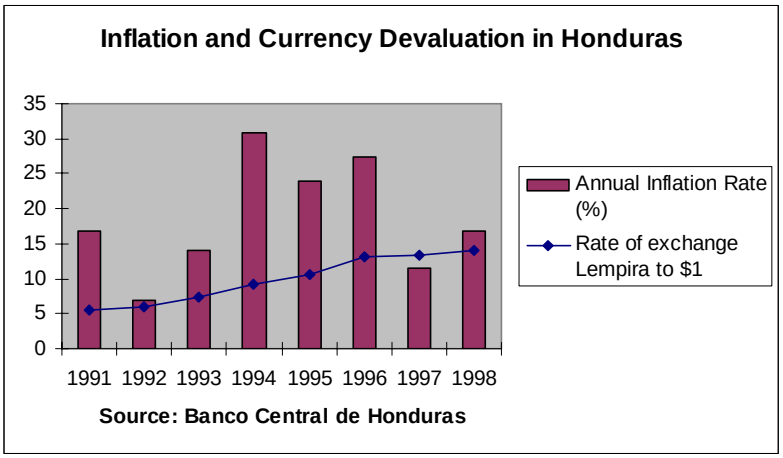

Figure 3.4 Inflation and Currency Devaluation in Honduras (1991-1998)

Though many of the Garifuna in Punta Gorda did not have savings accounts, because their marginal economic positions did give them the wherewithal to set aside

money, there were some individuals who did have some meager savings. In general, they had accumulated their savings by working outside of Honduras, usually in maritime industries, and had returned to Punta Gorda to retire. After economic reforms were instituted, their savings were erased and many of these retirees were yanked out of there moderately comfortable retirement and returned to an impoverished hand-to-mouth existence. One 85 year old Garifuna man that I talked to emphasized the negative effects that economic reforms had when he lamented, "that Callejas ruined Honduras…you used to [be able to] buy something with the Lempira, but not no more."

In general, Honduras has not moved beyond an agricultural economy and it is reflected in the nation's political and economic status. Their economic reliance on exporting large quantities of low value products, such as seafood, timber, and agricultural products does not provide sufficient revenue to support imports of high value manufactured products. Because Honduras has no high value product of its own, the Lempira remains weak and rates of inflation stay high. This causes Honduras to depend on international aid in the form of grants and loans, which the nation has great difficulty paying back. Recently Honduras became the recipient of debt forgiveness for "Heavily Indebted Poor Countries". As a whole, Honduras is politically and economically marginal, a fact which diminishes opportunities for its inhabitants, such as the Garifuna.

Effects of Development in the Bay Islands

As a result of increased population, the island experienced ecological change characterized by loss of habitat, pollution, and resource degradation. Loss of habitat

occurred due to increased modification of the landscape through construction and deforestation. Recently a popular, yet ill-advised, custom among Islanders is to burn off areas of forest and brush. Their justification is that it keeps the area "clean" and reduces the number of unwanted animals, but destroys wildlife habitat in the process. Deforestation on the island also degrades local resources such as ground water and coastal integrity. Forests provide a number of ecological functions, such as cooling local environments, retaining soils, and raising the water table. As forests are destroyed, the water table drops and soil can run-off into the coastal areas where it negatively affects coral ecosystems.

Increased population leads to increased pollution, but on Roatan sanitation infrastructure is insufficient for the level of development. As a consequence, there is no effective method of preventing pollution from entering the sea around the population centers of Roatan, such as, Punta Gorda, Oak Ridge, French Harbour, and Coxen Hole. In the bay at French Harbour, pollution has made the water an unsuitable environment for fish and makes recreation, such as swimming, an undesirable option. In Punta Gorda, where the population is more dependent on marine resources, the effect of pollution is directly observable because there is a major "dead zone" in the coral reef in front of the community. In part due to its location in Jose Santos Guardiola, where inefficient government leads to a noticeable lack in public services, garbage and sewage is completely unregulated in Punta Gorda. Human waste has entered the watershed and wells in some parts of Roatan. In the many areas of the island, lack of a centralized sewer system is partially responsible for the presence of *E. coli* in some wells (Evans, personal communication). The lagoon in front of Punta Gorda has been silted by

sediment run-off from a road constructed along the beach which, according to one informant, has caused the lagoon to be three feet more shallow in some areas. This run-off exacerbates the negative effects of human waste and creates a toxic milieu favorable for algae and disease.

Population pressure is also associated with the extensification of non-sustainable agricultural methods. These practices include the increase in swidden farming which contributes to deforestation and, on the steep hills of Roatan, to erosion. A recent study concluded that Roatan's agroecological land use exceed the limits of appropriate land use, thus contributing to environmental degradation (Vega et al. 1993). Cattle owned by wealthier farmers are often allowed to roam freely. Although this prevents the over-use of pasture land, it hampers forest regeneration because the cattle typically browse on early successional species.

Transportation infrastructure has contributed to the environmental degradation in the region. As previously mentioned, the construction of roads along some of the island's beaches has led considerable amounts of non-point pollution. The extension of the primary road on the island from West End to Oak Ridge necessitated modification of the surrounding topography. Some residents of Punta Gorda claim that this construction altered the hydrology of the island's watershed and thus led to a decline in the available surface water.

The development of tourist infrastructure on Roatan is responsible for significant habitat destruction (Stonich 1998). Constructions of hotels, condominiums, and vacation homes have damaged the mangrove and coral reef ecosystems. Developers in the area imagine the ideal Euro-American vacation paradise to be tropical Eden of crystal clear

waters and palm-lined, white sands beaches. Unfortunately, Roatan only has two major natural beaches fitting those criteria. One of these, West Bay Beach, has been largely developed. The other, Camp Bay, does not have access to a paved road and is too remote from the airport. Competition for land increased real estate prices at West Bay. As a result, developers began to modify non-beach ecosystems to fit the mold. To do this, they generally cut down the mangrove forests and then dredge up a beach.

The influx of immigrants from the mainland led to a shift in the Roatan pattern of employment and economic status. Numerous workers flood the labor supply and drive wages down. As an unfortunate consequence of widespread unemployment, the average earning potential of individuals has declined. Certain groups, such as Garifuna, have found it particularly difficult to find employment with a good wage. The influx of immigrants has also resulted in discrimination against Hispanic Islanders.

Humans have had significant impacts on all aspects of the coral reef ecosystem as a result of habitat modification, overfishing, and coastal pollution. Island residents utilize the coral reef for subsistence, commerce, and tourism, making it an invaluable resource. To many islanders, protection of the reef is a growing concern and conservation efforts, both current and future, hope to help preserve this valuable resource for the future.

Summary

This chapter has discussed much of the Bay Islands' history and development with emphasis on trends in the twentieth century. Development that took place in Punta Gorda was primarily a result of Garifuna emigration to other countries, such as the U.S.,

where they were able to accumulate savings and remit money to their family at home. Because of the Bay Islands' geological and ecological characteristics, island residents are left with limited available resources. As population increases in the Bay Islands, competition for resources increases, leading to a potential "Tragedy of the Commons" and the impoverishment of people dependent on natural resources for their livelihood (such as the Garifuna). The Bay Islands are in a strategic geographical position in the Bay of Honduras, but due to historical happenstance, the Islands remained a frontier between Anglo and Hispanic spheres of influence until the twentieth century. Continual competition for the Bay Islands stymied the area's development. The area has been left on the economic and social margins because they were never quite completely British and have never been entirely Spanish. Located in-between two cultural spheres, the Bay Islands have remained at the margin of both. Taking a step back and viewing the Bay Islands from a wider perspective, one can consider that the Islands, Honduras, and Central America as a whole, have been relegated to a socioeconomically and politically marginal position because competition between nation-states in Central America and the regions' geographical position between larger economic powers (i.e. U.S., Mexico, Columbia) ultimately forestalled significant development.

Finally, this chapter has shown that in the cultural history of the Bay Islands, Garifuna have traditionally occupied a marginal status in the Bay Islands. Since the Garifuna village of Punta Gorda is located in Jose Santos Guardiola, they have been bypassed by much of the recent tourist-oriented development on Roatan. Punta Gorda residents are left with few economic opportunities and often lack access to essential services.

CHAPTER FOUR

ETHNOGRAPHY OF PUNTA GORDA

To the Carib it is unthinkable that he should settle permanently in any place not immediately accessible to the sea… – Douglas Taylor (1951)

Figure 4.1 Garifuna display ethnic pride at their annual *Doce de Abril* festival celebrating their arrival to Honduras

Punta Gorda bears the dual distinction of being the oldest Garifuna community in Honduras and the earliest permanent settlement on Roatan since its original indigenous inhabitants were removed from the island in the early 1600s. Punta Gorda has been continually inhabited for over 200 years, and was the only settlement on Roatan for thirty years. Garifuna history before their deportation from St. Vincent and how they were marginalized in the past has already been covered in Chapter Two, so this chapter will solely focus on contemporary Garifuna society on Roatan and their recent history (since

the 1960s) in Honduras. Due to poor recordkeeping by the Honduran national government and the departmental government in the Bay Islands, there is a paucity of information about Garifuna history in Punta Gorda from their arrival to Honduras in 1797 until the mid-twentieth century (Davidson 1979: 67). Garifuna communities in other locations have been better studied, so they can serve as an analogy for Punta Gorda. Using such a comparison and based on interviews with my ethnographic informants, it appears that society, economy, and political organization in Punta Gorda remained largely unchanged until the 1960s.

Garifuna communities on the North Coast of Honduras, Caribbean Guatemala, and Belize maintain many elements of their rich cultural tradition. These communities trace their origins to the portion of the deported Garifuna population who departed to live among the Spanish in Trujillo. From there, Garifuna rapidly spread across the North Coast of Honduras and into Guatemala. By the early 1800s, Garifuna living on the North Coast began to depart for Belize to work as wood cutters (Gonzalez 1988). For Garifuna living in Punta Gorda, however; relative isolation on Roatan away from other Garifuna communities and increased interaction with other ethnic groups has led to significant cultural change. Punta Gorda is more susceptible to acculturation than are coastal Garifuna towns because its isolation away from other Garifuna towns deprives them of regular exchange with people who share their culture. Many core elements of Punta Gorda's culture and society, such as language, religion, family structure, and economy have experienced transformation as a result of acculturation to other societies and because their socioeconomic and political marginality made them vulnerable to change.

This chapter will discuss each of these elements in turn, but will begin with an ethnographic description of the community and its people.

The Community of Punta Gorda

Punta Gorda is located on the north side of Roatan, approximately ten miles from the eastern end of the island. On the south side of the island, directly across from Punta Gorda, are the English-speaking communities of Oak Ridge and Jonesville. Situated on a broad sandy beach in front of small, steep hills, the community stretches for almost a mile along the coast. This type of settlement pattern is characteristically typical of Garifuna communities throughout the Bay of Honduras (Taylor 1951). The first barrios settled in Punta Gorda were in the broadest valleys with the best water and as population grew over the years the community expanded along the beach gradually filling in other valleys that were less favorable because of steeper terrain and less water. More recently, as available land began to become scarce, Garifuna started to build houses on the hillsides near the beach.

The village extends from close to Punta Blanca (a rocky point of chalky composition – thus the name which means "White Point" in Spanish) in the east to a swampy mangrove area in the west. There are six intermittent streams that flow through the various barrios, usually only having water after substantial winter rainfall. Historically, these streams had constant flow, but deforestation near Punta Gorda and falling water tables across the island have left creeks dry for much of the year. When I asked one Garifuna man why he thought the water table was declining, he responded:

> After they built that road [Roatan's primary highway which runs along the ridge above Punta Gorda] the wells have gone down. It's because they cut into the hills and that made the water dry up. Another thing that hurts our water is that people set fire to the forest. Where there aren't no trees, the creeks don't have water.

In front of the community lays a large lagoon, protected by a barrier reef two to three hundred yards off of the beach. There are several shoals within the lagoon which are exposed during extremely low tides, including some manmade conch shell middens. These shell middens are at least thirty years old, dating from when conch were more plentiful near Punta Gorda. One day when I was returning from a fishing trip with one of my primary informants, the water was particularly clear and I noticed the large middens and asked him about them. He responded that fishermen would usually process their catch while still in the lagoon in front of the community and would dispose of the shells out there. The reef has two narrow channels, one at either end of the community, which can let a small boat enter the lagoon.

The present-day community consists of six *barrios* (residential district or neighborhood) and one *colonia* (a residential district outside the primary community) (See Figure 5.2). From east to west along the beach, or "up" to "down" as Islanders say, the different neighborhoods are: Barrio Ingles (or English Town), Barrio Iguana, Barrio Lagarto, Jali (or Barrio La Cola), Barrio Punta Gorda, and Barrio Cañabraval (or Maburenwa); Colonia Santidad (or Invacíon) is located on the hill behind Barrios Iguana and Lagarto, but the sea is not readily visible from its location. According to oral history in the community, Barrios Lagarto and Cañabraval were the first to be settled, followed by Barrios Iguana and Punta Gorda. Barrio Ingles sometimes in not considered to be part of Punta Gorda because the original settlers of that neighborhood were Black Creoles

who arrived from the Cayman Islands in the 1830s. As its name reflects, Jali (La Cola in Spanish, meaning "tail") was the last barrio along the beach to be settled.

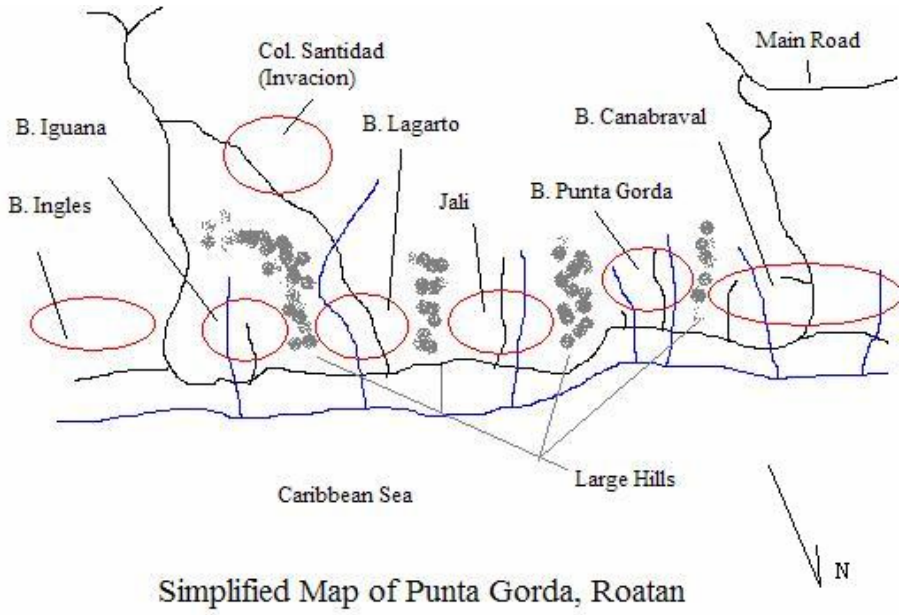

Figure 4.2 Map of Punta Gorda

Many residents of Barrio Ingles still have English surnames, however, the older generations appear to be completely integrated into the larger Garifuna community. People from Barrio Ingles practice many aspects of Garifuna culture, including spiritual beliefs and dances, and they grow up speaking the Garifuna language. Nonetheless, English is more widely spoken in Barrio Ingles than in the other barrios of Punta Gorda. Intermarriage between Barrio Ingles residents and other barrios is common, but there are some distinguishing characteristics: for example, people from Barrio Ingles often use their own cemetery, instead of the community cemetery located to the west of Cañabraval. One explanation for using a different cemetery is proximity, but given that

residents in nearby Barrio Iguana use the lower cemetery it seems unlikely that closeness is the only reason. There may be some degree of separation between Barrio Ingles residents and the rest of the community that persists as a cultural artifact demonstrating their different origins. When I asked one resident of Barrio Ingles about the reason for a different cemetery, he shrugged and said "this [one] is for we and the other is for they down there [in the rest of the community]". Another significant difference in Barrio Ingles is that their house construction is more typical of Creole communities (wooden houses on stilts) instead of Garifuna style (mud or cement houses on the ground). Recently, younger generations from Barrio Ingles have been trying to distinguish themselves from other Garifuna. The fact that intermarriage takes place frequently between Barrio Ingles residents and other people from Punta Gorda demonstrates that there has been little discrimination between the two groups of people.

Colonia Santidad is the most recent settlement in Punta Gorda. It was built in part by U.S. missionaries after Hurricane Mitch destroyed many beachfront houses. Few Garifuna call the Colonia by its proper name, preferring to call it Invacíon in reference to when Mestizo squatters "invaded" the area in the early 1990s. In response to this invasion, Garifuna community representatives warned the squatters that they had no rights to the land and should leave immediately. After the squatters did not leave, Garifuna went to the Municipalidad in Oak Ridge to take legal action. But the squatters still did not leave, so the Garifuna community decided to take action: about 150 men, including respected community leaders, grabbed machetes and spear guns and marched to Invacíon to deal with the unwanted residents. These Garifuna vigilantes forcibly removed the illegal occupants from their bush houses and subsequently burned all

structures to the ground, with all the squatters' possessions inside. Ever since the Garifuna expelled outsiders from Punta Gorda, the community remains one of the most ethnically homogeneous places on Roatan.

Punta Gorda residents enjoy using this tale to convey the *Fuerza Garifuna* (Garifuna strength or solidarity) that exists in their community. Garifuna continue to resist marginalization by other groups – especially when their land is involved. One Garifuna man said that, "they are proud to maintain their own [lands], but they only come together when someone from the outside makes them." His statement demonstrates that Garifuna resist pressure from outside forces, but the community only seems to cooperate in times of stress. Once a threat to the community from the outside abates, the people of Punta Gorda return to an independent mode of existence which involves little cooperation with one another.

According to a complete community census conducted during my fieldwork in 2003, the current population of Punta Gorda is 1,727 persons (See Table 4.1). At best, this figure is an approximation because my census did not necessarily include residents who live part-time in Punta Gorda. Many Garifuna live part-time in the United States or other countries, many men from Punta Gorda work at sea in fishing or shipping occupations resulting in long periods of absence, and many children of high school age are sent to study on the mainland of Honduras. I accounted for as many part-time residents as possible during the census; however some individuals were undoubtedly overlooked.

Table 4.1 Population of Punta Gorda

Barrio	Men	Boys (< 18)	Total Male	Women	Girls (< 18)	Total Female	Total
Cañabraval	112	115	227	135	122	257	484
Punta Gorda	51	52	103	57	42	99	202
Jali	56	53	109	50	51	101	210
Lagarto	64	51	115	65	58	123	238
Bo. Iguana	55	45	100	74	30	104	204
Bo. Ingles	66	75	141	74	80	154	295
Invacíon	21	27	48	29	17	46	94
Total	425	418	843	484	400	884	1727

The most populous barrio is Cañabraval, followed (in order of size) by Barrio Ingles, Barrio Lagarto, Jali, Punta Gorda, and Barrio Iguana. The smallest settlement in Punta Gorda is Invacíon (Colonia Santidad). The ratio of males to females is roughly equal; 843 to 884, respectively. However, when age is accounted for, adult males make up 46.7% of the adult population while adult females make up 53.2% of the adult population. An explanation for this discrepancy is that Garifuna males are more likely to migrate out of the community in search of employment and leave their family behind. Though it is true that males have a higher death rate than females, this difference seems to be more related to migration. To develop a better explanation, more research would be needed. For children (under 18), natural birth ratios are more accurately reflected; boys represent 51.2% of the under 18 population while girls represent 48.8% of the under 18 population. One interesting aspect of Punta Gorda demographics is the ratio of adults to children under the age of 18; children account for over 47 % of the population of Punta Gorda. The population pyramid in Punta Gorda is very bottom heavy. Implications of

this youthful population are that as children come of age and start their own families, there is the prospect of substantial population growth.

Average household size is 4.97 (SD 2.3) persons (See figure 4.3). The largest household surveyed had twelve persons living under the same roof and the smallest households were single individuals, although it is fairly uncommon for Garifuna to live alone. Households consisting of single individuals were most likely to be elderly males who had separated from their spouses and no longer had children living with them. On average, 1.6 (SD 0.98) persons were responsible for sustaining the household.

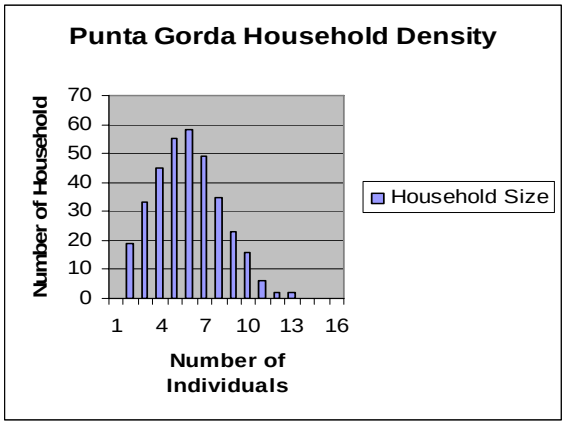

Figure 4.3 Punta Gorda Household Density

Household Survey

During my community census, I identified 375 households in Punta Gorda. Of these, 343 households agreed to participate in a household survey that collected information on house construction, access to utilities (i.e. water, electricity), education, and material goods owned by the household. There are a wide variety of housing types

and construction styles in Punta Gorda, a clear departure from the traditional Garifuna houses still present in the 1960s and described by Davidson (1979: 69-71):

> The houses are consistently rectangular, peak-roofed, up to twenty feet high, with hardened mud floors. The main posts were generally of *iron-wood (Laplacea haematoxylon)* and the rafters and beams of Santa Maria *(Calophyllum brasiliense)*. Walls were of *palmetto*, or "cabbage board" *(Roystonea regia,* royal palm), stakes driven into the ground with stems from the same plant or *caña brava (Gynerium sp.)*, attached horizontally. This lattice was then plastered with clay and covered with orange mud. Cohune palm (*Attalea cohune)* leaves were the preferred thatching material. There were two doors and four windows, one on each side. The interior was partitioned into living and sleeping rooms, and often a kitchen of the same material was built close behind or attached to the house.

Availability of modern construction materials such as, cement and cinder blocks, manufactured lumber, and metal laminate roofing has enabled Garifuna to build non-traditional dwellings. Perhaps more importantly, frequent storms and hurricanes encouraged Garifuna to build more durable houses; as one Garifuna man said, "After each hurricane the community gets more built up," implying that modern construction is preferred to replace houses that have fallen into disrepair or been damaged by wind and storm surges. Traditional mud houses are extremely vulnerable to being washed away during severe weather; after days of rain, the walls may start to erode. Traditional thatched roofs also have problems; they must be replaced frequently and are often not entirely water proof. Nonetheless, Garifuna still build traditional style buildings to use as outside kitchen areas or to use as *champas* (an outdoor stand with a palm roof), where family and friends can relax in the shade to converse, play dominoes, or simply stretch out in their hammock. At one point during my fieldwork in Punta Gorda, one of my primary informants was constructing a champa and when I asked him why he was building it, he replied, "so I can have a place to hang my hammock and enjoy the breeze."

Many community buildings, where people go to play drums, dance *Punta*, and participate in cultural activities are also still constructed in the traditional style.

Type of housing construction is dependent on the socioeconomic status of the family in question. To be sure, there are many residents of Punta Gorda who still live in traditional houses (see Figure 4.4), with mud walls and thatched roofs because they cannot yet afford other materials. It is not unusual to see however, a mud house with a partially constructed cinder block wall around it; as the family is able to purchase the materials, they slowly, but surely build their modern house around themselves. One Garifuna man told me, "the best way to claim land in Honduras is to build on it."

Figure 4.4 Garifuna house of traditional construction, but with metal roof

Unlike construction styles typical of other island communities where houses are often built on stilts, even if they are far enough inland that flooding from the sea poses little danger, the majority of houses in Punta Gorda, with the exception of Barrio Ingles, are built directly on the ground, on a concrete slab or dirt floor. Although stilt construction reduces the annoyance of biting insects such as sand flies (also called black flies and no-see-ums) and mosquitoes, one Garifuna explained that he prefers to be "close

to the earth" when he sleeps, thus the reason for houses on the ground. In addition, Garifuna tradition, dating from their time in St. Vincent, has dictated that they use ground-level houses. In recent times, acculturation to contemporary Honduran architectural styles influences people in Punta Gorda to build ground-level houses of cement or block construction.

Across Punta Gorda, the average house size is 2.8 rooms. Houses usually have one or two sleeping rooms, and a front room that is used for cooking, eating, and entertaining. An interesting trend in the construction of houses is that, where space permits, Garifuna are building larger, more spacious homes which, ironically, house smaller families. In the barrios along the beach, land and space are at a premium, so many of these newer, larger, and more modern houses are being built along and on top of the hillsides. New homes are usually built by Garifuna individuals who have spent the majority of their adult lives outside of Punta Gorda and not by poorer, locally based families. After individuals who lived and worked outside of Punta Gorda feel they have earned enough money, they bring their savings back to Honduras for retirement.

Most homes in Punta Gorda have electricity, although many houses do not have their own meter; instead, they "borrow" electricity from their neighbors or relatives. During my initial field studies in 2000, I stayed in a house that borrowed electricity by running an extension cord over 100 yards to another house. Fortunately the house only had a single light bulb and a radio, so there was not much need for a reliable connection. The house was owned by one of my primary informants and he justified his electrical system by saying that the costs (for deposits, line, circuit breakers, meters, etc.) of installing electrical service were too high. Although Roatan Electric Company (RECO)

was established in the late 1960s and the nearby community of Oak Ridge has long been connected to the electrical grid, power lines were only installed in Punta Gorda in the early 1990s. There is no reasonable explanation for why it took so long to electrify Punta Gorda, but it provides yet another example of how Garifuna have remained at the margin of society in Roatan and how they have been victims of discrimination. Though this discrimination was not always actively displayed, the practice of not extending public services to Punta Gorda demonstrates passive discrimination. RECO has many problems related to its management. Discussions among Roatan residents on an internet discussion group have revealed that RECO's business practices subsidize "rich" users at the expense of "poor" users. The power company does not cut power to its wealthier clients who have large outstanding balances; the difference is made up by giving other clients higher rates. Prior to electrification of Punta Gorda, many individuals and families maintained private electric networks run off gas-powered generators. Since the electrical grid was brought into Punta Gorda, village residents have adopted electric appliances wherever possible. Most houses have FM radios and CD players and around half have television and are hooked into one of the locally-run cable networks. Refrigerators and freezers are less common.

In 1996, Punta Gorda had a water system installed. Water is piped from a community well located near Invacíon and is stored in a cistern located above Barrio Iguana. Although the community water is not potable by U.S. standards, many local residents still drink it, especially when they are unable to afford purified water. It is a fairly simple process to "purify" water in the home using bleach, but this is not always done by residents in Punta Gorda. Every house in the community can tap the water

system for a flat rate of 100 Lempira per month (≈ $5), providing that they install their own connecting pipes. Water is not available twenty-four hours, seven days a week; for the six barrios along the beach it arrives around seven in the morning on everyday expect Sunday and Wednesday and on lucky days, its lasts until noon. On Sunday and Wednesday, water is piped to Invacíon. Most Garifuna have one or two large barrels that they use to store water for the day, but wealthier community members have built or purchased ready-made cisterns for water storage. All residents of Punta Gorda are, by necessity, required to conserve water, but when the water is "on" many houses leave taps running even when their water barrels are overflowing. It appears there is a dichotomy between times of surplus, when conservation of water is not important and times of scarcity when it is important to conserve to the last drop. This dichotomy is an allegory for the way many Garifuna use resources in general; when they have more than sufficient, they are not worried about the future. An often repeated saying in Punta Gorda about resource use practices exemplifies this attitude: "When I have, you have, when I need, I can get it from someone."

Most Garifuna households (≈ 73%) have tapped into community water (see Figure 4.5), but only about half of the dwellings in Punta Gorda have indoor plumbing, the rest rely upon outside faucets. About 19% of all households obtain their water from their neighbors and only a slim percentage (7.8%) of Garifuna still depend on well water for their primary washing and bathing needs. Many wells in the community have dried up because they were too shallow and the local water table has dropped. Some wells have become contaminated by closely placed, open-bottom septic tanks. Other wells have simply been abandoned. The fact that over a quarter of households in Punta Gorda

do not have access to running water and must rely on neighbors or unsafe water sources is a symptom of the community's poverty and demonstrates that the people of Punta Gorda remain in a marginal position.

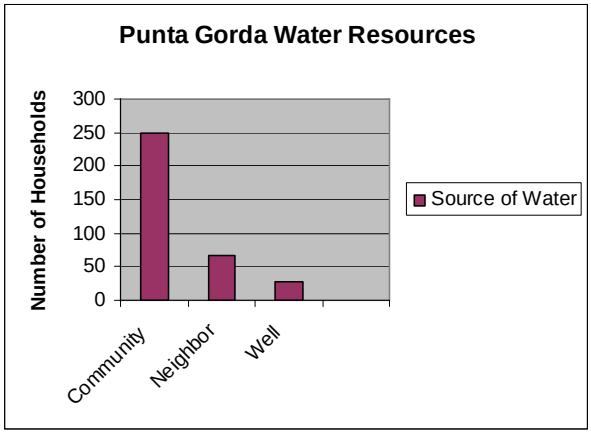

Figure 4.5 Punta Gorda Water Resources

Sanitary facilities vary widely among houses in Punta Gorda (see Figure 4.6) and are a product of acculturation. In the past, no form of sanitary facility existed in Punta Gorda and people would "go to the bush" for their needs. As the community has become increasingly acculturated in contemporary times, many households have adopted the use of latrines and indoor facilities. The primary type of facility is an outside latrine, usually built directly on top of a septic pit. Many of these latrines were built by aid groups. Only recently have residents begun to construct indoor bathrooms. One major limiting factor to the construction of indoor facilities is that it is difficult to retrofit existing construction where there are concrete floors and walls. There are a small percentage (12.5%) of residents who have no facilities in their home and instead use *nicas* or bedpans which are emptied into plastic bags and thrown away. Unfortunately, many of these waste bags are thrown on communal garbage piles or carelessly thrown toward the beach, creating

unsightly, foul-smelling areas close to their homes which can potentially increase disease vectors in the area.

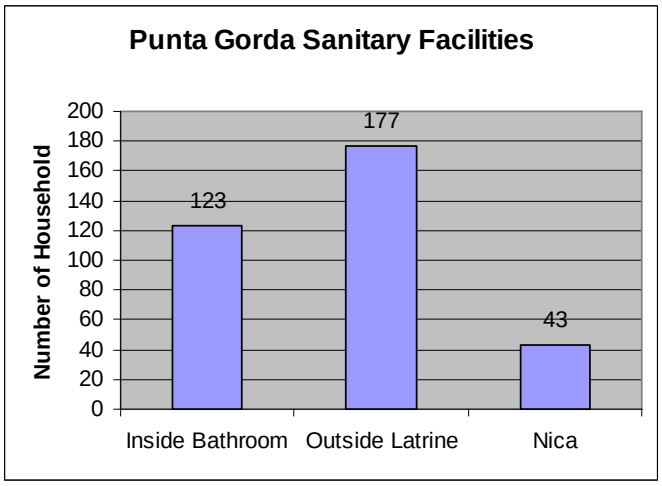

Figure 4.6 Punta Gorda Sanitary Facilities

Punta Gorda has several organizations within the community for various political, social, and economic purposes. Despite the existence of these organizations, however, Punta Gorda remains largely disunited in many aspects. Garifuna seem to only unite in times of stress. Many individuals choose to remain aloof from organizations and do not typically cooperate with other community residents. This tendency is demonstrated by the comments of one Garifuna fisherman: "I mind my own business, I don't get involved in community. I go by my mother's house, I buy my little drink, and then I come home." There are some Garifuna who realize that social and political organizations can bring benefits to the community; as exemplified by one man's statement: "Well, we have to get more united....more organized. To have better incomes coming into the town, into the country."

Organizations include formal political groups which have nationwide representation such as, *Organizacion para Desarollo de Etnico Communidades* or the Organization for Development in Ethnic Communities (ODECO) and *Organizacion Fraternal de Negros Hondureños* or the Fraternal Organization of Black Hondurans (OFRANEH). ODECO has a history of working to increase awareness of Garifuna communities and has been instrumental in gaining governmental recognition of the indigenous status of Garifuna people and special rights related to that status. For example, in 1999, the Honduran government passed Decree 107 which declared Garifuna to be an indigenous group to Honduras and gave Garifuna communities more control over their traditional lands. Although this decree was somewhat controversial because Garifuna are technically not an indigenous group of Honduras, it has been well received by Garifuna communities. After passage of this legislation, no non-Garifuna may purchase land which has been determined to be part of traditional Garifuna lands. ODECO has worked to help Garifuna overcome their marginal status and as an advocate for Garifuna causes throughout Honduras, sometimes with less than successful results. Recently it came to my attention that ODECO is involved in land disputes in mainland Garifuna communities near the Bay of Tela. That area is considered to be Honduras' next major tourist location because of its attractive beaches and a higher carrying capacity (i.e. more abundance of limiting resources such as groundwater which would otherwise restrict development). In the Bay of Tela area, two Garifuna men were murdered by Honduran paramilitary police forces for their protests against exploitation of traditional Garifuna lands.

Besides churches, the most important community focal point is Punta Gorda's school, which has an enrollment of around 700 students. Education in Honduras is compulsory and government sponsored until sixth grade; then parents must begin to pay tuition and fees to pay for their child's education through *colegio* or high school. Island-wide, there are few options for secondary school; due to the higher cost of living on the Island, matriculation costs for high school are increased as well, making it difficult for many island residents to send their children to school. When they can afford to do so, many residents of Punta Gorda send their adolescent children to live with relatives on the Honduras mainland so they may attend better equipped and less expensive schools. Because location and socioeconomic factors make it difficult to access schools, the overall education level in Punta Gorda remains low; two-thirds of all households reported sixth grade as the highest achieved (see Figure 4.7). This contributes further to their marginal status; because Garifuna oftentimes have less education, they have difficultly competing for jobs. In many cases, Garifuna who leave the community to continue their education, remain in urban areas where there are greater employment opportunities. There is a "brain drain" where educated Garifuna from Punta Gorda are unlikely to return to their home community where there is little employment opportunity.

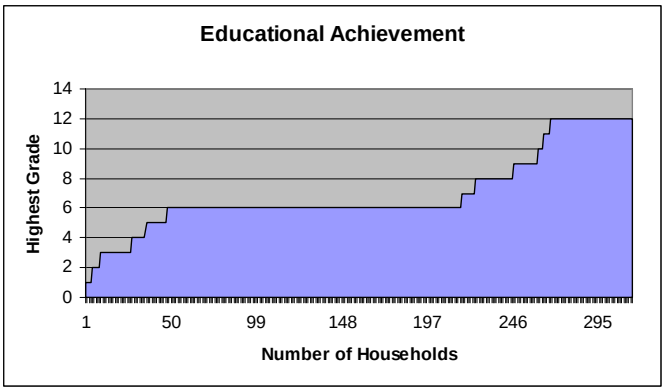

Figure 4.7 Educational Achievement

Honduras' educational system also has effects on Garifuna language and culture. Honduran law demands that classes be taught in Spanish; however, bilingual education in English is permitted. Unfortunately, there are no classes offered for instruction in Garifuna. As a result, younger generations are using Spanish as their preferred language, to the neglect of their traditional tongue. Although many residents in the Bay Islands have an English-speaking heritage (including many Garifuna) the Honduran government's efforts to Hispanicize the Bay Islands has diminished the importance of English and fewer people are learning to speak it. Ironically, recent emphasis on tourism has made English essential and those who cannot speak it are socioeconomically disadvantaged because they miss valuable opportunities in the booming tourist sector.

Among older generations of Garifuna (people older than 35), it is not uncommon for people to be tri-lingual, in Garifuna, Spanish, and English, and for them to speak each language interchangeably. Nearly 60% of households in Punta Gorda have linguistic capability in these three languages (see Figure 4.8), but a surprising number can only speak one or two languages. Because these data are based on the household level, it does not adequately reveal the fact that younger generations are more frequently using only Spanish. Some residents of Punta Gorda hope to encourage youth to learn Garifuna, but it appears that they are fighting an uphill battle. Whereas many older Garifuna are willing to speak Garifuna in public places so that they can communicate somewhat privately, many younger Garifuna feel socially stigmatized to speak *"Moreno"*. During my ethnographic interviews, I routinely asked about Garifuna vocabulary in order to learn that language. On several occasions, I received a shocked look, as if to ask why anyone would want to learn Garifuna. Clearly the declining use of Garifuna

demonstrates how their position on the margins of society makes them vulnerable to cultural change, such as language loss.

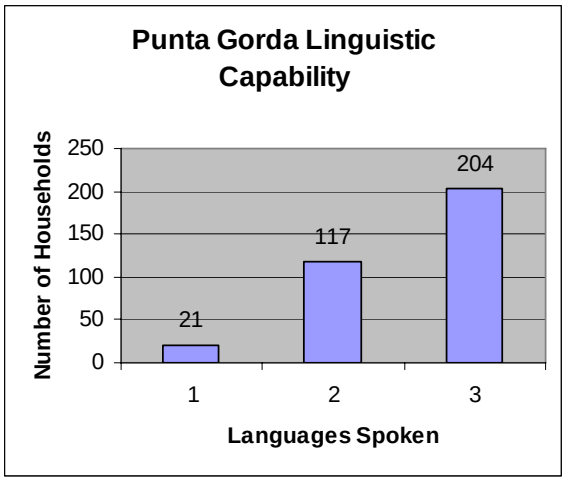

Figure 4.8 Punta Gorda Linguistic Capability

Garifuna Religion, Spiritual Beliefs, and Dances

Acculturation of Garifuna to Christianity has led to the suppression of traditional religious and spiritual beliefs. Although it is difficult to claim that loss of traditional beliefs has contributed to economic and political marginalization, it has certainly eliminated a major part of Punta Gorda's culture. Garifuna communities elsewhere in the Bay of Honduras practice a unique form of ancestor veneration called *Dugu*; in Punta Gorda, however, Christianization has all but eliminated Dugu. A Dugu is a "placatory ritual, conducted by a spirit medium, designed to propitiate those ancestors regarded as afflicting the living" (Foster 1994: 8), but it also refers to other aspects related to Garifuna spirituality. When asked how long since Punta Gorda has had its last Dugu, one local Garifuna said, "We don't practice that *brujeria* [witchcraft] anymore. It's not

Christian. People don't like some of those old ways anymore, we go to church now." Based on my ethnographic interviews I estimated that there had not been a Dugu since the 1970s.

Spirit possession is a common theme in Dugu; the possessed individual is usually a young woman who is possessed by one of their ancestors because they are not respecting their elders or remembering them "enough". Spirit possession among the Garifuna has been described as an "expressive, symbolic action: a masque of the dead and a performance of ethnicity. Spirit possession is the bridge by which Garinagu contact their past and dramatically represent it in the present" (Foster 1994: 10). In one case that I witnessed in Punta Gorda, a young woman was possessed by her deceased grandfather who wanted to take her with him (presumably to the "other side"). When the possessed individual was examined by conventional medical professionals she appeared completely normal; however, once the doctor was away, symptoms of possession returned. In the past, Garifuna in Punta Gorda would have held a Dugu ceremony to placate vengeful ancestral spirits: a communal building would be constructed for a feast replete with Punta dancing. In contemporary Punta Gorda, ancestral spirits are offered a *misa* (or offering) consisting of a plate of their favorite food and drink – a scaled-down version of Dugu in which only immediate family are involved. Traditional Dugu served as both an economic leveling mechanism and as a means to foster unity within communities. Since Dugu has been discouraged by Christian missionaries and is no longer practiced, Garifuna of Punta Gorda have lost an important cultural tradition which brought the people together. On the mainland of Honduras, where Garifuna villages have undergone less acculturation, Dugu is still practiced.

Although not a religious belief or superstition per se, Garifuna mythology includes the *Indio Barbaro* or Barbarian Indian (see Figure 4.9).

Figure 4.9 An Indio Barbaro threatens the camera

Usually only appearing at holiday occasions, such as Christmas, *Doce de Abril* (the celebration of the Garifuna arrival to Roatan on April 12th), or *Semana Santa* (Holy Week), Indio Barbaros are Garifuna individuals who dress themselves in a loin cloth with a banana leaf skirt, smear dark black grease all over their body, and wear a mask designed to incite fright. The Indio Barbaro carries a bow and arrow with him and keeps a whistle ready to scare unsuspecting passers-by. When an Indio Barbaro is encountered, one must give them one or two Lempira (pocket change); in order to avoid being "painted" with grease. Parents like to use the threat of an Indio Barbaro to keep young children in line and well behaved.

Closely integrated with Garifuna spiritual beliefs are their traditional dances, such as Punta. The best way to experience Garifuna dances is to watch dance groups perform in Punta Gorda during festival occasions. When Garifuna dance in Punta Gorda, the occasion is relaxed; anyone may participate in the dancing and people frequently trade off drumming. In recent years, Punta has become popularized into a local genre known as Punta Rock, but traditionally it was only danced at festival occasions. Because of its obvious sexual innuendos, Punta is considered a fertility dance, but it is also associated with funerary rites. Punta dancing symbolizes the cycle of life and death so a person may call for the community to dance at their wake. In addition, one year after a death and funeral, family and friends of the departed will hold another wake, where Punta will surely be danced again.

Punta is also danced as part of a tradition known as *Paranda*. In the days preceding a festival occasion, groups of people will travel from house to house, oftentimes at night. Some members of the group will be carrying drums and traditional instruments, such as a turtle shell for percussion and a conch trumpet. The group will stop in front of a house and begin to play, keeping it up until someone inside comes out and invites the group in. The group will then enter the house and play and dance a couple of songs. In exchange for this entertainment, the house's residents will offer the group a small token of appreciation, such as soup or other foodstuffs, rum or *gifiti* (a traditional drink of rum mixed with medicinal roots), or a nominal amount of money. Interestingly, during Paranda, the group usually targets particularly houses which they think are wealthy enough to be able to provide some type of compensation. In this fashion,

Paranda is a form of a leveling mechanism, which allows small amounts of wealth to be spread around the community while maintaining an important cultural tradition.

Most visitors to Roatan never get the opportunity to witness Garifuna dances in their local setting. Instead, dance groups from Punta Gorda put on exhibitions with Garifuna drumming and traditional dancing at major island resorts. In recent history, Garifuna dancers would be transported to these locations, usually at night, where they would satisfy tourist's appetite for cultural consumption. Other scholars (Kirtsoglou and Theodossopoulos 2004) have rightly argued that tourist businesses are exploiting Garifuna culture. In many cases, dance groups are paid only with tips they receive from the audience, yet resorts charge an entrance fee of ten to twenty dollars per person for the privilege of experiencing another culture. With the growth of cruise ship tourism, dance groups perform more frequently during the day time. One recently established tourist business, maintains one group of Garifuna dancers in-residence and has explanatory displays about Garifuna culture and history. The proprietor; however, is non-Garifuna and all of the profits stay with her; while dancers continue to rely solely on tips given to them by tourists.

In their tourist-oriented performances, Garifuna dancers are dressed in full costume. Female dancers typically wear a uniform consisting of a brightly colored calf-length skirt, matching blouse, and a head scarf. Male dancers are also dressed in skirts, but have the additional costume elements of ankle and wrist bracelets with bells and intricately carved masks. Dancers give short demonstrations of Punta and *Yancanu* (*La Masquera* or the Mask Dance*)*. Yancanu (see Figure 4.10) has particular significance to Garifuna culture because it is a war dance which was reputedly danced by Garifuna folk-

hero Chatoyer (Satuye) prior to going to battle. Dressed in the style women's clothing, men believed that they could closely approach their enemy with weapons hidden in their clothing and thus gain a tactical advantage in battle.

Figure 4.10 Garifuna dancer in traditional dress

Because Garifuna dances are widely advertised in tourist flyers, they have become one of the "required" activities for a tourist's itinerary in Honduras. In this sense, Garifuna dances have become a commodity which is being bought by the tourists and sold by tourism oriented businesses, while only giving a small amount of benefit to the performers. Commodification of Garifuna culture remains a serious issue with the community (Kirtsoglou and Theodossopoulos 2004). Whereas exploitation of Garifuna groups by non-Garifuna businesses clearly demonstrates inequality in socioeconomic and political relationships on the island, dancers do bring limited income to themselves and

their families. Aside from giving pared down versions of traditional dances, Garifuna performers have not drastically changed their dances for cultural consumption. Is Garifuna culture "being taken away" by tourist businesses? Probably not; Garifuna culture survives in Punta Gorda – it is simply the watered-down version that is being sold at a rate so cheap to justify calling it exploitation. Nonetheless, exploitation of Garifuna dancers so that tourists can see the "exotic natives" further exemplifies how Garifuna occupy socioeconomically marginal positions in the Bay Islands and Honduras.

Subsistence

When I was interviewing fishers about their groups and organizations in Punta Gorda, I asked them to talk about important social institutions. One informant responding quickly: "Culture, Cassava, and Machuca." Even though he misunderstood the intent of my question, his feelings were clear; traditional foods are part of what give Garifuna their ethnic identity. In Punta Gorda, the primary mode of Garifuna subsistence was artisanal fishing practiced by men and small hillside swiddens cultivated by women (Taylor 1951). Traditional agriculture was based on plants such as coconut, yucca, manioc, plantains, bananas, cocoa, maize, and watermelon. Garifuna supplemented their diet with use of herbs and roots from the forest.

In the past forty years, Punta Gorda has followed the rest of Roatan in its transition away from a subsistence level economy. No longer do the majority of Garifuna get their sustenance from locally gathered or grown foods. Instead, people have almost complete reliance on foodstuffs purchased from grocery stores and *bodega*s found in

Roatan's large towns. In Punta Gorda, essential commodities are available at *pulperias* (small community stores), but there is usually less selection at higher prices. Many local residents have gardens around their house, but these only supplement household dietary needs and are not sufficient to fulfill all nutritional requirements. For the Garifuna, fishing remains an important tradition and contributes substantially to local subsistence. Humans cannot, however, subsist on maritime resources alone; at most, maritime resources provide only 15% of daily caloric requirements. In Punta Gorda, seafood is widely eaten and many traditional Garifuna dishes are based on fish or crab. Fishing in Punta Gorda is not just for subsistence purposes, but serves an additional small-scale commercial role. After bringing a catch back to Punta Gorda, fishermen will keep enough for their family and then may sell the excess in order to purchase other commodities. Further discussion of the Garifuna fishing economy will ensue in the following chapter, so only Garifuna food, dietary change, and horticulture will be discussed here.

Traditional Garifuna food is still widely eaten among the people of Punta Gorda. In fact, one of the most popular Garifuna foods, *Fufu* (Garifuna) or *Machuca* (Spanish), has been accepted into mainstream Honduran cuisine. Fufu can be described as a Coconut Fish Stew. Plantain preparation still takes place using traditional methods; the plantains are boiled and then are mashed into a paste using a large wooden mortar and pestle (see Figure 4.11). Garifuna take pride in their fufu and, when they can, are pleased to offer guests a plate.

Figure 4.11 Garifuna man preparing plantains for *Fufu*

Cassava bread is one of the foods that best characterizes the traditional Garifuna diet. In the traditional method, cassava bread is made grating cassava (sweet manioc) on a homemade grater consisting of a wooden board with hundreds of sharp rocks pounded into the flat surface. The cassava flour is sifted and mixed with a little water on a flat, round basket woven from cane. The flour is then placed on a flat iron stove surface, typically cut from the top of a steel barrel and which usually rests on an earthen oven or hearth. The bread is cut into a circular shape and is left on the stove for only a few minutes. Only thirty years ago, cassava bread was much more widely consumed than it is today. When asked why that is the case, one Garifuna said, "It is too hard to get cassava here. It is grown on the coast and we can't grow it here because there is not enough land and because the *sampopos* (Leaf-cutter ants) always destroy our gardens."

There are several different explanations as to why Punta Gorda and Roatan as a whole have shifted away from horticulture. One contributing factor is that large-scale agricultural plantations on the North Coast can produce basic foodstuffs cheaply enough that they have taken over the market on the island. The narrow coastal plains on the North Coast have rich alluvial soils and are extremely productive. Much of the production that takes place there is intended for export to markets in the United States; however a considerable portion is consumed domestically. Fresh fruits and vegetables are shipped to Roatan from the mainland on a daily basis. In a role reversal from the early twentieth century when bunches of bananas were piled at Roatan's ports, waiting for transport to the Coast; now the only bunches seen are those being unloaded for island consumption.

Another contributing factor to the decline of island horticulture is population growth, which resulted in increased premiums for land. In many parts of the island, including Punta Gorda, residents have built houses on much of the flat terrain, and now communities are climbing the hills as people build on the slopes. Since rugged terrain is a major limiting factor in Roatan, relatively little arable land remains for horticultural use. Only in isolated areas such as Diamond Rock and Camp Bay, on the extreme eastern end of Roatan, and on Santa Elena, the island directly to the east, can one find horticulture still being practiced on a scale large enough to support families on it alone.

A third factor which has influenced the decline of island horticulture is the growth of the commercial economy in fishing and tourism. In traditional Garifuna horticulture in Punta Gorda, women were responsible for tending gardens and harvesting the product. However, men had an essential role in clearing land and burning debris. As males in the

community increasingly shifted into wage-based occupations in fishing and tourism, they had less time available for their at-home duties. Furthermore, many men had less inclination to clear land for food-producing gardens because they were earning cash with which to buy commodities. One Garifuna man provided me with a good explanation of how the growth of fishing encouraged people to leave horticulture behind:

> You see a lot of divers here, a lot of fishermen. This place is killed….this place is destroyed. But them years ago, we not have to go no where to get product…we get product anywhere, like lobster. We could stand here and watch the lobster crawling there…them years ago. Thirty years ago there was a lot of things around here and the people in them times, most of the people used to work in the bush with the plant…live off of planting…selling coconuts and stuff like that. Them years a [back], most of the people worked in the bush…but now they don't work in the bush. That's what I tell you, that's why there are too much fishermen. But them years, thirty years ago, most of the people worked in the bush, plant…they plant. That's what they used to live off here. Now, nobody work in the bush…they just fishing…fishing…everybody fishing…and like when this shrimp season lately open, a lot of guys go too…

Garifuna also hunt certain animals for food, such as Green Iguana and Watusa (also called Agouti or Island Rabbit). Watusa are now rarely seen around Punta Gorda, but were more common in the past. Green iguana can still be readily caught and are treated as a delicacy by those who eat them especially when iguanas are in season and females have eggs. One young iguana hunter told me "it's like two meals in one, because you get the meat and you get the eggs." Some people do not prefer iguana, however, viewing it as a poor person's food. Iguana are endangered on the island, although there have been some efforts to protect them, such as at the "Iguana Farm" in French Cay. As development on the island increases and private property rights become more diligently defended, it is becoming difficult for people to go hunting in places that they would

traditionally use. One of my primary informants told me hunting is quickly becoming a thing of the past because:

> [Property owners] keep their farms or yard or whatever and you cannot hunt, you cannot...because sometimes when we go fishing we go hunting also. We catch fish and we catch something like off the land. But right now, we can't fish and we can't go fish and hunt.

There are two areas of major health concern related to contemporary island diet; increased consumption of sugar and fat. Over-consumption of these foods can lead to life-threatening illness such as diabetes, hypertension, and heart disease. Increased sugar consumption comes from many sources, one of the most prominent being *refrescos* or sugary soda drinks. In Punta Gorda, people love to drink their refrescos, but sometimes one will hear about a person who has "sugar in their blood". Typically an adult over the age of 40, a person with "sugar" has developed Type 2 (adult-onset) Diabetes. Unfortunately for these individuals, there are few options for sugar-free drinks. Although diet colas are made in Honduras, they are usually not imported to the Islands.

In the past, people used coconut oil for cooking purposes, however it has become more expensive due to higher demand and less supply because the Lethal Yellowing disease has devastated stocks of coconuts in the Bay Islands. Recently, fatty foods have become more widely available on the island and, as a result, their consumption has increased. The most common fatty foods used are shortening (*manteca)* and butter. Health-conscious varieties (i.e. reduced cholesterol and reduced fat) of these two foodstuffs are available, but are priced higher and generally unaffordable for many Punta Gorda households. In addition, healthy alternatives are usually only found in major grocery stores which cater to wealthy islanders and foreign residents; pulperias in Punta

Gorda are likely to only have low-cost, high-fat/high-cholesterol varieties. The predilection for fried food in Punta Gorda has led to a high incidence of heart disease and blood pressure related disorders. Health education initiatives in recent years have led many residents to adopt healthier diets, but the socioeconomic reality of food costs leaves many people little dietary choice. Because many residents of Punta Gorda have limited means and choices, they are more likely to develop nutrition related illnesses. Thus socioeconomic marginality of Garifuna potentially influences their health and life expectancy.

Socioeconomic Status

In order to gauge relative socioeconomic status per household, and thus per household of each fisher, this study acquired demographic statistics on 343 households from Punta Gorda. Many of these factors, such as household size, number of bedrooms, the presence of plumbing, the water source, tenancy status, house construction, education, and family medical history, had already been recorded during a community health survey conducted by Doc Polo Galindo clinic. In order to construct a more complete scale, I revisited each household to acquire additional measurements such as discussed by Weller (1998), for example, the presence of electricity, a television, gas oven, stereo, bicycle, boats and vehicles. In addition, I confirmed the household size, their average monthly income, educational achievement, and I recorded the GPS coordinates for their house.

For all of these measurements, I devised a dichotomous coding system based on the presence or absence of each criterion. Then I used Guttmann scaling in Anthropac to

determine which criteria were the best indicators of relative socioeconomic status and would produce a coefficient of reproducibility greater than 0.90. Six items, including the presence of electricity, presence of indoor plumbing, ownership of a stereo system, television, refrigerator, and vehicle were the best indicators and produced a coefficient of reproducibility of 0.925. The resulting scale (see Figure 4.12) ranks each household into one of seven categories: households with a score of zero were labeled "Very Poor", while households with a score of 6 were labeled "Very Rich", households with scores of 1 through 5 were labeled "Poor", "Lower Middle Class", "Middle Class", "Upper Middle Class", and "Rich". It is important to consider that these labels are entirely relative to the population of Punta Gorda and do not compare Punta Gorda to outside communities. Thus a household labeled "Rich" may still be considered very poor in comparison to households located elsewhere.

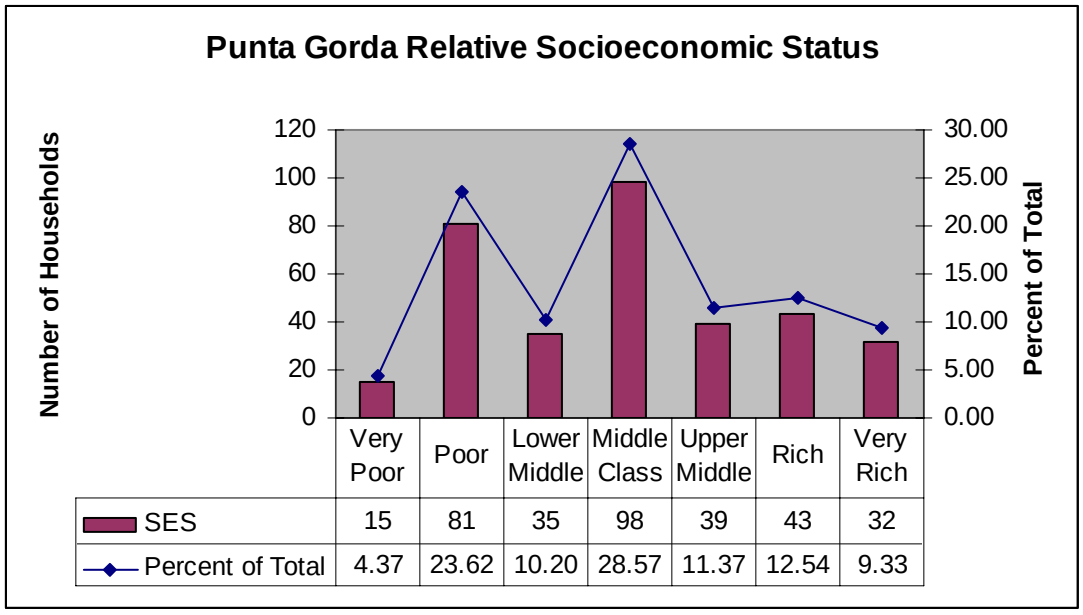

Figure 4.12 Punta Gorda Relative Socioeconomic Status

Two-thirds of all households in Punta Gorda have a socioeconomic status that is "Middle Class" or below. Only 9% of households could be considered "Very Rich". It is interesting to note that reported income was not one of the best indicators of socioeconomic status, perhaps because survey respondents were not entirely truthful about their income or because their reported income did not accurately reflect the types of material items that were present in their household.

In assessing the poverty level of Punta Gorda, it is important to distinguish between poverty and relative poverty. Honduras as a whole is a very poor country, where poverty runs rampant. The Bay Islands, however, are the wealthiest department in Honduras and, on average, have higher standards of living than other portions of the country. Punta Gorda is one of the poorest communities on the island. Despite having somewhat higher incomes on Roatan, it is an island and all resources are imported. As a result, nearly all commodities are more expensive on Roatan than on the mainland. Many people migrant to the Bay Islands because they hear about higher wages, but then are disappointed when they realize that their higher earnings are rapidly consumed by higher prices.

Contemporary Development in Punta Gorda

In the last thirty years, the most noticeable change in Punta Gorda is construction of a road. Connected to the main highway on the ridge, which gives access to Oak Ridge and French Harbour, Punta Gorda's road has two entrances at Barrio Cañabraval and Barrio Iguana and runs nearly a mile, linking all the barrios of the village. Although

construction of a road brought Punta Gorda easy access to other island communities, which is of potential commercial benefit, it has several drawbacks. Before the road was constructed, Punta Gorda had an attractive sandy beach upon which many people had houses, champas, and groves of coconut trees. During the construction process, tons of gravel and clay were trucked in to build a roadbed of sufficient height so as to avoid all but the largest swells from the sea. Bridges or culverts were constructed at six streams and significant amounts of grading took place on certain hillsides. Periodically, after run-off from winter storms and wear from traffic tear up the road, heavy machinery arrives to even out the potholes, spread new gravel, and spray a coating of oil to give a hard-packed, dust-free surface.

Unfortunately Punta Gorda's road caused increased run-off into the lagoon and coral reef and has contributed to asthma problems among the population. During winter storms, one can witness large plumes of sediment washing into the sea. Over many years, this has caused significant amount of sedimentation in the turtle grass lagoon. Layers of sediment in the lagoon damage the turtle grasses and the habitat they provide for smaller fish, conch, and other marine organisms. Increased sediment also has negative effects on the reef ecosystem by reducing the dissolved oxygen content in the water. The amount of oxygen present in water is related the amount of gases and other particulates that can be to the dissolved into the water (Iversen 1996: 14). As sediment uses up more space available for dissolved substances in water, the amount of oxygen that can be held by water decreases. Because many reef organisms depend on oxygen for survival, any reduction of it diminishes the ability of the reef ecosystem to support life. When asked about environmental changes in Punta Gorda, one resident stated that,

"before the road, the lagoon used to be four feet deeper." Although his estimation of the depth change may not be entirely realistic, his message is clear: that the road has significantly altered the local environment.

During dry summer months, the unpaved road can get extremely dusty. Sometimes, when trade winds kick up a strong breeze, pedestrians have to shield their face from the dust and debris. When a car speeds by, people along the side of the road turn their backs in a vain attempt to avoid choking dust. Airborne particulate pollution has significant effects on schoolchildren in Punta Gorda. Children sometimes have to walk a considerable distance to reach school and are consequentially exposed to significant amounts of dust. As a result, many children have chronic respiratory problems such as asthma and acute respiratory illnesses, such as the common cold, are frequent. At one point during my household survey, I had an opportunity to talk to the local doctor. Though he works for the state-run clinic in Oak Ridge, he lives in Punta Gorda with his family. When I asked him about some of the major health issues facing Punta Gorda, he responded, "there are plenty asthmatics here in the village because of the dust and the people burning [their garbage]." In an effort to keep the dust down, residents will throw water on the road or, when conditions get unbearable, they will pour on oil. Oil is a temporary solution with severe consequences for the maritime environment. If oil residue runs off into the sea, it contaminates the water with harmful substances that present danger to the reef ecosystem and, if present in sufficient quantities, can make local seafood inedible.

Perhaps the second most notable recent development in Punta Gorda is the construction of an artificial beach. Ever since the road was built on top of and largely

destroyed Punta Gorda's original beach, the community had been left without an outdoor gathering area by the water's edge. In 2003, the Municipalidad of Jose Santos Guardiola decided to invest in an artificial beach in Punta Gorda in order to create more opportunities for tourism. For about six months, a dredge barge mined sand from the lagoon, dumping it on the shore. The dredge floated about fifteen feet off shore and extracted sand from that location. It would then sling the sand toward the waterline in order to expand the existing beach. Then, bulldozers were brought in to flatten the dredged sand into a broad beach. The final step in beach construction was to bring in attractive white sand from other areas of the island to cover the drab grey sand that had been dredged up from in front of Punta Gorda. The original plan was to build the beach along the entire shore of Punta Gorda. Somewhere along the way, however, funds dried up and only the centrally located barrios of Jali and Lagarto have finished beaches. In areas where the beach was never finished, sand is slowly washing back out to sea and filling in the void left by the dredging process. The action of dredging sand created a massive disturbance to the lagoon ecosystem. It destroyed habitat areas immediately near the waterline and created large plumes of sediment which reduced the amount of dissolved oxygen available to marine species living in the lagoon.

An additional recent development in Punta Gorda is the construction of the Clinica Doc Polo Galindo. The clinic has a well-stocked pharmacy, modern equipment in the examining rooms, and the capacity to handle many types of medical needs, from dentistry to minor surgery. The only thing the clinic lacks is a full medical staff, having only one full-time doctor and two nurses. In addition to diet and health education

programs, which were discussed previously, the clinic is responsible for increasing awareness about HIV/AIDS in Punta Gorda.

HIV/AIDS is rapidly spreading in Honduras and is quickly reaching epidemic proportions. Perhaps due to their traditional sexual practices including infidelity and transient partnerships, lack of education about sexually transmitted diseases, and insufficient use of prophylactics, Garifuna communities are being particularly hard hit by the AIDS crisis. Although information on HIV/AIDS statistics in Punta Gorda is confidential, one Garifuna nurse who works at the clinic said, "that in a few years you will start to see a difference in the community." During 2003, at least four individuals in Punta Gorda died from AIDS related complications; a death rate startlingly high for a village of only 1,750. Because of their impoverished situation, few HIV patients are able to afford life-saving medicines (i.e. protease inhibitors) that might allow them to live longer.

Summary

This chapter has demonstrated how the Garifuna community of Punta Gorda is socially, economically, and politically marginal. Overall, Punta Gorda can be characterized as a highly impoverished community, based on numbers of people who have no access to basic services. Widespread poverty is, in part, a consequence of lack of opportunities for education and limited subsistence and economic options. Poverty has effects on Punta Gorda's health and nutrition and on their resource use practices. Other

consequences related to poverty and the marginal sociocultural environment it creates can be seen in changes in language and ritual cultural in Punta Gorda.

Due to the impoverished state of eastern Roatan, and Punta Gorda in particular, there is no access to public high schools; which leaves Garifuna without sufficient education to effectively compete for employment. Unfortunately, education at private high schools is often out of reach for families with financial burdens that are already too high. A regrettable side-effect of the local educational process is that it encourages younger generations to learn Spanish, to the detriment of their Garifuna language skills. This raises the prospect that further cultural loss could take place, especially if young people abandon their native language entirely. On the other hand, Spanish education could be seen as an effort to incorporate Garifuna into mainstream Honduran society (but at the cost of an important aspect of their culture).

Poverty in Punta Gorda is associated with recent change in subsistence patterns; whereas Garifuna historically grew or caught most of their food, they are now almost entirely dependent upon purchased goods. As they shifted out of their traditional economy, people from Punta Gorda began to work as laborers in various occupations, primarily fishing. Their income from employment outside the community allowed Punta Gordans to purchase foodstuffs, but reduced their ability to produce their own subsistence. As happens in many cases of transitions to capitalist economies, workers enter the market with their labor by their own choice, but then they are forced to remain in the market out of necessity (Dore 2006). As a consequence of their entrance into local labor markets and their continuing tenure in them, people from Punta Gorda have been

thrown into dependency upon wage labor; a vulnerable and marginal economic position which makes it easy to exploit their labor.

Change in subsistence patterns have been associated with developing health issues, such as hypertension, heart disease, and diabetes. Not only can these health concerns have a direct financial burden (i.e. cost of medication); they can result in a loss of potential production, reducing a person's ability to work in certain occupations. These diseases are preventable, but some aspects of socioeconomic status in Punta Gorda prevent them from making wise nutritional choices. Other major health concerns in Punta Gorda include HIV. As this devastating disease spreads, in part due to lack of education, Garifuna communities are being particularly hard hit. Not only is this a major economic cost for Garifuna communities, such as Punta Gorda, but it also has significant social consequences because of the strong social stigma attached to HIV. All of these health issues are symptoms of Punta Gorda's marginal socioeconomic position and also contribute to the community's marginality due to social and economic costs.

Ritual culture among Garifuna in Punta Gorda is steadily being eroded by cultural change and exploitation. Traditional Garifuna spiritual beliefs in Punta Gorda have been almost completely suppressed by Christian influences; causing the community to lose important rituals that have valuable social functions (i.e. Dugu). Another important ritual, Garifuna dance, is being sold to tourists, but Garifuna dancers receive only a small percentage of the earnings. As young people lose interest in the Garifuna language (which is necessary for singing during dances), they do not appreciate the full meaning of Garifuna dance; perhaps the dances are being cheapen by their commodification. The diminishment of meaning underlying Garifuna spirituality and rituals in Punta Gorda is

another sign of the how their culture is positioned on the margin. Traditional culture has become less practiced by people in Punta Gorda and it has been devalued by its sale to tourists. Instead of maintaining cultural traditions of the Garifuna, many residents of Punta Gorda, especially the younger generations, appear to be abandoning their own marginal culture in favor of mainstream cultures.

Punta Gorda has witnessed more than its fair share of environmental degradation. Because Garifuna residents of Punta Gorda still make much of their living from the local environment, ecological decline has major economic consequences. As their resources become increasingly marginal, the socioeconomic position of the people of Punta Gorda also becomes more marginal. Environmental degradation has resulted from construction of a road and an artificial beach, both of which have led to increased sedimentation into the reef, potentially killing coral, fish, and other marine life. Punta Gorda's environment has also been affected by higher levels of population and concomitant increased levels of pollution from household waste and garbage.

It is sometimes difficult to define a culture as marginal, but the case of the Garifuna of Punta Gorda appears to be a clear-cut case of social, economic, and political marginality. As a minority ethnic group in Honduras (and the Bay Islands), Garifuna have historically suffered discrimination that barred them from many social, economic, and political opportunities. Since their arrival from St. Vincent in the late eighteenth century, Garifuna have maintained separate communities from the rest of Honduran society and have relied on their traditional subsistence practices for survival. As Honduras' economy modernized, Garifuna fishers were incorporated into wage labor occupations and their subsistence practices changed to rely on purchased goods.

Population growth, however, has led to more competition for jobs and many Garifuna from Punta Gorda have been displaced from employment, forcing them to use their local resources. Those people from Punta Gorda who are sufficiently advantaged or talented often leave the community permanently or semi-permanently; creating a local brain drain. Overall, Garifuna of Punta Gorda have not received many benefits from modernization; instead they have been anchored to their traditional village and way of life, some aspects of which (such as resource use) no longer meet the people's needs in a sustainable fashion.

CHAPTER FIVE

FISHING PRACTICES IN PUNTA GORDA:

TRADITION AND CHANGE

> *My only kind of work is I work on the sea…fishing…diving…fish pots. That's the only work I did in my life. I start maybe plenty years ago…I don't even remember. I was raised up from 1947 and I was doing that from time I was young and I continue doing it, right until now. I have a wife and four kids and I mind them off of that…off of fishing.* – Garifuna fisher from Punta Gorda recorded in 2003

Garifuna Fishing in the Past

Until the mid twentieth century, Garifuna fishers in Punta Gorda employed simple fishing technology and used traditional fishing methods, such as jig-line fishing, spearing fish from shore, and diving for conchs. Jig-line fishing or hand line fishing involved the use of cotton line held directly in the hand. Fishers used metal hooks and weights that they had acquired from outside the community, but they made floats and fishing buoys from natural materials. Spearing fish from shore was an easy process for Punta Gorda fishers; they would walk along rocky areas or shoals in shallow water until they spotted their prey. Diving for conch was practiced without the use of diving aids, but because of the prevalence of conch in the past, unaided collection was not a problem. The most widely used fishing strategy was jig-line fishing from small wooden *cayucos* or dories – small dugout canoes around eight to twelve feet in length. In the past, Garifuna fishers from Punta Gorda would make their own dories, but years of deforestation on Roatan has

left few trees large enough to serve as a dory; now Garifuna fishers obtain dories from mainland fishers.

Based on several different interviews in which my informants provided excellent descriptions of how to go about jig-line fishing, I was able to construct a vignette of a traditional Garifuna fisher's average day: The fisher got up about two hours before dawn, to prepare to go fishing. He had no trouble getting up because of his habit of rising early and besides, the roosters began to crow by that time in the morning. Taking coffee and food for the journey, the fisher set out in his dory alone. Using the stars and coastal topography for guidance, he paddled through the reef to his favored fishing spot, arriving there about an hour before sunrise (around 4:00). It was important to arrive to the fishing location at dawn because fish are more active when the dim morning light provides many protective shadows. Leaving early in the morning was not without risk because the reef can be a dangerous place for a small dory. One elderly Garifuna man described to me how he goes about fishing:

> [Fishers] get up at 2:30 and drink their coffee and carry their coffee and go on. And they be back [at] 10:00, 11:00 to 12:30. I go fishing about six o'clock…five thirty to six….because I live kind of far from the beach and because a man has got to see his way when he's going. Because you got that reef there and a man's got to look at the reef first and know definitely what part you going through, because that reef is rough, there are some parts you can't pass through. You got to look at what part you can go through.

This particular fisher was about 73 when I interviewed him. Because he claimed his eyes were poor and he was not entirely confident in his ability to spot channels through the reef at night, he no longer left in complete darkness to go fishing. An additional reason he did not leave early was because he lived in Invacíon, located on a hill away from the beach. During the time I interviewed this fisher, the path down the hill was extremely

treacherous, with deep erosion gullies on either side of the footpath making it dangerous to traverse at night. I know well from my own experience: when trying to walk up the hill to my house in Invacíon on a moonless night, I took a misstep and fell into one of the gullies. Thankfully, I suffered no serious injury, but my pants ripped in several places.

When the fisher reached his fishing spot, he would first fish with a cast net to catch sprats or other non-edible fish for bait. Or he may have brought bait with him that he had caught the night before, such as land crabs that live near mangroves or bits of conch cut into small pieces. Then he would bait a line that had several hooks about four inches apart. If the line only had two hooks, the fisher would only put bait on the top hook so that when fish took the bait the "bottom one catches the fish in the gut." One fisher from Punta Gorda described some of the challenges involved in fishing with hand lines:

> [With] line, you got to have a special bait to get a special fish and you got to know the time to go fishing before you try to go look and you got to know the place…what part you going to throw your line and know the rock. Sometimes you use an anchor [a weight] for the line, maybe half a pound or one quarter because the currents go through and when its rough you can't go to the deep water. [Then] you have to go look for small fish, you got to be lucky to catch a big fish there, anywhere there you can get a little barra [barracuda] on the tow line. Use a sprat or parrot[fish] meat or grunt meat to catch a barra…[it is a] smart fish, got life….like a yellowtail…

The fisher used different sized hooks, depending on the target species and how deep he wanted to fish. For some fish he would set his line for 40 to 55 fathoms, but for deep water species such as red fish (black-fin snapper) he would fish at 170 fathoms. Fishing lines were held in his hands and without aid of rod or reel he would haul the fish into the dory. For larger, aggressive fish, such as barracuda, it was necessary to club its head to kill it once it was in the dory. Failure to do so could result in serious injury as the

fish was flopping around in the dory and trying to bite the fisher. Sometimes the fisher would use multiple lines, holding them in his feet until he felt a bite. One Punta Gorda fisher told me that Garifuna fishers did not use anchors, but because their dories usually did not drift much on calm days they were able fish effectively in deep water:

> We don't use anchor….but that's why I don't go fishing right now, because the breeze blows a little hard and then you start drifting…when you drifting its not the same way. When you are in one place, your line can go down to the bottom, but when you are drifting it doesn't go down.

Because Punta Gorda fishers did not use anchors, they were limited to fishing on days when the weather was calm and there was no current. Anchors would not have been feasible to use in a small dory because they added weight and wasted space and, on rough days at sea, using an anchor could cause a dory to capsize. In general, weather was a major limiting factor for fishers from Punta Gorda. Because they fished out of small boats, they had to wait for good days to go fishing. One fisher described some of the problems related to weather:

> Sometimes here we have some bad current running here…strong current…sometimes going to the east or to the west. If you're having a good weather…if you catch a good weather here and the fish bite you can catch a lot of fish. Plenty fish…when I say plenty fish, I go out and get ten, seven, eight, nine barras, maybe I catch one or two tuna, a kingfish, a yellowtail, some deep-water fish, you talking plenty of fish. But then the weather on this island…the currents always be strong…strong current. Maybe we get a fishing good one time a week…after that, current. Got a lot of breeze…we don't go fishing then. When it's time we got to look for a little chance to go fishing behind that reef…cause we get bad, bad, bad weather…outside [of the reef] here gets bad.

After a Punta Gorda fisher had hooked a particularly large or strong fish, he would use floats in order to fight the fish:

> We use this [buoy] for big fish. When the buoy goes down, it comes back

> up. When it goes down twice, it can't go down again. That means the fish is dead. When he gets tired, you can pull. When you see he wants to go again, you can tie the next one.

After several hours of fishing, the fisher would begin his return to Punta Gorda and, if the wind was favorable, he could deploy a small sail. One fisher said, "sometimes there's not no breeze, we got to paddle up and paddle all the way down, but when there's breeze, we paddle up and sail back down." With his hands freed from paddling, the fisher was provided with an additional fishing opportunity of dragging a troll line (see Figure 5.1).

Figure 5.1 Garifuna fisher returning to Punta Gorda by sail

To supplement deep-sea fishing, Garifuna would spear fish from shoals in the lagoon in front of Punta Gorda. Fishers would stand on the shoals or wade into the lagoon and spear fish as they swam by. One of my primary informants described how:

> Spear fishing just with eyesight, not [while diving] in the water, just having a long stick and you see the fish and throw the stick on it [while] standing in the water. Okay, and you could see a grouper fish going there and you have a stick with a harpoon and you throw it. The spear was the first spear fishing we learned, then we get the spear gun.

This method of resource extraction typically focused on species of ground fish such as flounder and should be distinguished from contemporary spear fishing practices where fishers dive with homemade spear guns

In the past, Garifuna fishermen also targeted shellfish, such as lobster and conch, in their inshore fishery. In coral rocks located close to shore, people from Punta Gorda were able to easily collect lobster merely by grabbing their antennae. According to one fisherman, thirty years ago you could catch lobster by hand close to the shore in Punta Gorda:

> They used to catch lobster through the dory. They used to have something to tickle it and snare it, snare it! Or they goes in the night with flashlight and catch it right on the bar…right on the beach here…

When a flashlight is shined into the water, lobsters eyes create a reflection of greenish light, thus enabling Punta Gordans to target and catch them by hand. In addition to plentiful lobster, conchs were so abundant in the beds of sea grass less than 200 feet from shore that they could be collected without the aid of diving masks. One fisherman mentioned that he used to use conch as bait for jig-line fishing, but overfishing and local ecological degradation has left the area largely devoid of conch: "Most time the fisherman here before used to fish for conch, for bait, but now they can't find no conch…" One fisherman told me how he used to collect conch from the lagoon and sell them by the boat load in La Ceiba (on the north coast of Honduras):

> You know what the conch used to cost when I was fishing and I used to fish? One nickel…five cents a pound! You know what conch costs right here in Punta Gorda? 40 Lempira a pound! It's a big difference you know. And [with] big conch it only takes about two conch to get a pound. You used to have conch pens and lobster pens. You could go out dive conch and leave them there [in the pen] until next month. And when you ready to go Ceiba, you would go in the dory from here to Sandy Bay and catch a horse to Coxen Hole. It's hard you know…to

> catch a boat in Coxen Hole…sometimes you get to Coxen Hole at nine or ten and get the boat to Ceiba. I used to go there every other week when I used sell conch. Sometimes I used to sell something, sometimes not.

Now that conch is less prevalent because of overfishing and because it was recently declared contraband due to its status as an endangered species, it is much more expensive.

Garifuna fishermen also used fish pots (or traps) made of wire or *caña brava* (wild cane), which were baited, placed inshore of the reef, and marked with a buoy (see Figure 5.2). Fish pots were advantageous because they were easy to maintain after being set out. Traps are still used by some fishers in contemporary Punta Gorda. As one fisher related: "I have some pots, I done leave them all around. I just wake up in the morning and go and pull them."

Figure 5.2 Punta Gorda trap fisher tending his fish pot

Fishermen from Punta Gorda realize that the occupation of fishing is filled with danger. Sometimes a fisherman simply disappears after his dory sinks and he is unable to make it back to shore. Many of my informants enjoyed telling me stories about the

dangers of fishing. One fisherman told me of his encounters with dangerous sea creatures:

> A shark attacked me one time…up off the channel up here. A spear snapped on a snapper fish, and [the shark] went [whoosh] across my harpoon…he just needed a chance to cut me up too. And I come from there one time [when] I was two to three years diving. One sea snake [an eel] come for me…and rushed me three time…and he come for me and bite me right here. But that was when I started diving. I was fifteen years then, now I'm more experienced in diving...now before I shoot I look around. But when I had just started I was crazy punk…I knew I had to spear something. Before I look to shoot a fish or something, I look around good…

Another fisherman considered Marlin to be a "bad" fish:

> When you hook one…fly fish [sail fish]…he just come up…out…when he get up, you start pulling…you open his veins. If he catch you [with his bill], you is gone. If that get onto your dory he go right through. So all kind of bad fishes out in the sea there. There is one kind of fish they call there, Blue Marlin. I not catch him yet though…easy to catch…but he want to bite your dory…to eat your dory. So I say that everything is in the same way…just like on the sea is how it is on the land. There is all kind of bad animals…

Barracuda are another kind of fish that can be dangerous. They are attracted to shiny objects in the sea, most likely confusing them for the glint of light off a fish's scales. So if a person dives with a watch or jewelry, they are at higher risk of getting attacked by a barracuda. Barracuda are also dangerous to eat because they are sometimes poisonous. One man described the effects of eating poisoned fish:

> Barra[cuda]…it's kinda dangerous, but I like it. I done get poison by it one time…when I was small boy. That ugly…look like somebody all junky with needle. You can't stay in the hot sun cause you got to be stretching your body. But I was lucky…I was small…I jump out a window, my daddy had to go behind me that same night…who knows what I was doing. You can't eat…just drinking lime. And to take that [poison] off you, you got to drink strong, strong coffee without sugar. You got to drink it several times to start vomiting. Poison barra is bad…people say [the barra] eat one kind of grass, they call it seaweed, sometimes they go eat some of this, that's poison…

Despite the risk of eating poison barracuda, people in Punta Gorda enjoy consuming it because of its flavorful meat. One man told me how he makes sure that the barracuda is not poisoned:

> When I used to fishing, when I catch any barra, I look for a nest of ants…white ants. I cut a piece of the barra so I get him near the nest. So I put it there…get something to cure it…I leave it there. Okay two-three hours, check it out. If you go there and the ants are still on it, you could eat it, but if you go there don't see no ants on it…don't eat it….its poisonous. Ants not a fool…

Technological Change in Punta Gorda's Fishery

Recent acquisition of improved fishing technology has enabled Garifuna fishers to more effectively exploit local maritime resources. Some of these new technologies are fairly simple, but still provide an advantage because of improved durability. For example, Garifuna fishers traditionally used cotton fishing lines when they were jig-line fishing, but they were prone to snap; with the advent of plastic fishing line, fishers are less likely to lose their catch due to a broken line. Whereas in the past, fishermen would use floats made of natural materials (i.e. coconuts) to cope with the strength of large fish, they now use Styrofoam or plastic floats because they provide more buoyancy and are more durable. Garifuna fishers in Punta Gorda still use traditional fishing techniques, but the difference is that they are using modern materials. One fisher put in quite nicely:

> Garifuna fisherman never did change his way of fishing. What changed is the materials of fishing, because before times, they used to use cotton lines. I don't see no more cotton line, last time I seen cotton lines was maybe '91. See me…I ain't got no cotton line.

The biggest change in Garifuna fishing is the growth of diving. As one fisher mentioned:

> The system [of fishing] in use thirty years aback, it's still in use here…only thing is thirty years aback, there was more fishermen than divers. There were very fewer divers…not like it is now the divers diving busy…crazy…there more divers now than fishermen.

Another fisherman felt that the presence of more fishers and divers in general was the most noticeable change in Punta Gorda's fishery:

> I've been fishing from nine years old…more than forty years. From time I come to knowledge there's been the same thing going on here, fishing. It's a little different. [In] them days, there wasn't much people around here, it just be a few people fishing…just a few persons to fishing around here. There wasn't much people that used to be living here in them times, but now it's a big population you know. There's a lot of people that goes out [fishing]. [In] that time, maybe one or two men used to dive, another two used to fishing, but like I tell you, there wasn't much people who used to live here in them time. But it's way different now, the place is way different.

With more fishers fishing in Punta Gorda and people using new fishing methods such as diving, most fishers that I talked to who were over the age of thirty-five had noticed considerable change in the local fishery. In contrast, those fishers who were younger did not appear to be as cognizant of changes in the fishery perhaps because it is not in their living memory. .

There is an important distinction between fishing methods in Punta Gorda's fishery. Among Garifuna fishers, fishing (with line, traps, and nets) is distinguished from diving (using spear guns or hook sticks). When I first started my fieldwork, I did not understand this distinction and this led to some confusion in my initial interviews. In the beginning of my research, I referred to all forms of fishing as "fishing" and used the word "fisherman" for both divers and line fishermen. Eventually one of my informants set me straight:

> Hand fishing is different from diving. Sometimes you go fishing in shallow water, sometimes you go fishing in deep water. When you go fishing in deep water, you just put a sinker on that [line] and send that down, but when you fishing in the shallow water, you throw the line like that. When diving, we use fins, snorkel, and things like that and the gun to shoot the fish.

With the use of mask, snorkel, fins, and spear guns, Garifuna were able to increase their exploitation of the maritime environment by taking advantage of resource found around the coral reef (See Figure 5.3). Without a mask, diving is difficult because the sting of salt water in the eyes tends to limit vision, but with the aid of eye protection, the reef is transformed into a beautiful environment that can provide a bounty of seafood product such as fish, lobster, crab, and conch. When diving, Garifuna fishers use spear guns which are usually home-made: the stock of the spear gun is fashioned from a piece of wood, cut to resemble a pistol with a long barrel. A piece of rubber is attached to the stock to provide power for the spear. The spear itself is usually made from a piece of reinforcing bar (used in concrete construction) that is sharpened on the striking end and is notched in two places on the blunt end: one on the underside of the bar about four inches from the end for the trigger mechanism, the other on the top side about a quarter of an inch from the end for a place to attach the rubber "propellant". In most homemade spear guns there is no line attached to the spear. Thus a diver must be careful not to lose their spear. There is also an element of risk for divers who use spear guns without attached lines:

> [Spear guns are] really good, but sometimes they would be dangerous in one spot. Dangerous when you are out diving because you put the spear gun and your partner is over there. You could [let it] slip out and you know…aside of that they good….

Figure 5.3 Garifuna diver spear fishing

Many fishermen prefer to dive rather than to fish with line because it is perceived as a faster way to accumulate product. One diver justified his strategy as a matter of time:

> For me it is better diving. That is if I a fishermen, I'd rather fishing, but I been diving for long time, [so] I'd rather diving. I ain't got no patience to be sitting down in dory waiting the fish until he bite…I ain't got no patience for that…

Another diver explained that spear fishing is better because it gives individuals more opportunities to catch different types of species:

> The best method to catch fish....catch faster fish is to go spear fishing. But you get smaller fish when you're spear fishing. You take a little more longer jig fishing than spear fishing. Spear fishing is from maybe eight o'clock in the morning you start to fish, by the time of eleven o'clock, you got a bunch of fish, a whole lot of fish that you could come home and feed your family, and plus you have two opportunities. You could fish lobster and you could fish for fish with spear fish. So you have two opportunities while you're spear fishing. Most of the people commence spear fishing because we get two opportunities. They get

> lobster plus they get fish. They could feed their family and they could sell the lobster and help feed their family or help their needs.

Some divers also believe that spear fishing is a more reliable method of fishing than line fishing. The key difference is that when spear fishing, a diver is "hunting" for his product and using his skill, while when waiting for a fish to bite, there is more luck involved. One diver explained that diving is the better method when there is bad weather or strong current:

> Fishing is good too, but spearing is quicker. Sometime I don't catch nothing because of the current…go diving and it be bad enough you not catch but two fish [but] I needs to eat right….but to wait there sitting there…sometime they just steal the bait and go on picking, you know what I mean…that's why I don't got the patience for fishing, I'd rather go diving…

Some fishers also use hook sticks to snag lobster, but spear guns are preferred by most divers. Hook sticks allow divers to catch live lobster, but require more skill than a spear gun. With a hook, divers must snag the lobster where its tail meets its carapace. Using a hook stick can also enable divers to catch multiple lobsters from the same location, while a spear gun might scare the others away. One diver explained the advantages of his hook stick:

> When I go diving, I have my special place to go diving. I go what part I know the lobster were. When I find the lobster there, I don't touch nothing, not even the spear gun I use…I have my hook stick. [With] one piece of rubber, one piece of rock, I tie the hook there. If I find twelve lobster in one hole, if I have the hook I can take them all. If I find ten big one there and five small ones, I going to take the small one first, and the mother come with the small ones, what part they going. I just wait for the whole family, everyone come, sometimes I get three, four, or five before they go deeper. At fifteen feet or thirty feet, I could get you lobster before you take breath…

Divers must move quickly in order catch lobster with a hook. With a spear gun, the lobster is killed, but divers are more likely to catch their target. Unlike Red lobster native to waters off the Northeastern U.S., Spiny lobster do not have to be kept alive until moments before they are consumed, so it does not matter a great deal to fishers that they kill their target. An unfortunate side effect to the tendency to use spear guns instead of hook sticks is that it is difficult to distinguish female lobsters that have eggs. When egg-laden females are killed with a spear, it lowers the chances of having large numbers of lobster in the future.

Using fins, Garifuna fishermen can free dive to great depths, spear a lobster, and then return to the surface with their catch. One spear fisher told me that most divers can free dive to 54 feet (9 fathoms), while some can go even deeper:

> We don't use special tank. The most we go is 9 fathoms. More people here go deeper than me. The real deeper that people go here is 11 fathoms, free-diving. I don't want to force myself there, I know I could make it, but I don't want to force myself dead…

The depth to which a free diver can descend depends on their physical stamina and their ability to hold their breath for minutes at a time. Free divers say that they prefer to fish in depths of around thirty feet because they can maximize their search time for lobsters in holes underneath coral and rock. Lobsters are then processed by the individual fisherman; he cuts out their tail, sells it and keeps the head for dinner. The head is not favored for restaurant consumption so it provides an excellent protein supplement for families of the fishermen.

Garifuna fishers rarely use lobster traps in their own waters because spear fishing is viewed as more effective; however some fishers do use fish pots. Because many

Garifuna fishers work part-time on commercial fishing vessels, it is unlikely that they lack the knowledge to construct traps. Nor is capital investment a limiting factor, given that traps can be constructed with readily available natural materials. It is more likely that fishers do not want to abandon other methods of fishing. One informant expressed reluctance to use traps because "divers will steal the product". Because spear-fishing is a highly mobile and quick method of fishing, there is a perception that the return on investment of fishing effort is higher. Another possible reason that Punta Gorda fishers do not use lobster traps is that the local conditions are not suitable for their use, as one fisher told me:

> Here we can't set no trap for lobster, so we got to diving…[we don't set traps for lobster] cause they don't run here like that, like other places. Lobsters over here hide in rock [and] they don't go out. A couple of the fellows here were setting traps for lobster, but they not get one. The problem here is plenty current.

Another recently adopted technology that increases efficiency in the Garifuna fishery is the combustion engine. One informant told me that the fishery had,

> …changed to be modern, in a more modernly way. We run with power boats, some people use the rod and reel, and some people right now are starting to get trolling boats. But we still hang on to the old past way of fishing. Like go with sails and stuff like that…

Most boats in the community that are outfitted with engines use internal diesel motors, however there are a few individuals who possess outboard gasoline motors. Diesel powered dories are more efficient in the long run because of their fuel economy. Because of the higher overhead and large amount of initial capital required, some Punta Gorda fishermen view outboard motor boats as a disadvantage:

> We not decide to get no speedboat…nothing like that. That's too much money to spend. We's a poor people…we work just for the gas…now if it's a diesel engine, we make it.

Using engines, fishermen benefit from increased range and speed, but pay higher costs for oil and gas. Having an engine gives boat owners access to more fishing areas and also enables them to engage in tourism. Motors allow easier access to fishery resources, thus potentially increasing the individual's gain per unit of effort. However, motors could lead to environmental damage because of increased fishing effort and because gasoline and oil leakages.

Isolated fishers in the community have adopted other forms of technology. The use of a small seine net by one fisher enables him to encircle and capture a large number of school fish (such as yellow snapper). The use of nets is not common because of they are illegal in the Bay Islands and there are heavy fines and possible jail time for their use. Seine netting was outlawed because of its potential to have a significant impact on fish populations. As one fisherman pointed out, seine netting can be very destructive to the fishery:

> Seine the one that destroys the most around here, lot of fish. They destroy the most fish around here…it's bad. Kills up everything…seine kills up everything…against the law too. Prohibited…but they still go out there….against the law…

Simply because nets are illegal does not stop all fishers from using them, but the amount of capital investment required does prohibit some Punta Gorda fishers from obtaining nets. One diver explained why nets are not favored, "they's kind of expensive, you know and them people, what they catch, they don't buy them thing." Because the type of fish

usually caught with seine nets are not the type of fish readily marketable, there is little economic justification to use one and run the risk of going to prison.

Garifuna Fishing Territory

Territory is a difficult concept to relate to fishing, but it is an important component of a fisher's overall fishing strategy. Territory delves straight to the core common property issues in maritime environments and relates to the question of whether a resource use system is open-access or has some form of exclusive property rights. Garifuna fishermen from Punta Gorda historically used a large territory of fishing areas, but they claimed that their waters are completely open-access; as one informant put it: "There are lots of fishermen…anyone can be a fisherman." Other fishers say there simply is not enough space to have limited territories. Some fishermen from Punta Gorda did recognize that there is increased entry into Roatan's fishery by immigrants from the mainland:

> More people coming on [to the island] from the coast. They don't belong to here. I belong to the island. Them people from the coast, they come to the island and took over. They come and do all kinds of things. They come and fishing sometimes, but not here…around Coxen Hole, Bonacca, Santa Elena. All those dories, west-side, north side…they not belong to here. Plenty of people…they spear gunning…they not belongs to here…

In spite of the fact that this fisherman resented people who "do not belong" coming to the island and fishing, the open-access nature of Roatan's fishery left him with no recourse to keep people from entering the fishery. Though immigrants to Roatan are not fishing in

Punta Gorda itself, their increased fishing effort no doubt has some effect on the local Garifuna fishery.

The only limit to Garifuna fishing territory was how far an individual could paddle in a day, but some individuals regularly took trips lasting several days. Garifuna fishing territory ranged all along the north coast of Roatan and included nearby islands of Helene, Barbaretta, Morat, and the Pigeon Keys. There was overlap of territory with neighboring Black Creole communities, but not with other Garifuna from the mainland, who have been known to regularly visit the Cayos Cochinos. Garifuna from Punta Gorda do not fish in the Cayos Cochinos because of the significant distance. The open-access nature of the Garifuna fishery allows fishing and diving to continue unabated. There is no major concern to who the fishers are, primarily because there are an abundance of fishers, limited areas amenable to fishing, and no governmental presence. People in Punta Gorda go fishing because the resource is readily available and there are few other subsistence options. As one man put it: "They just go fishing cause they ain't got nothing else to do. When anything else come up better, they leave the fishing and go on to something else…"

A few line fishers did express a bit of resentment toward spear fishers for "scaring the fish away," but no animosities ever developed into conflict or even heated verbal exchanges. One line fisher explained why spear fishing is bad for the local fishery:

> I would say that if I were an authority, I would have done stop these fellows from too much diving. You know why? They sometimes shot at the fish [and] they probably only hit him here around his tail or something and he get off. Then he gone [and] probably later on he dead, he come up and other fish eat him then. The lobster the same way…if they strike a lobster and the lobster get away, she going in the rock and they'll never find her again. But with the line, if he get off the line it not so much a hurt, so he will live again. Probably you'll catch him again tomorrow or day after, but if you shot him [and] if you catch him tomorrow,

> you'd have to cut that bit of wound off him…that be rot. [Divers] catch all kinds from the young one up to the old one…that is too much…you see them [divers] around the reef here everyday. They should done closed this place here, this bank for a couple times more. But neither one of us can tell them nothing because that is their life you see…

One diver I talked to recognized the problems with diving, such as the potential for leaving injured fish, and why line fishers are critical of people who only dive. This particular individual was one of the few people I talked to who had an understanding about the need to conserve local resources, yet he saw no way to accomplish that goal because there are limited economic options available. So despite his understanding, the status quo remains.

> The idea that some people have is that if we stop spear fishing there'd be more fish that comes in the area. Because sometimes we wound the fish and they goes away and die, big fish eat them and they're already filled, and [line fishers] can't catch them anymore because they are filled. Some people, they realize that's the only way we can feed our family and they agree with it. So there's not much conflict, its just that sometimes if you see a person fishing you got to get away, not to go a spear fishing where he's fishing. So it's not a problem in that.

Another meaning of territory is the area where fishers habitually go to fish. In this sense, Garifuna fishers do exhibit territoriality; they frequently fish the waters both east and west of Punta Gorda, from Barbaretta to First Bight. Because of the lower population densities and the presence of extensive reef systems to the east of Punta Gorda, the majority of Garifuna fishers head out in that direction. Most fishers I talked to said that the fishing was better and the catch bigger toward the east. They share many of their fishing territories with fishers from other communities without conflict. A few fishers related the concept of territory to knowledge of good fishing areas acquired

through years of experience; as one informant put it after naming several other fishers: "Only they have territories, but only they know them."

Interestingly, the primary potential for conflict is between fishers and ecotourism. Indeed some fishers from Punta Gorda fear that tourism will provide the impetus to prohibit fishing in traditional fishing grounds:

> Right now, like the tourists now, tourism has not stopped [the fishing] here, but in West End and Sandy Bay you can't fish there. But in Camp Bay and Helene, the tourism has not stopped it there, not yet.

Near Barbaretta are two small keys which lay about two kilometers away. Labeled on maps as the Pigeon Cays, most fishers I interviewed referred to only one of the cays by this name and called the other one, most appropriately, Fisherman's Cay. Essentially an overgrown sandbar, this cay is extremely susceptible to the whims of nature, such as hurricanes, and has no permanent structures thus far. Garifuna fishers have traditionally used Fisherman's Cay as a camp to serve as their base of operations for fishing the adjacent reef. With one of my primary informants, I visited the keys on an overnight fishing trip. While ashore, I was not surprised to discover the remnants of a temporary thatched-roof shelter that was built by previous fishers to visit the Cays.

Garifuna potentially have a legal basis to their claim that these Cays are part of their traditional fishing territory. Under Honduran law, Garifuna have been recognized as an indigenous group, giving them special status for territorial considerations. However, these two pristine cays surrounded by coral reef filled with colorful fish makes a very nice tourist attraction. Already, diving boats bring SCUBA divers to the area and tour boats bring snorkelers and sunbathers to enjoy the cays. It was even rumored that one of the cays was for sale. Certainly the fishing grounds near Barbaretta are an important

resource for Garifuna fishers, but the grounds are also one of the few areas in the Bay Islands where an extensive stretch of reef has not been significantly degraded, and thus are a high priority for environmental protection. Portions of the fishing grounds near Barbaretta are already off-limits for fishers from Punta Gorda. One of my primary informants told me of the dangers associated with fishing in off-limits areas:

> Close to Barbaretta, in certain areas in Barbaretta you cannot fishing. Because they have people...can't name the people in something like this, but they have people that will stop you or shoot after you. That won't shoot you, but they will shoot to run you off. And eventually may up and shoot some people.

Punta Gorda Fishery Survey

During my field investigations in Punta Gorda, I identified 210 individuals who regularly engage in fishing activities (See Table 5.1). Some of these individuals make their living solely off the sea and identified themselves as full-time fishers, while others simply supplement their livelihood with occasional fishing and identified themselves as part-time fishers. I identified these fishers during my house-to-house census, when, among other things, I recorded information on the occupations and work activities of each household. I also recorded whether individuals had a full-time or part-time time commitment to fishing. Fortunately, I began my study during the fishing off-season in March, so I was able to talk to 173 of these fishers. The 37 other fishers I identified in-absentia using information from their wives or family. In most cases they were out of the community; fishing elsewhere or working in merchant marine activities. Had I begun my research in a different month, such as July, I surely would have encountered far fewer

fishermen in the community because many would have signed on to a commercial fishing vessel headed to work the Banks of Honduras.

Table 5.1 General Observations on Punta Gorda's Artisanal Fishery

Barrio	Number of Fishers	% of Total	Number Full-time	Number Part-time	Ratio of Fishers to Population
Cañabraval	65	30.95%	17	48	13.43%
Punta Gorda	26	12.38%	8	18	12.87%
Jali	30	14.29%	9	21	14.29%
Lagarto	26	12.38%	9	17	10.92%
Bo. Iguana	22	10.48%	8	14	10.78%
Bo. Ingles	31	14.76%	7	24	10.51%
Invacíon	10	4.76%	3	7	10.64%
Total	210	100.00%	61	149	12.16%

Of the total 210 fishers identified in Punta Gorda approximately 71% participated in other occupations, such as the commercial fishery, merchant marine, or terrestrial work like construction. Only 29% of fishers identified themselves as full-time artisanal fishers. Of the 61 fishers who identified themselves as having a full-time or near full-time commitment to artisanal fishing, 11 described themselves as divers, 21 described themselves as fishers, and 29 described themselves as *jornaleros* or day-laborers who fish frequently. Because Barrio Cañabraval is the largest settled area in Punta Gorda, it correspondingly had the greatest number of fishers and should not be considered an anomaly because of the seemingly disproportionate numbers of fishers there. Similarly, Invacíon is the smallest community, so even though only ten fishers live there, the colonia is not underrepresented in the number of fishers per total population Geographical distribution of fishers throughout Punta Gorda was fairly even, with a

balanced ratio of fishers to total number of people in each barrio. Only in Jali were there a marginally higher number of fishers in regard to total population.

From my identified population, I selected 65 fishers for in-depth interviews and catch surveys. I selected these fishers using a stratified random selection process differentiated by barrio and by time commitment to fishing. Since roughly 29% of fishers identified themselves as full-time, I determined that my sample should include at least 19 full-time fishers and 46 part-time fishers. In addition, I stratified my sample selection by barrio so that the sample was representative of the proportion of fishers living in each barrio, for example, approximately 31% of Punta Gorda fishers lived in Cañabraval so 20 individuals (31% of 65 total fishers) from that barrio were selected. I excluded the 37 in-absentia fishers from my random selection and then, drew names out of a hat. By stratifying my selection in this manner, I was able to keep constant the percentage of fishers living in each barrio and the percentage of fishers who fish full-time or part-time, while still allowing for random selection. Barrios were defined using traditional boundaries in the community which differentiate barrios based on geographical location.

For Barrio Cañabraval, I interviewed 20 fishers, 6 of whom were identified as full-time fishers and 14 who were part-time fishers. For Barrio Punta Gorda, I interviewed 8 fishers, 2 full-time and 6 part-time. For Jali, I interviewed 9 fishers, 3 full-time and 6 part-time. In Barrio Lagarto, I interviewed 8 fishers, 2 full-time and 6 part-time. In Barrio Iguana, I interviewed 7 fishers, 2 full-time and 5 part-time. From Barrio Ingles, I interviewed 10 fishers, 3 full-time and 7 part-time. And for Invacíon I interviewed 3 fishers, one full-time and 2 part-time.

The catch survey was conducted for ten months, from March 2003 to December 2003 and collected information on amount of time spent fishing and amount of product caught. Fishermen were asked to self-report these data on survey forms which I collected on a weekly basis. Given the wherewithal, it would have been preferable to collect catch data on a daily basis; however three major challenges prevented this. First, the community stretches over two kilometers along the beach making it a daunting prospect for a lone fieldworker to "catch" each fisher everyday, especially since they usually pull up their cayuco near their house after having cleaned their product while floating near shore. When they finally come ashore, fishermen quickly head off to their house. Second, Garifuna fishers do not all arrive back from fishing at the same time; to catch the fishers as they come in, one must remain in the same general vicinity for several hours. Third, when I collected catch surveys, I took the opportunity to converse and build relationships with the fishermen, a process that is not quick!

Keeping these challenges in mind, each week I would rotate between the different barrios, spending one day in each to collect surveys. To simplify fishermen's self-reporting; the types of seafood product that they landed were differentiated into only two categories, lobster and finfish. Because conch, crab, and other types of maritime products not included in the two categories listed above were not caught in significant amounts, no data was collected on them. Unfortunately, self-reporting was an extremely unreliable method for collecting catch data. At best, I was able to record estimates for monthly fishing effort, in terms of days and hours spent fishing, and catch, in terms of total landings. By dividing total catch by fishing effort, I was able to estimate approximate catch per unit effort (CPUE), as a way to quantify differences between

fishers. In retrospect, it would have been advisable to collect other information pertaining to fishing effort, such as the amount of preparation time a fisher spent before a trip, the amount of time and money invested in equipment and maintenance, and the amount of fuel used by motorized boats; however these types of data were not included in my study. Compiled statistics for Punta Gorda fishers and divers are listed in Appendix Two, including information on total seafood landings, average seafood landings differentiated by fishing method, time commitment and type of boat used, average income, and CPUE.

Structure of Punta Gorda Fishery

Within the Garifuna fishery, the population of fishers is divided into year-round artisanal fishers and part-time fishers who spend part of the year working on the commercial fishing boats that leave from neighboring communities on the island. Garifuna participating in the commercial fishing industry usually work as crew, but there are several captains living in the community. Many fishermen from Punta Gorda depend on commercial fishing as their primary income and only use artisanal fishing as a way to sustain themselves during the interval between commercial seasons. When fishers are unable to get work on the commercial boats, it can cause them concern:

> Sometimes I worrying right now…I wanted to go to the [fishing] bank and I didn't get no job. I want to go to the bank. I got the house here, need finishing, need money and I hardly get anything on the sea now. That's one of my worries now too….

During the commercial off-season, many of the unemployed fishers turn to part-time artisanal fishing for their subsistence. One commercial fisherman justified this practice as necessary:

> …some of them they diving, they fishing in different work. Just when the season is closed. When the season opens, everybody go. We don't pass it good, when the season is closed. Because we got to find a different way to live just to sustain the family.

For some of these fishers, the amount of time and effort they are able to commit to artisanal fishing in the local Punta Gorda fishery is limited by access to fishing equipment, such as dories, which they must borrow or rent from other fishers. If fishers do not own a motor dory, they may rent one, but it increases their cost of fishing:

> …they just rent that [a motor dory] they rent it for 200 L. a day, sometimes they not make the same money, sometimes they make more than that, from time they start, they still owing the owner of the dory, but the owner of the dory know when they get, they be fair with him, but they still have a motor dory…

In addition to differences in fishing effort, the Garifuna fishery varies according to fishing method. Many Garifuna fishers focus their fishing effort on high-value product easily obtained through spear-fishing, such as lobster, while others rely on hand lines to target larger fish in deep water.

At first glance at the sample of 65 fishers, there appears to be no significant pattern in choice of fishing method for full-time fishers; of the 19 full-time fishers interviewed, 8 preferred diving and 11 preferred to fish with line (see Figure 5.4). Similarly, among part-time fishers who owned their own boat, there was no significant trend in preference of fishing method, with 11 fishers preferring diving and 15 preferring to fish with line. There was, however, a significant trend in preference of fishing method

among part-time fishers who borrow boats, with 17 preferring to dive and only 3 preferring to fish with line. When age is considered in choice of fishing method, the picture becomes clearer; younger men tend to dive while older men tend to fish. Most of my informants recognized this difference in fishing method. One older fishermen told me: "young boys [and men]…they goes diving…they don't a fishing…they dive for fish and lobster and conch." While a younger diver told me that: "the older people stay with hand fishing."

Using linear regression analysis to compare fishing method (independent variable) to various dependent variables, I found a statistically significant relationship between fishing method and total catch (adjusted R square = 0.55, $p < .0001$). This comparison demonstrates that those fishers who use line generally bring in more total catch than those fishers who dive. There was also a significant relationship between fishing method and CPUE per day (adjusted R square = 0.80, $p < .0001$). Those fishers who use line generally catch more product for each unit of effort expended than do those fishers who dive. The primary reason for the significance of these relationships is that line fishers typically land larger fish that they hook in deep waters while divers are more focused on high value product such as lobster and cannot dive to the depths necessary to catch large fish. In comparing fishing method to other factors, I found that fishing method was not a good predictor of total income or each fisher's socioeconomic status. There was no significant relationship because line fishers catch more in terms of pounds, but their catch of fish is not as valuable as the small amount of lobster divers bring in.

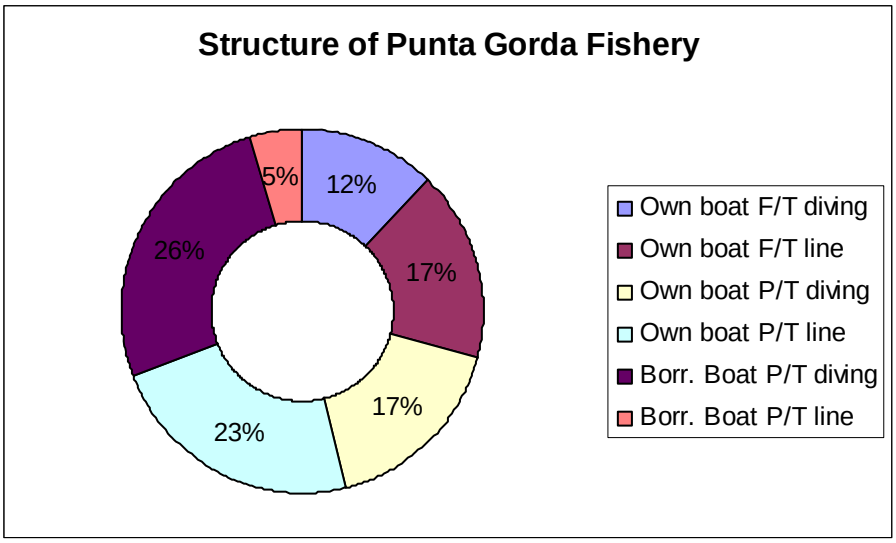

Figure 5.4 Structure of Punta Gorda Fishery

The Garifuna fishers I interviewed varied widely in terms of age, from a youthful 19 to a sagacious 73. The mean age of all Garifuna artisanal fishers is 41 (SD 13.5), with a median age of 39, and a modal age of 29. Interestingly, there is a difference in average age based on time commitment; for part-time fishers it is 39 and for full-time fishers it is 45.8 (see Figure 5.5). There is greater variation in the average age between divers and line fishermen; for the 36 divers interviewed, their average is 32.5, whereas for the 29 line fishers interviewed have an average age of 51.2. The most plausible explanation for this variation is that younger fishers are in better physical condition and can more easily engage in strenuous diving activities. Because diving, as a fishing method, involves repeated free-dives to depths of ten to forty feet, a great deal of stamina is necessary. An additional explanation for age variation in fishing method is that younger fishers are more interested in quickly acquiring product with minimal investment. One old fisherman described that the younger generations are simply not interested in learning to fish with line:

> Things has changed… So those times, the people used to show us…my old man used to show us how to fishing. I try to teach my children….but nah…they get lost, that's the way I call it. There's nothing to getting lost because the new generation's not interested in anymore the learning. But I was interested in the learning that time because I loved it, I love fishing. But the new generation comes now instead of grab one line and go fishing, they'd rather take a spear-gun, get a mask instead of going fishing….that killing Garifuna fishing business. I feel that's all cause nobody wouldn't learn what we learned before.

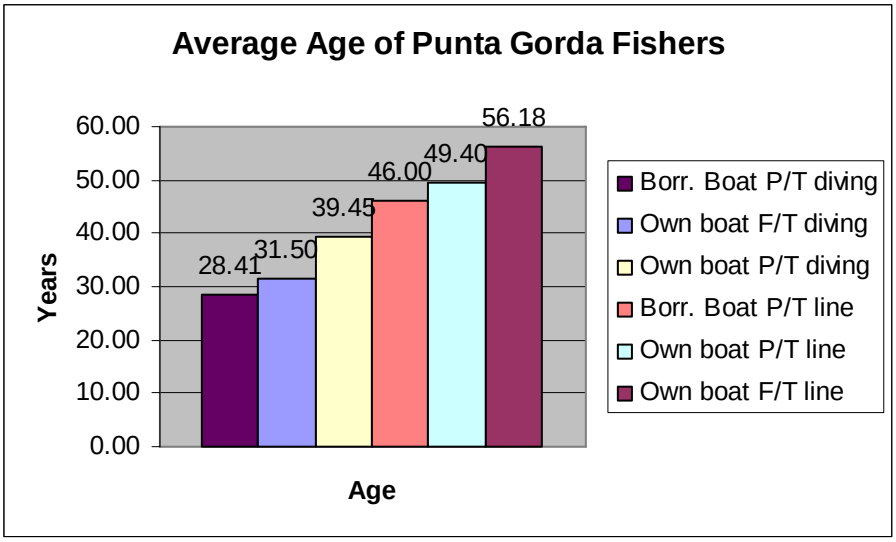

Figure 5.5 Average Age of Punta Gorda Fishers

Another way of demonstrating age differences in the Punta Gorda fishery is to look at a visual representation of fishing methods across age categories. In Figure 5.6, a line graph demonstrates the age distribution of the all individuals fishing in Punta Gorda. In addition, the graph represents the distribution of all spear fishers and line fishers and also shows all individuals who participate in the commercial fishing industry (regardless of artisanal fishing method). Notice that spear fishers are generally younger than line fishers, while commercial fishers loosely reflect the curvature of the total population of fishers. Once again, the dichotomous nature of the fishery is evident in terms of variation

by age and fishing method; however the fishery is largely uniform in terms of participation in commercial fishing.

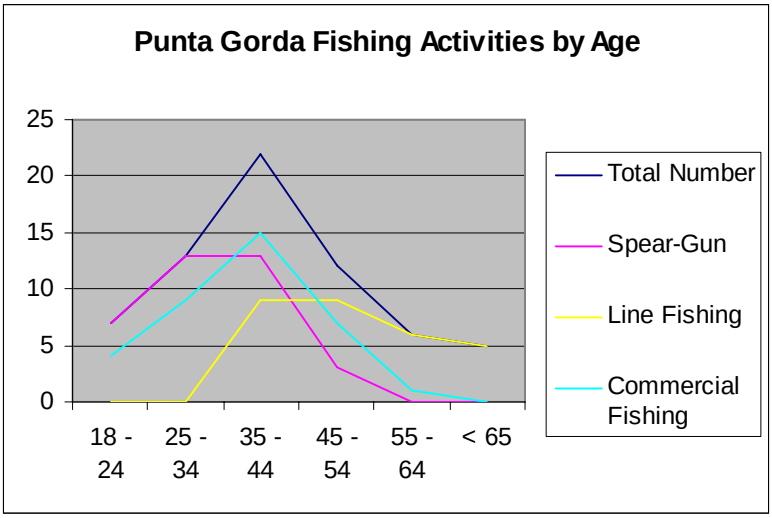

Figure 5.6 Punta Gorda Fishing Activities by Age

Using linear regression analysis to compare different dependent variables to age, I found several interesting relationships. When I compared age to fishing method, I found a significant relationship with an adjusted R square of 0.49 ($p < .0001$). Thus, age explains nearly half of the variation in fishing method and demonstrates that the perceived differences in the fishing population are indeed significant. Age was also a good predictor of CPUE per day (adjusted R square = 0.41, $p < .0001$), demonstrating that younger people catch less product while older fishers catch more. Although the relationship between age and CPUE was significant, the relationship could also be explained as a result of variation in fishing method: line fishers are likely to catch larger quantities of less valuable product, such as deep sea fish, while spear fishers catch less quantities of higher value product, such as lobster. When age was compared to income, the relationship was not significant at the $p < .0001$ level. This demonstrates that even

though different amounts of product were caught, in terms of pounds, there was no great difference in the overall value of product landed. Similarly, I found no statistically significant relationship between age and type of boat used, time commitment, or the fisher's socioeconomic status.

Variation in Fishing Strategies

Besides type of fishing method used, fishing strategies among artisanal Garifuna fishers vary according to fishing effort, in terms of number of trips made, type of boat, target species, and fishing grounds. During the ten months (or 306 days) that I recorded fishing statistics for Garifuna artisanal fishers, they made an average of 87 (SD 34.2) trips, or approximately 8.7 trips per month. Commitment to fishing varied widely, with the most ardent fisher making 151 trips, while the least committed part-time fisher only went out 40 times – mainly on weekends when he did not have other work. Upon analysis of my data, I discovered that some self-proclaimed full-time fishers actually fished much less than a few hard-working part-time fishers who made more trips and caught more product, so I decided to reclassify full-time fishers as those who fished for 110 days or more and part-time fishers as those who fished for 109 days or fewer. Rather than being arbitrarily chosen, these categories were used in order to preserve the approximate percentages of full-time and part-time fishers represented in the survey.

Full-time fishers made an average of 130.6 (SD 11.9) trips or 13 trips per month, while part-time fishers only made an average of 68.2 (SD 21.5) trips or 6.8 trips per month. Interestingly, fishers who fish with line made an average of 102 trips and fishers

who use diving as their principal method made an average of 74.8 trips. Per trip, fishers stayed out at sea, on average, five hours. Full-time fishers stayed out an average of 5.2 hours and part-time fishers stayed out an average of 4.8 hours. There was no appreciable difference in duration of trip between line fishers and divers. Throughout the time period for which data was collected, each month presented between four to fourteen days of inclement weather when fishing was not possible. Bad weather does affect Punta Gorda fishers to a great degree, sometimes putting them through hard times. One fisher told me how the weather affects him:

> When the bad weather come, maybe you have a lot of breeze for three or four days. Sometimes you go and you can't dive, you can't fishing, you can't nothing…. Just to get a maybe two fish to share them between four or five person. Just to not eat without meat…maybe you don't have a dime to buy a pound of rice, or a pound of chicken.

Recalling the seasonal characteristics of the Bay Islands climate, October through January can be considered bad fishing months because of the threat of stormy weather. In typical years, many part-time fishers would be gone during these months on their trips to the Honduran fishing banks.

Fishers who own their own boat made significantly more trips, 104 or 10.4 trips per month, than did fishers who do not own their own boat, who only made 48.7 trip or 4.8 trips per month. This variation was statistically significant (adjusted R square = 0.40, $p < .0001$). This clearly demonstrates that fishers who already possess fishing equipment and have made capital investments in fishing have an advantage over those fishers who have not made the necessary investments. In terms of hours spent fishing, fishers with their own boat stayed out an average of 5.1 hours, while fishers who borrow their boats spent 4.4 hours fishing. Nearly 31% of fishers did not own their boats, and usually

borrowed or rented a cayuco from a neighbor or relative (See Figure 5.7). Of those fishers who had their own fishing boats, almost half possessed cayucos, 15% owned motor dories, and only 8% owned lanchas.

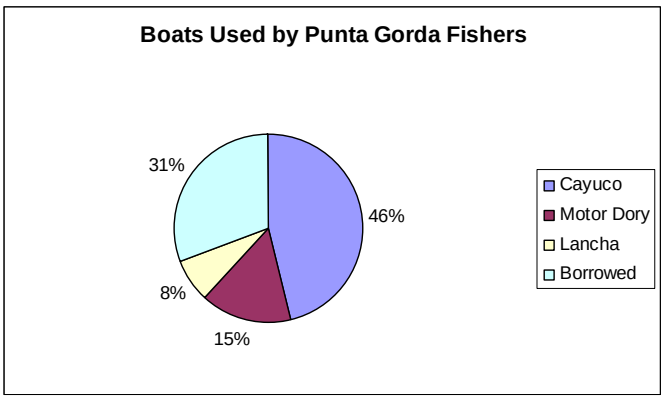

Figure 5.7 Types of Fishing Boats in Punta Gorda

Among fishers who owned their own boats, there appeared to be no significant difference in number of trips made based on the type of boat used. For example, a diver used his cayuco to go out 133 times over ten months and a line fisher used his motor dory to make 140 trips, but another diver only made 63 trips in his cayuco and a different fishermen only went out 74 times in his motor dory. Simply because there is no significant difference between number of trips and boat type, I did not feel it was appropriate to equate cayucos with self-propelled boats because the latter have a distinct advantage in terms of speed with which fishers can reach their favored fishing areas. Conversely, motor dories and lanchas have the disadvantage of higher overhead costs, such as fuel, which in part offset some of the advantages gained by increased speed and range. When I conducted linear regression analysis comparing type of boat used to other variables I found statistically significant relationships to total catch (adjusted R square = 0.24, $p < .0001$). This demonstrates that people who use motorized dories and lanchas

catch more than fishermen who depend only on cayucos. I also found significant relationships between boat type and total income (adjusted R square = 0.31, $p < .0001$). This relationship shows that fishers who used motorized vessels do have an advantage in their ability to more quickly accumulate product (and thus bring in more income). I did not find a significant relationship between type of boat and CPUE per day. Although these comparisons were significant, they did not explain very much of the variation (24% and 31% respectively), making it likely that other factors, such as time commitment and fishing method, provide better overall explanations for total catch and income.

Punta Gorda Maritime Resource Production

Seafood production in Punta Gorda varies semi-annually. It may seem ironic to label maritime resource use "production" when it is actually an extraction process, but given the amount of investment in time and equipment and that fishers refer to their catch as "product", it seems appropriate to use the term. Based on my observations of fish landings by artisanal Garifuna fishers (see Figure 5.8), levels of production are high from March until June when the commercial fishing season begins. Catch levels for these months range between 10,476 to 10,629 pounds of fish per month and 1,540 to 1,669 pounds of lobster per month. Then, as part-time fishers leave the community in late June and July for opportunities at the Honduran fishing banks, production in Punta Gorda declines because part-time fishers are not participating. In July of 2003 catch levels dropped to 7,831 pounds of fish and 843 pounds of lobster. Catch levels from fishing and diving never drop to zero because some fishers stay fishing in the community. Because

fishing effort remains, albeit at a reduced level, lobster stocks are never given an opportunity to recover.

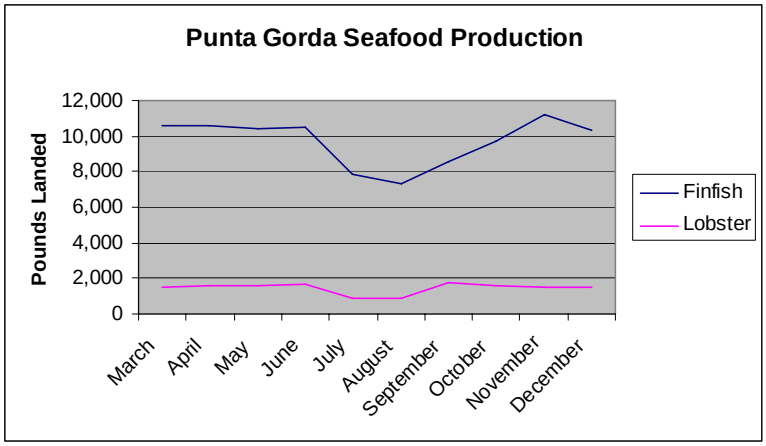

Figure 5.8 Punta Gorda Seafood Production – catch totals for all fishers

In typical years, fishery production in Punta Gorda would stay low through late November or December until the commercial season ends. It is reasonable to assume that production begins to increase in January, after the end of the commercial season, but this is not reflected in the data because no catch surveys took place from January 2003 through March 2003. On the other hand, the likelihood of inclement weather in January and February combined with the fact that commercial fishers were recently able to accumulate at least a meager amount of savings from their work during the fishing season, make it less likely that many part-time artisanal fishers will make trips during the early months of the year. One part-time diver told me that, "sometimes I go to the bank, stay three months, four months, when I reach back, I rest one week, two weeks, before I start to dive again."

During 2003, artisanal fishing production in Punta Gorda did not completely follow the expected pattern. Though it was true that production decreased after June; in

September, it unexpectedly began to increase early. An explanation for this anomaly is that in the wake of the U.S. imposed shrimp and conch embargoes, many part-time fishers returned home early and recommenced their artisanal trade in Punta Gorda. After repeatedly being unsuccessful at trying to find work on commercial fishing boats, one fisherman told me he had to start fishing artisanally out of necessity:

> I gone up to French Harbour, Oak Ridge, Jonesville every day…looking for job. But the [fishing] bank, she closed. So the boats don't go out. There's no job on shrimp boat or conch boat. I might try to go lobster, but I don't know that. It's hard here without work. I got to start fishing here again.

When average seafood landings per fisher are viewed in terms of their time commitment to the fishery (part-time or full-time) seasonal variation is also noticeable (see Figure 5.9). Throughout the year, production levels of fish and lobster are fairly constant for full-time fishers. Because they generally remain fishing artisanally all year round, their catch levels are not as likely to change. However production levels of fish and lobster for part-time fishers do change when the commercial fishing season begins.

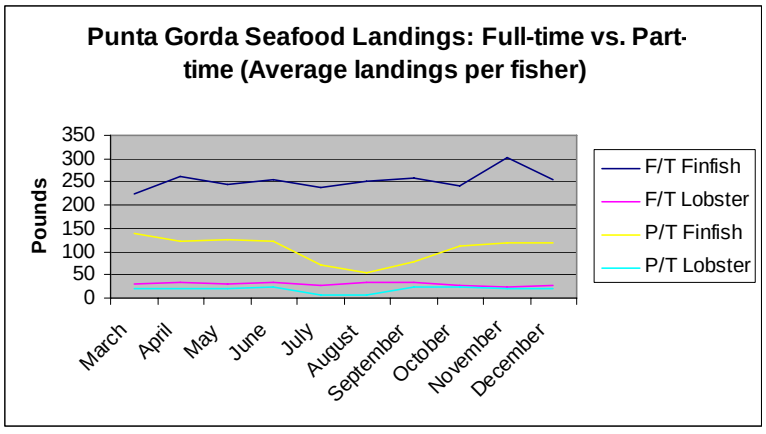

Figure 5.9 Full-time vs. Part-time Seafood Landings

When catch levels are represented in terms of fishing method, seasonal variation can easily be seen (see Figure 5.10). This shows that fishers who use hand lines as their primary method and fishers who dive both exit the artisanal fishery when the commercial fishing season opens. There are noticeable declines in the amount of fish caught by line fishers. Similarly there are declines in the amount of fish and lobster caught by divers. The amount of lobster caught by line fishers was negligible so there was no significant decline.

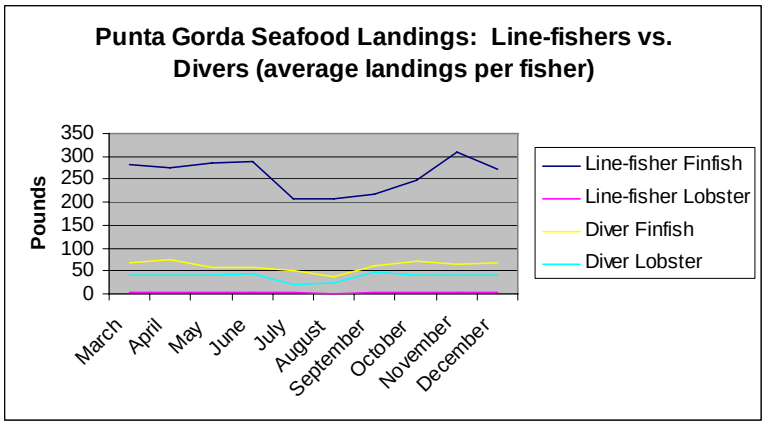

Figure 5.10 Line-fisher vs. Diver Seafood Landings

Using the measure for socioeconomic status that I derived by Guttmann scaling in Chapter Four as a basis for comparison, I found no statistically significant relationships between socioeconomic status of each fisher's household and their fishing method, time commitment to fishing, age, reported income or any other factor. Although it is true that my measure for socioeconomic status was based at the household level and measures of fishing method, catch levels, etc. were based at the individual level, I felt it was appropriate to make comparison because in all but two cases, the individual fishermen were the only breadwinners in the household. Interestingly, there was no significant

relationship between CPUE and overall socioeconomic status. Because my sample of fishermen's resource use activities was for a relatively short length of time, it is entirely possible that I did not have a sufficient window to adequately gauge all variables that influence socioeconomic status. Some individuals participating in fishing may have had more lucrative careers in the past to provide them with a higher socioeconomic status. Alternatively, other fishers may have simply had extenuating circumstances that decreased their fishing effort; for example, one informant seemed to be continually be beset by bad luck: first he was unable to fish because he had cut his hand while cleaning fish and then he lost a close relative and stayed at home instead of fishing. Another factor that may have influenced socioeconomic status is that many families receive remittances from relatives living outside of Honduras, thus elevating their financial wherewithal. Punta Gorda fishers, both full-time and part-time, are able to get by and feed their families by fishing, but it does not make them extremely well off. As one informant said, "we not starving, but we not having it that good."

There was a clear relationship between fishing effort and average monthly income from fishing (see Figure 5.11). Fishers who owned their own boat fished the most and also earned the most. Because full-time fishers made more trips than part-time fishers, they naturally had more income from artisanal fishing. In months when part-time fishers were staying in Punta Gorda and fishing or diving locally, they did earn amounts comparable to full-time fishers. Overall, average income for part-time fishers was lower because their fishing effort decreased when they left the community to go commercial fishing. Fishers who borrowed or rented boats to go fishing made the least number of fishing trips and earned the least amount from fishing. For these fishers, fishing was a

way to supplement their subsistence and income and was not something they depended on for their day-to-day survival. Fishers who primarily fished with hand lines earned marginally more than divers, but the difference was not statistically significant.

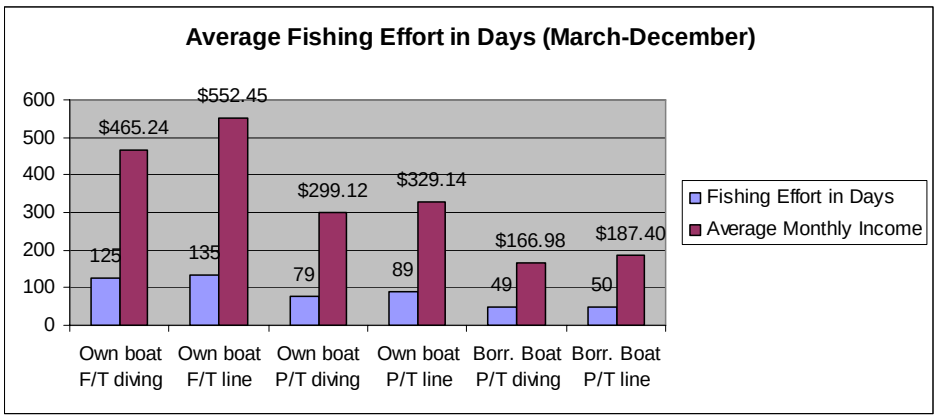

Figure 5.11 Average Fishing Effort in Days and Monthly Income

When the data is analyzed in terms of hourly fishing effort and income, ownership of a boat does not seem to make a difference in hourly income. This is perhaps due to the fact that people who borrow boats have comparable abilities in fishing and diving as do those individuals who own boats. Thus not owning a boat is not a disadvantage to a fisherman's skill, only to his ability to make fishing trips when he wants to. Based on data about monthly catch statistics, the number of trips made, and average trip length, I was able to calculate estimates for average CPUE and income (Figure 5.12). CPUE in terms of pounds per hour fished varies significantly between hand line fishers and divers, reflecting the fact that different species are targeted. Line fishers targeted large deep sea fish which permit them to bring in more pounds than divers who targeted lobster. In terms of hourly income, however, there are no major differences. Although divers caught

less pounds of lobster than line fishers did fish, they were able to sell them for higher prices thus allowing them to have similar income levels. It should be noted that CPUE and income for part-time line fishers who borrow boats seems extraordinarily high because one of those fishers routinely fished for sharks (the only fisher in Punta Gorda to do so) and as a consequence his catch totals threw the entire average off.

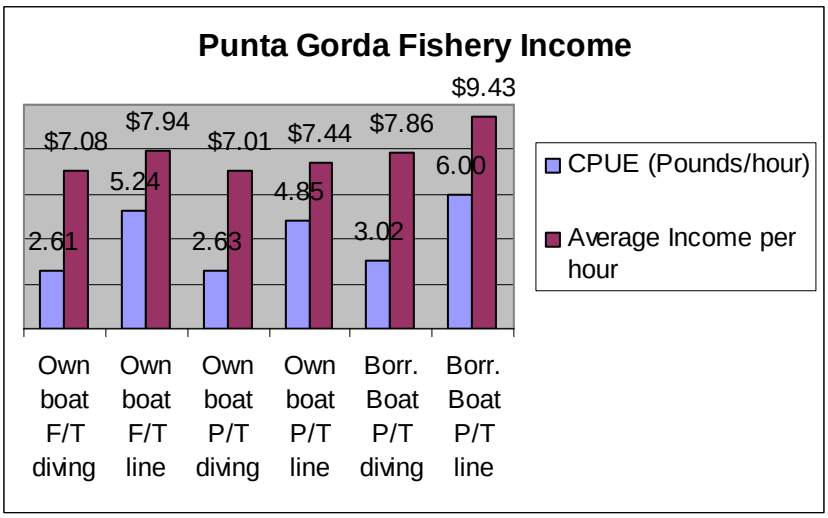

Figure 5.12 Punta Gorda CPUE and Average Hourly Income

Market Aspects in the Garifuna Fishery

During the study period in 2003, average prices for seafood products remained stable. Lobster tails were valued at approximately 50 Lempira per pound for small tails (less than four inches in length) and approximately 100 Lempira per pound for large tails (greater than four inches in length). During collection of catch statistics, no differentiation between small and large tails was made, so for computation of fisher's income from lobster, an average value of 75 Lempira per pound was used. Similarly, average prices for fish varied depending on type of species. For example, Kingfish was

valued at 35 Lempira per pound, while Snapper was valued at 15 Lempira per pound. For calculation of fisher's income, an average value of 25 Lempira per pound of fish was used. It is important to note that these prices reflect the market in Punta Gorda; in other communities on the Island, prices tended to be slightly higher. For example, in West End, which has the largest agglomeration of tourist-oriented businesses and thus has a disproportionately high demand for seafood, large lobster tails are valued in excess of 130 Lempira per pound.

The majority of Garifuna fishers sell their catch in Punta Gorda, primarily to pulperias which have freezers for long-term storage of seafood products. One fisherman told me what he does with his catch of fish when he brings it back to the community:

> I clean them and sell them. Skin them and carry them to the store to sell them. I sell most to the store up there. They weigh them on the scale and pay me so much…fifteen [Lempira], twenty, twenty-five a pound….that's the best price we get…it depends on the fish.

Two or three times a week, various middlemen will come to Punta Gorda and buy product from these collection points. Middlemen will then sell the product to hotels and restaurants located in the western portion of Roatan. More often then not, middlemen will only buy lobster tails from collection points in the community and not from individuals. Punta Gorda fishers are usually unable to sell their product directly to fish processing plants because they have to have a minimum amount to sell. Instead they sell to middlemen by necessity. One diver explains:

> Small lobster we not sell them too high…about half of what the biggest one pays, so maybe 75 Lempira. a pound, but for the local people we sell them for 50 and the biggest lobster for pound be 150 and for local people we get 100. And when we go to sell to the [the factory] we goes to the same place where they buy from the boat, but they don't buy from ten pounds. So if you don't have ten pounds you can't go sell it there, you got to go through here [in Punta Gorda].

There are several reasons why Garifuna do not sell very much seafood to processing plants. One reason is that they lack refrigeration equipment necessary for the transportation of product. Another is that the high degree of selectivity in seafood product at processing plants makes their catch hard to sell. Finally, the long distance necessary to travel in order to reach processing plants presents problems.

In the past, some enterprising Garifuna fishers would sell seafood product directly to hotels and restaurants. However, as middlemen have become more important in the local seafood economy, direct sales by fishermen have tapered off. There are two explanations for this change: the first is that many fishermen do not have ground transportation necessary to engage in direct sales; the second is that oftentimes managers of hotels and restaurants find it easier to deal with a select number of individuals (i.e. middlemen) on a regular basis who can offer standard prices for bulk amounts of seafood instead of haggling with numerous fishers over small amounts of product.

In contrast to lobster, which is usually exported from the community, most of the fish caught in Punta Gorda is consumed locally. Garifuna fishers keep enough of their catch to feed their family and may even present gifts of fish to their friends, relatives, and neighbors, but they then sell the excess to pulperias. Other residents in the community then purchase from the pulperias when they have no access to fresh fish. Some fishermen freeze their catch in their own or a borrowed freezer in order to wait for a better price or until the supply of fish in the community is low and their product is more in demand. One fisherman explained:

> Sometimes I sell them…I sell them. When I get good lots of fish, I sell them in the shop. I've got to sell them, if I could sell them, I sell all them. That's one thing you could sell here everyday…fish. If you don't sell them today and you got an icebox, you can put them in the freezer and sell them tomorrow….and if

> you got a car, you carry them to French Harbour or Coxen Hole and sell them there. But that's more expensive because you got to pay for the car or pay your passage. So you have to have plenty before to see what you is doing.

Cooperative Aspects in the Garifuna Fishery

In maritime anthropology literature, a major theme is the individualism of fisherfolk. Given the highly competitive nature of vying for common property resources, it is not unusual for artisanal fishers to engage in fishing practices which focus on the single individual. Rarely do artisanal fishers work in groups, and when they do it is often along familial lines. The idea of cooperation and collaboration can take on two different meanings; whether fishers engage in resource acquisition with the help of other fishers or whether fishers are members of "cooperatives" which allow them to pool resources with other fishers in order to gain better prices in the market, more effectively store unsold product, and, in some cases, to engage in stinting or conservation activities.

Fishers in Punta Gorda are no exception to these generalizations about individualism; they primarily rely on themselves and, for the most part, do not cooperate or collaborate with other fishers. One fisher told me directly:

> Here it is everybody for he self, when I say that everybody for himself, maximally fishermen. After the Mitch people come here wanting to organize…. There's a lot of people who don't know nothing about organization and you tell them something and they heard something else. Like when you tell them that we need to close this reef for six, seven, eight months, they want to get crazy. First thing they tell you, what they going to eat? No, no, no…things is not that…somebody will come try to help…and I can guarantee you, we need to do something about this reef…

A major limiting factor for cooperation is boat size and fishing method; the small size cayucos makes it difficult for more than two fishers to use them at the same time.

Additionally, the characteristically unstable nature of cayucos (because they lack a keel or other stabilizing device), makes them an unattractive option for simultaneous use by multiple fishers. Furthermore, because Garifuna fishers primarily use spear guns and hand lines – both fishing methods easily employed by a single individual – and typically do not use nets which would require more than one person to manage, they are more likely to go fishing alone. A small number of fishers in Punta Gorda do engage in fishing with other fishers, but usually only when one of the fishers owns a lancha which has the capacity to hold several fishers. Among the fishers that I interviewed, only two individuals with lanchas reported that they took other fishers with them on fishing expeditions. In both cases, these fishers only took family members with them when fishing.

In Punta Gorda, I found no evidence of active fishing cooperatives which involve several fishers not part of the same family. Although one informant claimed to have founded a cooperative, the only members of his "cooperative" were members of his immediate family. The major obstacle to formation of fishing cooperatives among Garifuna is the lack of unity among the community. Nonetheless there are a few individuals who are interested in forming a cooperative:

> To the future we need, like support of cooperatives, so we could probably get more organized and preserve the area. Maybe we could stop fishing around close to Punta Gorda. We could go further up and fish in the fishermen's grounds. We could get better equipment to fishing. And give them more opportunity to have a better future, than fishing close and that would preserve the area. Having given the opportunity to go further away you left this area here. Having a fishing cooperative and maybe a couple of fishing boats for fishing stuff, we could be away, far away from Punta Gorda. I think that would give a little more help. That will help a lot.

In 1990, a fishermen's cooperative called *Peces Cubera* was founded, but it only lasted six months because of organizational problems (Berthou et al. 2001: 159). Although Punta Gorda has a patronato which provides some degree of leadership for the community, their influence does not extend to providing guidance for resource use practices. In addition, residents of Punta Gorda are often mistrustful of individuals in leadership positions, believing that they "skim off the top" and inequitably distribute resources. According to Garifuna fishers, the last attempt to form a community-wide fishing cooperative ended in failure because of disagreement over who would be the cooperative's president and how income would be distributed.

Ecological Change in Punta Gorda's Fishery

The Garifuna fishery is an example of how increased entry and technology-based increases in efficiency contribute to the pattern of overfishing and resource degradation. The effects of the increase in efficiency have only become apparent with the increase in population. One Garifuna fisher pointed this out:

> There's more, too much people here…[they] scare up the product and takes a lot…maybe overfish the dory fish. They go out everyday…overfishing dory goes to the sea everyday. At that time [in the past] you [know] how we was going with what we catch product when I was small…anywhere…find product anywhere. But now…that's why you got to go so far…the place is dead…destroyed, totally destroyed. So you got to go far so you get something. You see a lot of divers here…lot of fishermen…this place is killed….this place is destroyed. But them years ago….we not have to go no where to get product…we get product anywhere…lobster…we could stand here and watch the lobster crawling there…

According to local marine biologists (Quiros-Ramirez, personal communication), these fishers are responsible for the depletion of fish, lobster, and conch from the area

surrounding their community. Furthermore, local scientists report that they will advocate policy change regarding legal fishing locations and fishing methods. Restrictions on legal fishing methods would help to reduce fishing effort by banning destructive fishing techniques such as near-shore seining and spear-fishing

Based on the information collected in interviews with fishers, it appears that all individuals notice ecological change regardless of the fishing method they use. Three-fourths of the informants directly stated that there is less product in the sea than before. One informant described his perception of change:

> A lot of difference now…cause the last thirty years. Thirty years aback you could see all kind of people could go out for ten minutes and come back with a hundred pounds of lobster, all kind of fish, crawfish, conch. That time look like [the fishery] wasn't done. From the beach over there you could see the lobster all over the shallow spot. Conch you could see them from the beach over there too…just walk out and pick up any amount you want. In that time, there wasn't no place…no market you could just use. Get so much and they don't know if they can find no sale from them….you have to dump them…no market at that time…no where to sell any amount. You could sell, but just a small little amount…now you could sell any amount, but then you can't find no amount, not a big amount….not around here…you go to the bank you could see a good amount…

Just under a half of the informants reported that there are too many fishers fishing in Punta Gorda. One diver blamed ecological degradation on the numbers of fishers:

> There is more people to fish and less opportunity of work. So there will be a lot more fishermen and less fish in the future. The fish is becoming less, the catch. The lobsters also, conch also. Every product from the sea has been coming lesser and lesser. The fish have been getting more shy. The corals, part of the corals are dying out. And, we expecting a big change. Expecting a big change because the generation of the people is developing up more. So we'll have more fishermen.

However, fisher's perception of ecological change varies in association with fishing method. Younger fishers tend to claim that they have no other choice but to fish on a

degraded reef or risk starvation. But older fishers claim that there are less fish because spear-fishers have scared them away. Supporting this claim is the fact that fishers must range further from Punta Gorda to find catch. One fisherman said:

> Right now the fish is dying…or they gone out. You got to go out so far to the fish now. You go for four hours and you don't get up to fifty pounds. But them days, one or two hours, you done catch that. Nothing here…everything hard to get now…

Another fisherman said that the decline in fish populations had caused him to have to go fishing outside of the reef, an area which he did not used fish: "fish is scarce now…they got me going out in a big ocean…I didn't fish there one time." This is evidence of local recognition that the reef in front of Punta Gorda is degraded. A few fishermen that I talked to recognized the ecological importance of mangroves as essential fish habitat for juvenile fish and marine organisms.

> The [fishery] has changed a lot. They started to cut down the mangroves and this as well influences a lot of the product. In general, the sea life goes and puts their eggs there. After they began to cut the mangroves, the product began to go down.

Many fishermen blamed the fishermen under 35 years old for not acting to conserve the resources because they dive for lobster and conch. The claims of older fishers are particularly significant because it represents awareness of the causes and effects of human ecological actions. Artisanal fishers who are against diving propose that divers forgo fishing with spear guns and fish with line while the resources recover. One line fisherman I talked to was very emphatic about the need to limit diving, but he understood some of the problems in effectuating such a change:

> I'm really against the diving now. Because if the people we can get together and talk about it somebody come and buy these fish from the fishermen and buy them. At least when the [commercial] banks are closed…close this one here too stop it.

> I figure the time's going to come when the new generation that come behind us is not going to know what lobster is...not going to know what conch is…whatever it is out there. I would really sign [a law] not to dive this reef everyday…because when I growed up here before, I'm telling you…I used to go to school at seven, eight o'clock…at ten, eleven o'clock. My mamma don't cook, we ain't got no fish or nothing in the house…I used to come with two or three lobster so we could eat…you can't do it now. What will happen in the future? You know…if you think everything, everyday…I really worry about it. So when we tell these [divers]…I would like somebody to come here, call up the attention….[they respond] "what they going to eat". How we used to do before? That the question right there. Everybody can get their line to go fishing…and everything can come back how it was….you know…give [the diving] a rest every six months… six months on…six months off. But when you look on this reef…this reef was crucified and I guarantee it. I've been fishing forty years and this reef is getting down. Before time, you could go blind…you dive down and find a conch. But not now…believe me right here on the beach you used to get the biggest lobster…

These fishermen recognize that they need an open dialogue in order to self-manage the fishery. Some management proposals for Punta Gorda include implementation of a season on the reef in front of Punta Gorda in order to let the lobster and conch recover. Other management proposals for Punta Gorda include the use of Fish Aggregation Devices (FADs), but the ability to use pelagic fish is limited by Punta Gorda's available fishing technology and lack of sufficient boat capacity (Taquet 2001: 29).

Management proposals for Punta Gorda's fishery have been brought forth by PMAIB, who conducted a sociological and ecological survey of all fisheries in the Bay Islands from 1999 to 2001. PMAIB's primary strategy in developing a fisheries management program for Punta Gorda was to provide assistance and facilitation to the people so that they could develop their own management solutions, rather than implement a top-down system of management that ran contrary to the people's wishes. PMAIB was trying to use a co-management strategy to let local people participate in the

management process. Unfortunately, things did not work out as they planned and their attempts to help organize the community failed. One informant explained why:

> One lady was working with some French [from PMAIB]…they come and check us…they told us "organize" the way we wanted the reef. I would like people to dive…a good part of these people dive. If there's going to be diving, dive three months and the next three off…something come up out of that you know…but the people, they wouldn't cooperate. If they can get everybody as I said…[if] every fisherman cooperates, somebody come and buy the fish from the fisherman. When they have someone to buy from them, I believe we can do something about [the reef]…

Many of Punta Gorda's fishers were encouraged by the PMAIB program, but still felt that not enough is being done. Still, many fishers hope that by working with PMAIB they will be able to save their local fishery:

> Punta Gorda could be different. You see the young guys stop that [spear fishing]…everybody [will] come and see that things are working good, but a lot of people be not believing. Well different people come from different countries [such as, the French consultants working for PMAIB], try to do that, [the fishers] make the people from different countries get bad [and frustrated], that's why we still going down. Time to wake up, to be smart…

The older fishers hope that the scientists will be able to help stabilize the fish populations. The spear-fishers, on the other hand, view PMAIB as a threat to their livelihood. They believe that environmental management will take away their source of income without providing alternatives. One informant was so against management that he said,

> Almost we don't have a problem about fishing here…or when the [Honduran fishing] bank close. [We] just keep on fishing [in Punta Gorda]. They got to jail all the town or the island if they want to stop that. Maybe the government will stop we. If we have a regular job, paying good for always, we could have anything like that…

Another diver was determined to keep diving – so that he could make a living – until he was forcibly prevented from doing so:

> If they try to close this [fishing] here, they'll have to start to kill the divers and the fishermen because they aren't going to stop me from going to look for fish. No way! Cause you be without nothing…you have to go and get your fish…cause not everyday you have money to buy your meat…

Ultimately, the poverty and lack of opportunity for employment in Punta Gorda leads people to continue fishing on a degraded reef using whatever method they like best. One experienced Garifuna man justified the continuation of fishing practices in Punta Gorda:

> If the people could find something to live off, I figure it have been good stop [fishing] too. But for me it's bad, because we lives off it, you know. It maybe bad to kill the place out, [but] there's people living, you know. Got to find a job to do. I guess that's why we doing it…cause there's nothing to do around here…you can't work for money, you can't work around here, you know. Sorry, there's nothing, you can't work around here…this place is…this place not ready man…this place not ready…you can't work for money here. Like I tell you, the diving is bad, but the people can't stop it. I guess that the times will come that they find something to do I guess they'll stop. But they wouldn't stop cause it's the living, but I guess if they find something to do they'll stop. If you could work, you could get a hundred [Lempira] a day, …and a hundred [Lempira] a day, you can't buy a meal. So you're working for nothing, you still can't get ahead…and that's what cause the people to like go to the sea. They could work for a hundred [Lempira] a day…and that can't buy a meal. They pay you every weekend, Saturday you collect six hundred, can't live off of it. Things there, everything is there…you work a whole week to get six hundred limps and you could eat that out in two meals. That's two meals [because] your family is big. Can't work…so even if you're working you're not getting by cause you got family, you know…children going to school and things like that. So even if you're working, you can't make it with the little money they paying you. And that's what causes lot of people to like to go diving too…they'd rather that because they could make a little more…you see…

In some areas of the Bay Islands, such as in West End and Sandy Bay, marine protected areas have been established to preserve the reef for tourist interests. In these areas, line fishing is still permitted, but spear fishing and the use of nets is prohibited. Some people

in Punta Gorda fear that PMAIB will recommend that the marine protected area be extended to encompass all of Roatan. Garifuna fishers believe that if something like that happens, it will cause tremendous suffering in Punta Gorda:

> …the product finishing…and there be the law too…because the law is hard behind us now. I guess like the next couple of years, that will be prohibited around here all together. They [the law] behind us now. But the people they protest too. The boys, they afraid to stop this. There will be a lot starving… starvation around the place…and that's why people still continuing doing it, they don't worry. But it's against the law…the law don't want no one to dive…they don't want no one diving about the place here…uh-uh. And work with those seines…prohibit…but they still do it my boy…cause if they don't do it, they going to die. Boy, that's the living…that's the living, see, and that's why they do it. I guess that here in Punta Gorda, they still do it little, but not on the strip, can't do it all, cannot…but right around here, you know, they still do it. But in other places its prohibited all together…they close up to the tourist area, prohibit all together…if they find you diving, they is going to fine you and they going to lock you up too…

This fatalistic attitude about the necessity to keep fishing appears to be very common among fishers who live in Punta Gorda. Another diver said:

> [In Punta Gorda] there is only fishing. There is no other future…there is not one factory…there are no jobs or employment. If there isn't that, the only work that Punta Gordans have is to have his diving gear and this dory to go to the sea to make the life. Only the sea…"

Summary

Punta Gorda is a community with a strong tradition of fishing. Garifuna fishers living in Punta Gorda have been fishing for as long as they can remember. People from Punta Gorda have been exploiting maritime resources around the Bay Islands for over two hundred years ever since they arrived to Honduras. Most of the elder fishers in the community grew up fishing, having been taught by their fathers or uncles. Younger

fishers continue the tradition of fishing, but use some different methods such as diving. The fishery in Punta Gorda is in decline as a result of using more efficient fishing technology, such as spear guns, and increased entry into the fishery. Both of these phenomena are able to occur because of the open-access nature of the local fishery and fishers are motivated to fish because of the market value of seafood products. Furthermore fishers in Punta Gorda use artisanal fishing as part of a diversified subsistence strategy. When they do not have work on commercial fishing boats or any other employment opportunities, they depend on artisanal fishing for their survival.

The economics of Garifuna fishing have their foundation in the open-access nature of the resource. Without any formal or informal methods of regulating resource use in the community, individuals have unrestricted entry to the fishery and are free to increase their fishing efficiency by any means. Additionally, there are market based incentives for individuals to increase their fishing effort. The local tourist economy helps to encourage fishing for high value product such as lobster. The lack of year-round employment also tends to encourage increased entry into the fishery.

No informants reported any type of territoriality in Garifuna fishing. From a practical standpoint this means that the fishery is completely open-access and that there are no common property management systems in place. When asked about the possibility of territoriality being employed, such as for lobster traps, informants stated that the local currents were not appropriate for those fishing methods. The lack of territoriality combined with informant reports of too many fishers suggests that the fishery faces problems of increased entry.

Fishers do recognize that economic development of the island has provided a market for their fish. For example, the price of conch thirty years ago was five cents per pound, now it is almost five dollars per pound. Introduction to a cash economy and population pressure in the island has increased dependence upon imported goods. Whereas community members in Punta Gorda used to farm small horticultural plots, informants report that there is quite a bit less cultivation currently in progress because individuals have a need for cash and farming is not profitable.

The average income for fishers was 5000 Lempira ($300) per month. Nearly this entire amount resulted from the sale of fish and lobster. There was variation between informants, but there was no significant relationship between income and fishing method. Most of the fishers interviewed occasionally receive monetary or material supplements from relatives that emigrated from Punta Gorda. Another source of outside income for Garifuna is the budding tourism industry. Nearly every family in the village has some type of marine product that they want to sell to tourists. Additionally, a few individuals that have boats hire themselves out for tourist or transport services. Though there are other sources of income, the primary way Punta Gorda fishers make their living is by fishing.

Similar to other communities in the Caribbean (King 1997), the income potential from artisanal fishing is directly related to the growing tourist economy. Western tourists have a preference for high status food such as lobster. This has led to an increased reliance on lobster spear fishing as a form of subsistence. If the catch cannot be sold directly to a tourist establishment, it is sold to a local store owner who then sells it to businessmen from the larger communities on the island. Garifuna report that the number

of lobster has decreased and their average size has diminished – clearly signs of overfishing.

Paralleling the rest of the island, the Garifuna community has undergone rapid population growth as a consequence of domestic increase and immigration from mainland Honduras. With very few exceptions, only Garifuna move into the community. This is important to note because each Garifuna fishermen considers it his right to fish from community waters. Many of the Garifuna from the mainland came to Roatan in search of employment. The standard wage on Roatan is considerably higher than in the rest of Honduras; however the cost of living is higher as well. Nonetheless, much of the employment is seasonal at best – government regulations limit the season for many of the commercial species.

Garifuna men fill the niche of laborers on commercial fishing vessels. Their familiarity with the sea and fishing allows them to excel at this type of work. When the season is off, fishermen are sometimes left without income for up to six months out of the year. In these cases, the Garifuna "eat" off the reef. They catch fish for subsistence and lobster for sale to local businesses. This has been paralleled by an increase in the number of individuals engaging in the fishery and the development of a cash economy for artisanal fishing. Too many fish are being harvested for their populations to recover. Already, Garifuna must range further from Punta Gorda to find adequate supplies of fish.

The discussions and interviews with Garifuna fishers revealed that the fishers are aware of ecological degradation and fishery declines. Despite this, they continue to exploit the ocean and reef for its resources. This inherent contradiction between the perceived status of the resource and the reality of resource use give insight into Garifuna

economic decision making patterns. They continue to fish and dive because they can and if they do not get the lobster, someone else will. Punta Gorda's fishers believe that they cannot stop fishing because they do not see any other way of making their living.

CHAPTER SIX

POLITICAL ECOLOGY OF BAY ISLANDS FISHERIES MANAGEMENT

This chapter addresses the complexities of ecological management processes that have direct implications for Garifuna fishers (discussed in Chapter Five). Specifically, this chapter looks at the social, economic, and political factors that influence the success, or lack thereof, of environmental management strategies in the Bay Islands (and thus in Punta Gorda). Three major stakeholder groups have important roles in resource use practices and conservation efforts of waters surrounding the Bay Islands of Honduras: tourism, fisheries, and environmental organizations. Although these groups are interrelated through a complex web of social, economic, and political connections, they do not necessarily share a common vision for the future environment of the Bay Islands. Elements from each stakeholder group have brought their own vision to the table as they participated in development of a comprehensive environmental management strategy; however there have been varying degrees of success in its implementation.

These broadly defined stakeholder groups can be subdivided into more specific categories. Bay Islands' tourism can be subdivided into day visitors, such as from cruise ships, and overnight visitors. Bay Islands' fisheries include an export-oriented, industrial-scale commercial fishery and a local artisanal fishery which has limited involvement in seafood exportation and is heterogeneous in terms of capitalization. Environmental organizations can be divided into local groups, such as the Bay Islands

Conservation Association (BICA) and Proyecto Manejo Ambiental de las Islas de la Bahia (PMAIB) and international groups such as U.S. National Marine Fisheries Service (NMFS) and Earth Island Institute (EII). Because monetary assistance to local environmental organizations comes from international sources, they share similar resource management strategies and goals, and are not completely autonomous; the distinction is made for analytical purposes.

All of these stakeholder groups have developed since the late 1960s; tourism and commercial fishing have flourished in the past thirty years. These two industries make up the largest employment sectors for island residents. Though historically, fishing was more important, tourism is rapidly becoming the principal island moneymaker. Associated with economic development is a dramatic increase in population from both domestic growth and immigration from off-island (Stonich 1998). Beginning in the late 1960s, Spanish-speaking Hondurans from the mainland were encouraged to immigrate to Roatan to provide labor. However, the flow of migrants to Roatan has exceeded the pace of economic development, resulting in a population problem which is stretching the island's carrying capacity and has led to widespread unemployment. Prompted by its growing economy and population, Roatan has seen substantial development in its infrastructure and buildings. In response to development, some local island residents and businesses have recently begun conservation initiatives to protect their environment and manage further development.

Tourism in the Bay Islands

The natural beauty of Roatan's beaches and coral reefs draw a substantial number of tourists each year. Long a forgotten corner of the Caribbean, the Bay Islands have only recently become a well-known destination. In fact, if you were to browse tourist guidebooks to the Caribbean, you would most likely find no mention of the Bay Islands even though guidebooks usually show other destinations in the Western Caribbean such as the Cayman Islands and Belize. This oversight is most likely a result of lack of tourist infrastructure in the Bay Islands, the misguided perception that English is not widely spoken, and because of the recent history of civil and political strife throughout much of Central America.

Tourism in the Bay Islands began slowly and was initially based on SCUBA diving. In 1969, only 900 tourists came to the islands. Since the Bay Islands are part of the second largest reef system in the world and offer stunning views of reef walls and coral ecosystems, they are ranked among the best places to dive in the world. By the 1980s, tourism began to take off, with 8,000 visitors in 1988 and 17,000 in 1992. The primary destination of tourists was Roatan (13,000), followed by Guanaja (3,000) and Utila (1,000) (PMAIB 1999). Numbers of tourists arriving in Honduras in general have steadily increased throughout the 1990s, but suffered a brief setback when Hurricane Mitch devastated Central America in 1998 (see Figure 6.1). Although the hurricane left a wake of death and destruction on the mainland, primarily due to flooding and mudslides, damage on Roatan was not as severe. Tourist businesses on Roatan quickly sent out the message that they were open for business with their facilities intact and by

winter of 1999 (the high season), tourism had begun to recover. Several dive shops clustered in West End, Roatan have banded together in an effort to draw more divers to the Bay Islands by purchasing a derelict tanker and sinking it in a sandy bottomed area to create artificial reef; the wreck serves both as a fish attraction device and a diver attraction device. Currently, there are three "high seasons" for tourism; around Christmas, during *Semana Santa* (Holy week), and during summer.

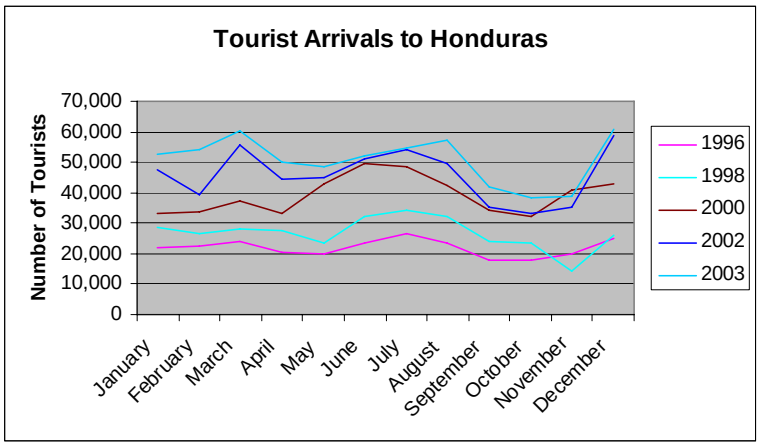

Figure 6.1 Tourist Arrivals to Honduras (Source: Instituto Nacional de Turismo)

Tourism is rapidly replacing the fishing industry as the largest economic sector in the Bay Islands. The Bay Islands have grown beyond their niche as a SCUBA diving spot to include winter-time cruise ship tourism, visitors from mainland Central America (Anonymous 2003a), and expatriate investors and retirees from the U.S. and Europe (Wiefels et al. 2000a: 14). Roatan's development as an international tourist destination is reinforced by the availability of direct flights from Miami, Houston, and Milan. By far most development in the tourist industry has taken place on the western end of the island, in the Roatan Municipalidad, where hotels, restaurants, and other services have proliferated in the past few years. Corresponding to this growth, new residents are

encouraged to come to the Islands as investors, entrepreneurs, and laborers; and secondary businesses, such as construction businesses, real estate firms, taxi and bus services, and clothing stores are sprouting up Island-wide. Western Roatan's primary town, Coxen Hole, completed construction of a deep-water cruise ship dock in 2001. Even more recently, many local tourism-oriented business organized CANATURH-BI (*Camara Nacional de Turismo de Honduras – Bay Islands*) as a means to further develop the tourist industry, improve coordination between tourist businesses, and to lobby in its interest with the Honduran national government in Tegucigalpa (BIV Vol. 1: 9).

The tourist industry has close links to local conservation initiatives such as BICA, in fact, the founder and original director of BICA has close family ties to one of Roatan's preeminent resorts. Environmental protection is a priority for tourist business because the primary commodity "for sale" is the beauty of local beaches, forests, and reefs. Without careful management of the Bay Islands' ecology, the system could be heavily degraded, thus damaging the very thing that draws tourists. Most businesses on Roatan espouse, at least superficially, support for environmental protection by displaying on their business signs statements such as "Save the Reef" or "*Cuida la Arrecife*". Tourist businesses are involved in the drive to establish new and expand existing marine protected areas with the stated goal of restricting destructive fishing practices (i.e. spear fishing). Recent environmental initiatives by dive shops include a tagging system for SCUBA divers in order to restrict entry into protected marine reserves.

There is a darker side to the tourism industry. Many resort developers have intentionally altered the local ecosystem to make it more attractive to potential tourists. In many cases, this involves clearing natural vegetation from beach areas, such as under-

story grasses and shrubs above the water line, and turtle grass from immediately below the water line. Although this makes the beaches more aesthetically pleasing – the removal of turtle grass changes the apparent color of the water from dark green to crystalline turquoise – it destroys essential habitat for fish and conch. In some cases, developers have cleared mangrove forests and dredged up sand to create artificial beaches. This not only results in additional destruction of essential fish habitat, but also leads to increased sedimentation and turbidity in coastal waters which, in reducing the amount of dissolved oxygen in the water, endangers the viability of the reef ecosystem. Dredging is not the only cause of increased sedimentation; artificial beaches are especially prone to erosion. In one extreme case, developers destroyed sections of coral reef to improve navigable access to one of the island's preeminent resorts. In many cases, developers on the island do not consider the effect of run-off into the sea and few attempts are made to control erosion which results from construction endeavors well inland; for example construction of an orphanage on Roatan without adequate run-off control left nearby creeks and coastal areas choked with reddish colored clay. Although Honduras has codes regulating construction and development processes, inefficient enforcement of regulations lets environmental abuses continue. Many developers do receive fines when they violate environmental regulations, but they simply factor in the fines as another cost of doing business.

An additional major effect of tourism is contamination of the environment with waste and dangerous chemicals. When tourists visit the islands, they leave behind their garbage and waste; a major concern considering that local landfills are built in environmentally sensitive areas and because most waste water systems on the island flow

into septic tanks which often have substandard designs. One landfill in Oak Ridge was built on the edge of the lagoon where run-off from the garbage was allowed to enter the water. Septic tanks are often built as open bottom pits which can result in pollution of groundwater. It has been reported that some resorts use DDT to control biting insects such as sand flies which tend to make the tourist experience less pleasant, but I was not able to verify this information.

The recent development of cruise ship tourism in Roatan brings the specter of further environmental harm; cruise ships have been known as a source of pollution from garbage, sewage, and bilge-water. Even though there are stricter controls on cruise ship pollution, the potential threat remains. Cruise ships can also potentially damage the local ecosystem should they need to take on supplies such as water while at dock. "If cruise ships were to take on 40,000 gallons of water each time they came to Roatan, the local aquifer will be rapidly depleted" (Evans quoted in BIV 2:9 2005).

Tourist establishments are closely linked to the Bay Island's fisheries. Many restaurants depend on the local commercial and artisanal fisheries for their seafood. During November and December, the traditional "high season" for tourism, restaurants have significant increases in the number of customers. Correspondingly, restaurants increase the amount of seafood they buy from local sources. The amount they buy during these two months varies between 3 Kg. and 400 Kg. (Wiefels et al. 2000b). Much of the seafood they buy is not suitable for export because of size limitations or prohibitions on trade in endangered species. An additional link between tourism and Island fisheries is the growing recreational fishing sector which is based primarily in western Roatan (Gaertner et al. 1999). Sport fishers fish for Wahoo (*A. solandri*), Blue Marlin (*M.*

nigricans), and "Bonefish" (*A. vulpes*) (Berthou et al. 2001: 158). In witness to the growing importance of sport fishing in the Bay Islands, local businesses recently sponsored the Fourth Annual Roatan Municipality Fishing Tournament (Johnston 2003e).

Tourism in the Bay Islands has progressed from being a back-water SCUBA diving resort to becoming an international destination. The impact of tourism on the local economy is considerable, making tourism more important to the island than fishing or any other local industry. Overall, the increasing number of visitors to the Islands is viewed as positive by locals who see tourism as the key to future economic success. Development on Roatan is not without its flaws because, in some cases, environmental protection receives little attention. Nonetheless, progress is being made toward conservation of the local ecosystem because most tourist businesses realize that it is their most valuable resource.

Commercial Fishing

In the Bay Islands there are many commercial and artisanal fishing communities, some of which produce several hundred kilograms of fish each day. Commercial fishing is distinguished from artisanal fishing because it is export-oriented, uses industrial scale fishing vessels, and targets fishing grounds distant from the islands. Artisanal fishing (such as practiced by Garifuna fishers), targets local fishing areas and has a much lower percentage of export-oriented products. The importance of fishing for Bay Islanders reflects the increasing global tendency toward the consumption of maritime products. On Roatan, seafood is an important part of the local diet and consumption averages 45 Kg.

per capita per year (Wiefels et al. 2000b:6). Overall, the primary goal of Island fishers is not simply to catch enough for subsistence, but to sell.

In the 1970s and 1980s the Bay Islands commercial fishery was booming and quickly developed into the largest Caribbean based fishing fleet in Central America. With more than 350 boats and production estimates at 5,600 tons of seafood per year (Morales in Oquelí et al. 1999), commercial fishing makes up a major part of the economy. There are nine fish processing plants located in the Bay Islands which buy from the local fishing fleet and send export quality product to the United States, which is by far the largest buyer of Honduran seafood. The fleet is divided into four components: shrimp fishers, line fishers, lobster fishing (by trap and by diving), and conch fishing (Taquet, M. 2001: 11).

For each component of the fishing fleet, vessels are outfitted with specialized equipment appropriate for the target species. There is a large degree of variation in vessel size, range, and equipment; however some general observations can be made. Shrimp boats have two booms which can be lowered over either side to support trawl nets. Pursuant to U.S. law which regulates fishing methods acceptable for use by shrimp exporters, shrimp fishers must use trawl nets equipped with Turtle Excluder Devices (TEDs). TEDs function as an escape hatch allowing sea turtles caught in shrimp nets to safely get out.

Line fishers are typically equipped with heavy-duty fishing reels which are bolted to the side of the boat. Boats used by line fishers are not as large as those used by shrimp or lobster fishers. Often, line fishers only make day trips from their home port, rarely staying at sea more than three days. Line fishers commonly fish for deep-sea species,

such as yellow-tail snapper, red grouper, and flying fish, all species which are exported to the U.S.

Lobster fishermen employ two different strategies for the capture of their product: trap fishing and diving. When lobster boats are outfitted for trap fishing, they will leave port laden with wooden traps. Sometimes traps are stacked ten to twelve feet high, giving lobster boats the appearance of top heaviness. Indeed, during my fieldwork, one of my contacts in Punta Gorda (a part-time artisanal fisher) was at sea on a lobster boat when it capsized due to unwise placement of their heavy load of product. He was afloat at sea for over a day and was presumed dead before he was finally rescued.

Other lobster boats use divers to capture the product with spear guns or hooks; they may use underwater breathing equipment or divers may simply free dive. Since divers who free dive for lobster do not use underwater breathing equipment, they are typically limited by their individual stamina and ability. When using breathing equipment divers can stay underwater for forty-five minutes to three hours, depending on the type equipment used and depth fished. Divers who use SCUBA tanks to fish for lobster are at high risk of contracting nitrogen sickness or "The Bends" because they often do not use safety rules which limit the number of dives and time spent on the bottom. In the case of these divers, safety considerations take a back seat to profit potential. The bends occur when divers have been breathing compressed air and have not allowed sufficient time for the dissipation of excess nitrogen in their blood. After diving to a depth of ninety feet, a person will have elevated levels of nitrogen in their system; as they ascend to the surface, they must stop at certain intervals to allow nitrogen to safely dissipate. If a diver ascends too rapidly, non-dissipated nitrogen can form bubbles in

their blood. Also to prevent the bends, divers should limit the number of dives they make each day because not all nitrogen dissipates after each dive, thus leading to higher risk potential in each successive dive. Divers who contract the bends can potentially suffer debilitating injuries or death if they are not rapidly treated by medical professionals with access to a decompression chamber.

Conch boats are by far the largest fishing vessels in the Bay Islands fishery; they sometimes carry up to seventy-five fishers. Conch extraction is done by hand – just by picking up the animal from its hiding place near underwater turtle grass beds. Conchs are slow moving and can easily be spotted by experienced fishermen. Conch boats carry dozens of dories which fishers use for storage of the product as they continue to dive.

Honduran fishing vessels primarily fish their own territorial waters in the *Banco Gordo* to the east of *Cabo Gracias a Dios*. Some shrimp fishers trawl their nets along the littoral of Honduras' Caribbean coast in search of product; however this area is limited because the continental shelf drops off rapidly. Because few commercially desirable species live in the depths along the North Coast, few commercial fishing boats from the Bay Islands fish in waters close to home. During the off-season in the Bay Islands fishery, some intrepid Honduran fishers go to Nicaragua or Colombia (Isla de San Andres, Providence) to fish.

Following international convention, the territorial waters of Honduras extend 12 miles off the coast of the country's possession, but the Exclusive Economic Zone (EEZ) reaches 200 miles from the coast. Honduras, therefore lays claim to most of the Bay of Honduras and a large portion of the continental shelf extending off Central America (see Figure 6.2). The allocation of EEZ territory gives Honduras one of the largest maritime

territories in the Caribbean and a considerable amount of the Caribbean's fishing banks. Though there have been disagreements with Nicaragua over the maritime border, the de facto border is the fifteenth parallel. Honduras' Pacific maritime territory, includes the Gulf of Fonseca, but is otherwise negligible.

Figure 6.2 Honduras Exclusive Economic Zone (EEZ) (Source: Veridian Systems Maritime Boundaries Map, 1998)

Artisanal Fishing

Coastal waters around the Bay Islands are fished extensively by a large artisanal fishery. According to a sociological survey conducted in 1999 (Boncoeur et al. 2000: 3) the Bay Islands artisanal fishing fleet has 500 boats which are considered "artisanal" because they are less than forty feet in length. Major fishing communities in the islands include; on Guanaja: El Cayo, El Pelicano, Savannah Bight, East End, Mangrove Bight and North East Bight; in Jose Santos Guardiola: Santa Elena (Helene), Camp Bay, Alligator Nose, Diamond Rock, Oak Ridge, and Punta Gorda; in Roatan: Coxen Hole,

Sandy Bay, and West End; and on Utila: Utila town, and Los Cayitos (Berthou et al. 2000:16 – 20). The barrios of Punta Gorda were studied by PMAIB because of their importance to the local artisanal fishery in number of fishers and boats (Berthou et al. 2001: 134). Based on this information, Punta Gorda not only has the most artisanal fishers, but also has the highest percentage of temporary or part-time fishers among all the communities of the Bay Islands (Berthou et al. 2000:22). Of the maritime resources in the Bay Islands, three are of primary interest to artisanal fishers: fish, lobster, and conch. In the Caribbean, there are over 400 distinct species of reef fish, of which almost 200 have potential commercial value (Randall 1983 in Berthou et al. 2001: 68)

Until the late 1990s, the socioeconomic importance of artisanal fishing in the Bay Islands was largely unknown. (Berthou et al. 2001: 26). Because preservation of the Bay Islands' coral reef system is viewed as the key to future success in tourism, interest developed in studying the local ecological impacts of the artisanal fishery. To that end, the Honduran government launched a three-phase $40 million environmental management program, *Proyecto Manejo Ambiental de Islas de la Bahia* (PMAIB) in 1997. PMAIB is under the authority of the Honduras Secretary of Tourism and is primarily funded by the Interamerican Development Bank.

Phase 1 of PMAIB included collection of information on the social, economic, and demographic characteristics of the Bay Islands, information on artisanal fisheries, data on ecological systems and integrity, a cadastral survey of properties on the Islands, and plans for construction of water and sewage systems in the towns of Oak Ridge, French Harbour, and Coxen Hole. Phase 2, which is still in progress, involves implementation of environmental management plans, such as fisheries regulations and

protected areas (Johnston 2003a). Phase 3 will involve continued resource management and monitoring in order to ensure sustainable use of the Bay Islands' maritime resources in the future. Of specific interest to the current discussion, the artisanal fishery component has five mandates: 1. To demonstrate the importance of artisanal fishing around the Bay Islands. 2. To describe the characteristics and diversity of the artisanal fishery. 3. To evaluate the situation of exploited resources. 4. To address management concerns related to artisanal fisheries. 5. To propose recommendations for sustainable development (Berthou et al. 2001: 24).

Across the Bay Islands, the artisanal fishing fleet is distributed evenly, taking into account the size and population of each island: Utila has 21% of the fleet, Roatan has 57%, and Guanaja has 22% (Boncoeur et al. 2000: 4). Taking a closer look at Roatan's 274 artisanal fishing vessels, it is interesting to see that only half of the boats are motorized and over a third of boats have small (less than twenty horsepower) engines (Boncoeur et al. 2000: 17). Clearly the level of economic capitalization in fisheries is not evenly distributed throughout the Bay Islands. Artisanal fishers on Roatan do not have the same amount invested in the fishery as do fishers based on Utila or Guanaja. Perhaps this is due to the fact that a larger number of artisanal fishers on Roatan are already socioeconomically marginal and they are unable to invest large amounts of capital into their fishing effort. Supporting this supposition is the fact that 40% of all non-motorized artisanal fishing boats in the Bay Islands are used for diving expeditions (Boncoeur et al. 2000: 5). Diving for lobster and conch requires less capital investment and offers the potential of higher economic payouts.

In their study, PMAIB divided the Bay Islands into five areas: Utila, Guanaja, Santa Elena (Helene), Roatan East and Roatan West. Roatan East is primarily made up of fishers from Punta Gorda, but a small number of fishers from neighboring Creole communities, such as Diamond Rock, Camp Bay, and Pollitilly are included. Roatan East has the largest number of artisanal fishing vessels in the Bay Islands with 123 boats or 24% of the total fleet. Roatan West has 79 boats or 15%, Utila has 114 boats or 22%, Guanaja has 111 boats or 21%, and Santa Elena has 91 boats or 18%. (Berthou et al. 2001: 42-44). Despite this apparent even distribution of fishing boats, there is a large amount of variation in the type of boat. On the extremes, Roatan East's artisanal fishing fleet is mostly composed of small, unpowered dories and Utila's fleet is predominantly made up of motorized dories.

Artisanal fishing in the Bay Islands use a variety of techniques and methods in their effort to acquire product including: hand line or cord, hydraulic line or hand reels, spinning tackle, deep-lines, seine nets, traps, weirs (on the beach), pelagic nets, and via diving: spear guns, hook bars, and manual extraction (Berthou et al. 2000:32-33). The most widely used fishing methods are hand line and diving with spear guns, in part because these methods require the least capital investment. The particular fishing method employed varies depending on the target species group. For members of the family *Lutjanidae* (snapper), fishermen use line and traps in deeper water, and spear guns when fishing inside the reef. For members of grouper family or *Serranidae* and also for jacks or *Carangidae*, methods include line, traps, spear guns, and nets. Members of *Sphyraenidae* (barracuda) are usually caught with trawl line, though a good shot might be able to use a spear gun. For *Haemulidae* (grunt), fishermen use lines or traps, while for

Scombridae (Wahoo and King Fish) only line is used. To fish for Hogfish or *Labridae*, fishermen use spear guns. To fish for lobster or *Palinuridae*, fishermen use hooks and spear guns (Berthou et al. 2000:36).

Most artisanal fishers have worked since they were young men and have an average of twenty-four years of experience (Wiefels et al. 2000a: 16). Bay Island fisheries are ethnically diverse, with participation from nearly every ethnic group. Black Creoles make up the largest group of fishermen, with 38% of the total. White Islanders make up 24% of the total, but are largely clustered in Utila. 16% of all fishermen are Garifuna, 12% are mulattos, and 10% are Mestizo (Wiefels et al. 2000a: 20).

Island fishermen do not define exclusive fishing territories, although they do consistently fish the same general areas. Over two-thirds of fishermen said that fishers from other communities fish in their waters. However, in most cases, there were no recriminations or consequences for other fishers. The acceptance of other fishers reflects the open access nature of Bay Islands fisheries – each fisher believes that other fishermen are only trying to make a living. Only in a few cases where the number of fishers, intensity of fishing, or fishing methods used become issues do feelings of animosity toward other fishers arise (Wiefels et al. 2000a: 27).

Substantial differences exist in the amount of capital investment in the Bay Islands' artisanal fishery. Individuals who use non-motorized dories invest the least amount in their boat and fishing gear; their boats cost an average of L. 1,796 and their gear costs an average of L. 1,673 for a total average investment of L. 3,469 or less than $200. For individuals who use motorized dories with engines less than 20 HP, their boats cost an average of L. 25,190 and their fishing gear costs an average of L. 3,244 for a total

of L.28,434 or $1,580. Fishers who have large boats with motors more powerful than 20 HP invest the most amount of capital in their fishing effort. Their boats cost an average of L. 78,383 and their fishing equipment costs an average L. 5,051 for a total of L.83,434 or approximately $4,635 (Boncoeur et al. 2000: 33). The relatively large amount of capital needed to purchase bigger, more powerful boats presents challenges to fishermen who are socioeconomic marginalized. Clearly, there is a "Catch-22" situation in play where fishers need to have substantial initial capital to purchase large boats which could enable them to increase their fishing effort in order to accumulate more capital. Due to these challenges, many artisanal fishermen, especially in poor communities, continue to rely on the relatively cheap small, non-motorized dories.

The local Bay Islands market for seafood is relatively small. Including locals and tourists, Wiefels et al. (2000b: 6-7) estimate that there at 50,000 consumers (30,000 on Roatan; 12,000 on Guanaja; and 8,000 on Utila). Despite its small size, the local market is readily accessible to artisanal fishers. Markets for seafood products outside the of Bay Islands include mainland Honduras (La Ceiba, Puerto Cortes, Trujillo) and the United States (Miami, Tampa, New Orleans, Houston). In both cases, access to the market is limited by infrastructure such as ships, refrigeration/ice capacity, and the ability to process product (Wiefels et al. 2000b: 7). Local fishers keep part of their catch for their own consumption and sell the rest on local circuits. Fishers only retain approximately 10% of their catch for personal consumption; however lobster and conch are almost always sold. There are a few storehouses and processing plants where local fishers can take certain species. Usually the seafood products for sale on the islands are secondary quality (those which do not meet export standards because of size, shape, etc.) (Wiefels

et al. 2000b: 8) Fishers also sell product to restaurants, to supermarkets, to pulperias and carnicerias, and they sell on the street (Wiefels et al. 2000b: 12).

In its summary, the PMAIB study showed that total production of artisanal fishery in the Bay Islands in 1999 was estimated at 1,490,000 pounds and was valued at 24.1 million Lempira (Berthou et al. 2001). The study showed that ecosystem impacts of fishing are minimal around the islands, with the exception of areas where diving is practiced. Some divers have been observed damaging the coral. To be sure, climate is a major factor in damage to the reef; Mitch destroyed some corals, which are now covered with algae. (Berthou et al. 2001: 117)

Environmental Organizations and Fisheries Management in the Bay Islands

The stated management objectives of the PMAIB program are: "conservation, the harmonization of different uses of the maritime resources, to increase the socioeconomic benefits of use, and to achieve an equitable distribution of uses and benefits of maritime resources" (Berthou et al. 2001: 178). In order to foster the sustainable management of coastal and marine resources in the Bay Islands, PMAIB's management strategy involves the creation of a system of marine protected areas (See Table 6.1) (Berthou et al. 2001: 185, Wiefels et al. 2000a:11). Roatan already has experience with protected areas, as evidenced by the Sandy Bay and West End Marine Reserve in western Roatan and the Port Royal Forest Reserve in Jose Santos Guardiola (Wiefels et al. 2000a: 11). Other local organizations, such as BICA have been instrumental in managing marine protected areas. BICA has an active role in the Sandy Bay/West End Marine Reserve and funds

park rangers to help enforce fishing restrictions. Implementation of protected areas has not been without conflict; in the Sandy Bay area, a park guard shot and killed a local fisherman over a dispute related to fishing.

Table 6.1 Bay Islands Protected Areas

Bay Islands Protected Areas (UNDP 1992)				
Island	**Protected Area**	**Category**	**Type of Ecosystem**	**State of Resources**
Utila	Turtle Harbour	Marine Reserve	Coral Reef	
Utila	Turtle Harbour	Forest Reserve	Forest	Slightly Impacted
Utila	Raggedy Cay	Forest Reserve	Cay	Slightly Impacted
Roatan	Sandy Bay	Marine Reserve	Coral Reef	
Roatan	West End	Forest Reserve	Primary Forest	Moderately Impacted
Roatan	Port Royal	National Park	Forest	Highly Impacted
Roatan	Santa Elena	Biological Reserve	Wetlands	Slightly Impacted
Guanaja	Mangrove Bight	Forest Reserve	Wetlands	Slightly Impacted
Guanaja	Michael Rock	National Park	Oak/Pine Forest	Moderately Impacted
Guanaja	Soldier's Beach	National Park	Oak/Pine Forest	Moderately Impacted

PMAIB has suggested that marine protected areas do not provide adequate protection measures and any comprehensive management strategy should also include a maritime privatization program so that communities or individuals will have private property rights (Wiefels et al. 2000a:80). In addition, PMAIB suggests that communities should encourage the development of small businesses or cooperatives (Wiefels et al. 2000a: 81). Finally, PMAIB recommends the implementation of size limitations and restrictions on types of permissible fishing methods (Berthou et al. 2001: 180-184)

Included with PMAIB's management plan are goals to commercialize the local artisanal fisheries in the Bay Islands. They believe that sustainable use of local fisheries for commercial ends will ultimately led to successful management of maritime resources for future generations. However, some challenges remain for commercialization to be effective; perhaps the biggest of which is the need for export quality to be maintained, something that is difficult because of the lack good freezing and storage methods (Wiefels et al. 2000b: 21). PMAIB suggests a need to establish new processing plants or central storage locations in the larger island communities, such as Guanaja, Utila, and on Roatan, Oak Ridge, French Harbour, and Coxen Hole (Wiefels et al. 2000b: 23). PMAIB's proposals for commercialization of artisanal fisheries include the suggestion of using fish attraction devices to attract new target species, especially pelagic fish (Taquet, M. 2001: 14-22).

The primary destination of Honduran seafood exports is the United States market. According to U.S. law, shrimp exporting nations must conform to U.S. regulations concerning fishing methods and the use of turtle excluder devices (TEDs). When the law was originally passed, individual fishing vessels were certified to be in compliance with regulations by representatives of the U.S. National Marine Fisheries Service. If individuals were in non-compliance, then they were prohibited from selling their product. Due to perceived abuses of this system, U.S. law was modified in the early 1990s so that if individuals from shrimp exporting nations were in non-compliance, then economic sanctions would be placed against the entire fishing fleet from that nation.

The impetus for U.S. law regarding shrimp fishing practices originated in the environmental protection movement, which steadily gained steam during the 1980s. One

California-based environmentally-oriented NGO, Earth Island Institute (EEI) took the lead in conservation initiatives for protection of sea turtles. There are seven species of sea turtles around the world and each is in danger of extinction. Threats to sea turtles are numerous, including fishing where turtles are the primary target species, fishing where turtles are by-catch (such as in shrimp fishing), poaching of eggs, and coastal development which results in the destruction of sea turtle nesting areas and light pollution that confuses nesting turtles.

Through lobbying efforts, EEI was successful in changing U.S. law regarding the use of TEDs. Currently, all U.S. shrimp fishermen must use TEDs or face the risk of severe penalties including fines and the loss of their commercial fishing license. In recognition of the fact that much of the seafood consumed in the U.S. is imported, EEI further lobbied to place restrictions on shrimp imports. To encourage the use of TEDs, NMFS held educational seminars in shrimp exporting nations describing how to install devices, their correct use, and potential consequences for non-use. In Honduras, compliance with U.S. regulations is judged at the beginning of the fishing season. In addition, the U.S. Coast Guard frequently stops Honduran vessels at sea. Although Coast Guard activities are conducted under the pretense of narcotics interdiction, compliance with fishing regulations are also gauged.

Historically, Bay Islanders have not been concerned about conserving or protecting turtles. Many fishers used to fish for turtles before international export was banned. When turtles were caught as by-catch on commercial vessels, fishers would often keep the meat for their families at home. Artisanal fishers also catch turtles; in one case, a young Garifuna fisher that I knew brought a juvenile Hawksbill sea turtle to shore

that he had caught while spear fishing. Although this young fisher was my friend, I momentarily stepped out of my role as objective ethnographer and lectured him about the importance of sea turtles. He shrugged it off and gave me the turtle. Since he had caught the turtle by its front flipper (which was, as a consequence, dislocated or broken), and then put it into an ice chest, it was severely traumatized and was coughing up blood. Believing I could nurse it back to health, I filled a wash basin with sea water and set it to recuperate. Somehow it managed to survive the night, so the next day I took it to Roatan's Iguana Farm – a grassroots conservation initiative – where there are holding pens for juvenile turtles. The point of this story is that Bay Islanders' lack of concern for environmental issues left them unprepared to deal with ecologically oriented resource use regulations and they were quite surprised by punitive trade embargoes.

Effects of Fisheries Embargoes

In 2000, Honduras' shrimp industry was sanctioned for not using TEDs, but after NMFS officials gave educational seminars, the sanctions were lifted. The effects of U.S. sanctions were more severe in 2003, when several Honduran vessels were caught in non-compliance of TEDs regulations. An embargo was placed on all Honduran shrimp exports from the capture fishery (Honduras also exports significant amounts of farm-raised shrimp and these were not affected by the embargo). Other countries that lost their export certification in 2003 for shrimp capture fisheries included: Costa Rica, Indonesia, and Venezuela (Brown 2003). In an effort to overcome the shrimp embargo shrimp boat captains met with NMFS representatives to learn about TEDs. Regional sub-director of

NMFS, SolaVarrieta said, “all 93 shrimp boats in Honduras are from the Bay Islands and 60% of the boat captains and owners are also native islanders. Last year, Honduran vessels netted 5 to 6 million pounds of shrimp which sells for an average of $2.20 per pound. This revenue is directly threatened by the American sanctions. There are at least 10,000 people living directly off of the shrimp industry,” said SolaVarrieta (Johnston 2003b).

The shrimp embargo in 2003 had significant socioeconomic impact because many businesses were reluctant to issue credit to shrimp fishermen (Johnston 2003c). After the embargo had begun to have a visible effect on the local economy, Bay Island politicians took up the issue with the U.S. ambassador. Bay Islands’ governor Clinton Everett met with U.S. Ambassador Larry Palmer and asked how they could resolve the shrimp embargo. In reply, the ambassador dodged the question and asked why U.S. citizens were having problems gaining clear land titles in the Bay Islands (Everett 2003). The ambassador’s response raises questions as to whether the embargo was strictly based on ecological and environmental concerns, or if it was partially motivated by other circumstances and was being used as a “bargaining chip” by the U.S. to exert political pressure on Honduras.

As the shrimp embargo continued, many local fishermen voiced complaints about the necessity to use TEDs and about illegal fishing by Nicaraguan vessels in Honduran waters. In addition, many fishermen began to focus on lobster fishing as an alternative to the closed shrimp fishery (Johnston 2003d). With no end in sight for the shrimp embargo, Honduran fisheries were suddenly faced with an additional embargo against the exportation of conch. The conch embargo resulted from a CITES decision that Honduran

fishers were unsustainably extracting a threatened species (Ebanks 2003). The CITES case was originally brought forth by Jamaican interests and also affected fishers from Haiti and the Dominican Republic (Johnston 2003f). There were 12 conch boats in the Honduran fishery, seven from the Bay Islands. Since conch boats carry about 95 fishers, the embargo left a total of 1,140 fishers without employment (Johnston 2003f).

During this time, local officials on Roatan sought out U.S. citizens living on the island to help with ending the embargo. The local Alcalde said that there is a perception that the embargo was being unfairly extended because of land disputes on Roatan. He continued that since only a few violations of TEDs use regulations occurred, the embargo should be ended. Finally, he urged U.S. citizens living on Roatan to write their congressmen and senators in order to suspend the embargo (Johnston 2003f). One of the local Island representatives to the Honduran Congress reflected on the embargo and its economic impact: Evans McNab said that the state of the embargo was sad because people were complying with regulations, but that the embargo was depressing the local economy. McNab continued that because Roatan is entirely dependent on the U.S. for imports and exports, the embargo was causing the fishing industry to die. He suggested that the Island's future lay in tourism, rather than in fishing (Johnston 2003f).

As the U.S. shrimp embargo continued, the Bay Islands fishing industry developed strategies to cope with the economic hardship, including attempts to develop trade ties with European markets (Johnston 2003g). One wealthy Islander used the season's closure to modernize and upgrade his seafood packing plant which provides over 200 local jobs. The Mariscos Agua Azul plant, owned by Albert Jackson, and who founded it in 1977, installed new technology so that it meets both U.S. FDA and

European Union health standards (Anonymous 2003b). In addition, U.S. NMFS officials trained ten Hondurans to serve as inspectors for compliancy in the fishing industry.

Bay Islands conch fishermen also developed new strategies in response to the embargo. They formed a trade union, *Associacion de Caracoleros Independiente de Honduras* (ACIH) to help organize and regulate the industry. ACIH president Saul Arias said that he hopes their measures will resolve the CITES based embargo. Some of these measures include: outlining reserve and commercial fishing grounds, the establishment of guidelines for Honduran catch and export quotas, and implementation of weight guidelines. In addition, all Honduran conch vessels were equipped with satellite tracking equipment in order facilitate monitoring by U.S. officials and to verify that no illegal fishing takes place (Anonymous 2003b).

By the time the U.S. embargo was lifted, nearly the entire fishing season had passed. Bad weather associated with hurricane season (generally October – November in the Bay of Honduras) and from winter storms (December and January) kept much of the fishing fleet in port. The economic damage had been done, at all levels of the local Bay Islands economy. Fishing vessel owners lost significant amounts of revenue for the year. Islanders who participate in the commercial fishing were left without work, as were locals who work in the seafood processing plants.

In order to survive and feed their families, many commercial fishers returned to the Bay Islands artisanal fishery. Often viewed, as their "fall-back resource", the artisanal fishery provided unemployed commercial fishers with limited income for the year. However, increased entry into the artisanal fishery accelerated the process of ecological degradation in the Bay Islands' maritime environment. It is true that many

Bay Islands fishers regularly rotate between the commercial and artisanal fisheries, but the effects of the embargoes disrupted this rotation. As a result, 2003 never witnessed a significant seasonal decline in fishing effort. Some commercial fishers found employment in alternative industries, such as tourism, foreign fisheries (Nicaraguan and Colombian), and in trafficking of contraband narcotics.

The irony of the shrimp and conch embargoes are that they were motivated by environmental ideals, however they served only to shift the focus of ecological exploitation from the Honduran fishing banks to the local Bay Islands' ecosystem. Additionally, the embargoes gave local fishermen a sense of desperation, making them more willing in the short-term to use fishing strategies that were less ecologically friendly. For example, in Punta Gorda, the amount of seafood landed in 2003 was higher than in years prior. Similarly, the number of undersized lobsters landed was greatly increased. So, a fishing embargo that was geared toward protection of the ecosystem actually motivated artisanal fishers to extract more, when possible, for local consumption.

Summary

Maritime resource use practices in the Bay Islands and the management thereof, is not a clear-cut case and influences from artisanal fishing, tourism, environmental groups, and the commercial fishery must all be accounted for in order to develop an accurate picture of management challenges related to use of local maritime resources. Although fishing has been the mainstay of the Bay Islands economy, its importance and overall economic contribution is in decline and tourism is quickly taking its place. However, as

tourism grows, it brings new environmental challenges in terms of use of limited island resources and alteration of terrain for development. Many tourist related businesses are involved in environmental protection efforts because their livelihood depends on sustaining current levels of ecological integrity. Despite their efforts to protect the local reef, many tourist businesses depend on local fishermen who sometimes use destructive fishing practices to maintain an ample supply of product for one of tourists' favorite seaside cuisine: lobster.

There are fish landing sites in all parts of the Bay Islands, but areas that tend to receive less fishing effort are the north coast of Utila, the central southern coast of Roatan, and the waters northeast of Guanaja. There are significant differences in the various fishing communities, including their fishing strategies. The artisanal fishing fleet in Utila is the most capitalized, with most boats using motors larger than twenty horsepower and equipped with modern fishing gear. The fishing fleet in Roatan East (Punta Gorda) is least capitalized; the fleet is generally made up of unmotorized dories and their fishing strategies are traditional. Other regions are characterized by a mixture of these two extremes. In the western part of Roatan, there is less emphasis on artisanal fishing because the area has a greater influence from tourism, with diving boats, tour boats, and sport fishing vessels frequently present. The two most important fishing communities in the Bay Islands are the Cays of Utila and Punta Gorda in Roatan East. In other areas, the fishing is more diffuse. (Berthou et al. 2001: 50)

Although differentiated by a number of factors, such as area fished, level of capitalization, and time commitment to fishing, artisanal fishing and commercial fishing are closely linked. Many fishers participating in commercial fishing, fish artisanally in

their time off, sometimes using similar fishing methods (i.e. spear fishing) in both fisheries. Because of cross over between their work forces, these two fisheries cannot be analyzed separately; when significant events happen in one fishery (such as an embargo against the commercial fishery), it ultimately affects the other fishery (i.e. by increased entry into the artisanal fishery). In areas of the Bay Islands where their artisanal fishery is the least capitalized (such as Punta Gorda), there is a higher likelihood that artisanal fishers will use fast, cheap, low-tech methods of fishing that are unfortunately the least sustainable methods.

Environmental and ecological oriented organizations, both local and international, have good intentions; however because of their broad scope, they sometimes ignore critical aspects of the relationship between tourism, fisheries, and the environment that can potentially lead to social and ecological consequences. Local environmental initiatives for marine protected areas and restriction of spear fishing are commendable, but there are significant numbers of fishers who rely on spear fishing and they would be disadvantaged if one of their economic options were to be eliminated. But given that artisanal fishers are over fishing the Bay Islands' reefs to the point of depletion, what other management option is there? Thus far, efforts to commercialize artisanal finfish fisheries have not met with universal success. International organizations also do not realize the influence their actions have on local socioeconomic situations. The environmentally motivated embargoes against Honduras were completely justified, but indiscriminate implementation of consequences caused innocent suffering and desperation led fishermen to increase their local fishing effort. International organizations do not necessarily have the desire or capability to completely assess the

socioeconomic and ecological ramifications of their policies, but perhaps they should in order to better gauge whether they achieve success or not.

CHAPTER SEVEN

CONCLUSION

In this dissertation, I have demonstrated that Garifuna have been a socioeconomically and politically marginal group of people from the time of their ethnogenesis to the present. I have also demonstrated that, by overfishing, artisanal fishers in the Bay Islands, Honduras – including Garifuna fishers from Punta Gorda – have been partially responsible for local ecological degradation. My central thesis stated that because of their marginal position in social and economic spheres of interaction, Garifuna fishers engage in non-sustainable resource use practices which threaten local ecosystem integrity and ultimately the economic future of the community.

To assess this thesis, I developed three primary research objectives: First, I saw that it was necessary to establish the socioeconomically and politically marginal nature of the Garifuna community. Through ethnographic interviews and a household survey I was able to demonstrate that poverty and sociopolitical marginality influence Punta Gorda residents in their economic decision making processes. Second, I saw that it was necessary to measure how Garifuna fishers affect local ecosystems by their maritime resource use practices. By surveying their fishing practices and interviewing fishers, I was able to gauge the ecological impact of fishers on their surrounding environment. For my final research objective I felt it was necessary to contextualize the place and role of Punta Gorda's Garifuna fishers in regional and international systems of social, economic,

political, and ecological interaction. I was able to approach this objective by assessing the role of Punta Gorda fishers and their relationships to other stakeholders in the context of the larger problem of environmental management in the Bay Islands. In this conclusion, I reiterate major points that I have made throughout the dissertation to demonstrate how the socioeconomically marginal status of Punta Gorda fishers indeed influences them to use non-sustainable resource use practices.

In Chapter Two, I focused on how Garifuna were marginalized in the past. The purpose of including this information in my discussion was to establish the historical foundation for the marginality of contemporary Garifuna. I discussed how various political economic actors exercised their power in attempts to control the Caribbean, in the process marginalizing indigenous groups that lived there. Competition between European states for control of the Caribbean left local populations caught in the middle and, as a result, severely reduced their population, destroyed their political and economic structure, and drastically modified their culture and society. As indigenous societies were marginalized, the Caribbean was left open to colonization by European nations. During this time of rapid change in the Caribbean, two cultures that were in the midst of being marginalized managed to become united into a single culture that was better positioned to resist processes of marginalization.

Shortly after its discovery by Europeans, the populations of the Caribbean were devastated by disease, genocide, and slavery. Arawak were annihilated by European contact and fell out of the picture quite rapidly, but Island Carib remained an important player in the Lesser Antilles. However, as incentives for the establishment of mercantile agricultural colonies grew, Island Carib occupation of fertile islands increasingly became

viewed as a major obstacle to European colonization. In this context, Island Carib became targeted by Europeans and were ultimately marginalized. But the process of marginalization was not quick and the Island Carib were able to put up resistance. On St. Vincent, Island Carib resistance was strengthened by intermarriage with another group of marginalized people, African slaves.

As British colonization of St. Vincent encroached upon Black Carib lands, through deforestation and resource depletion, tensions between the two groups grew. Encouraged by the French, Black Carib eventually attacked the British in an act of resistance to further marginalization. In effect they were used as a pawn by the French to harm British interests in the Caribbean. Eventually, the rise of sugar in St. Vincent required that the British remove the Black Carib from St. Vincent primarily because resource use strategies of Europeans conflicted with (and impaired) resource use strategies of the Black Carib. In the aftermath of conflict, the Black Carib were left completely marginalized because they were deported from their home in St. Vincent to Roatan Island in the western Caribbean.

In Chapter Three I discussed how the recent history and development of the Bay Islands has left the Garifuna of Punta Gorda in a marginal position. This took discussion of the reasons for Garifuna marginality from the distant past and brought it into the present. There was little discussion of Garifuna history in Punta Gorda from the time of their arrival until the twentieth century because of a paucity of information on that subject. Much of the recent development that took place in Punta Gorda resulted from people in the community bringing in money and resources from outside sources. Because of the ecological characteristics of the Bay Islands, local residents never had abundant

resources, aside from maritime resources, to help bolster local development. Lack of resources such as water and available land in Punta Gorda are a major disadvantage to the people living there. As population increases, the potential for depletion of important resources increases as well. As resources decline, those communities that depend on them face increasing risk of impoverishment.

Development in the Bay Islands was stymied by the fact that it remained a frontier between Anglo and Hispanic spheres of influence. This fact denied groups of people living there, such as the Garifuna of Punta Gorda, of economic opportunities. The area remained on the economic and social margins of British society in the Western Caribbean and Spanish-speaking society in mainland Central America. Other groups of people, in addition to Garifuna, immigrated to the Bay Islands throughout the nineteenth and twentieth centuries, but Garifuna remained in a marginal position in the islands. Garifuna were kept marginal in part because of their ethnicity and in part because of the isolated nature of Punta Gorda. In recent history, Punta Gorda's location in Jose Santos Guardiola has been a disadvantage because it is a great distance from the center of economic development on Roatan. Thus, because Punta Gorda has been bypassed by recent tourist-oriented development on Roatan residents of the community are left with few economic opportunities and often lack access to essential services. Both of these factors contribute to the continuation of marginality in the Garifuna community.

In Chapter Four, I narrowed my discussion to focus on the community of Punta Gorda in order to demonstrate further how it is socially, economically, and politically marginal. Based on numbers of people who have no access to basic services, I determined that Punta Gorda was a highly impoverished community. Some of the causes

of poverty in Punta Gorda include lack of opportunities for education and limited subsistence and economic options. Poverty has consequences for the community of Punta Gorda such as in the local population's health and nutrition, their resource use practices, their language and ritual culture

Poverty in Punta Gorda is associated with recent change in subsistence patterns. People have shifted away from a subsistence economy to a market economy. As people from Punta Gorda began to participate in extra-local economies, they typically filled roles as laborers, for example in fishing. As a consequence, Garifuna from Punta Gorda have become dependent of wage labor. This places them at the margins of the Bay Islands economy because they receive little compensation for their work and their jobs are vulnerable to being lost due to unforeseeable events such as embargoes. Participation in the market economy of the Bay Islands has left Garifuna vulnerable to economic exploitation.

Change in subsistence patterns has led, in part, to health concerns which have major social and economic consequences. Health related issues place financial burden on local people and results in a loss of their productivity. In many cases, such as with heart disease and hypertension, diseases in Punta Gorda are preventable, but lack of education and their marginal socioeconomic status keep people from making good health related choices.

Environmental degradation in Punta Gorda affects the community's socioeconomic status and serves to keep them in a marginal position. Many Garifuna residents of Punta Gorda make their living by exploiting the local environment. As a consequence of environmental degradation, the people's ability to make a living is also

diminished. As resources near Punta Gorda become increasingly marginal, the socioeconomic position of the people of Punta Gorda also becomes more marginal. Environmental degradation has resulted from construction projects, from pollution, and from overfishing. The combined effects of these practices has led to damage to the maritime environment, such as increased sedimentation into the reef and the death of coral, fish, and other marine life.

In assessing the case of Punta Gorda is appears that the Garifuna people who live there are clearly socially, economically, and political marginal. In Honduras as a whole, Garifuna have had reduced access to many opportunities, in part due to discrimination. Isolation of Garifuna communities from the rest of Honduran society has also contributed to their marginality. The inclusion of fishers from Punta Gorda into wage labor occupations has made people dependent on the market economy. But population growth and competition for jobs has reduced the economic and social benefits of participation in wage labor jobs. In effect, wage labor keeps Garifuna in a marginal position so that they are forced to make economic decisions to use their marginal resources. In general, the people of Punta Gorda have received few benefits from processes of modernization that have affected other parts of the Bay Islands. Instead they remain in their traditional village which is increasingly positioned on the marginal of Roatan's society and economy.

In Chapter Five, I focused on Punta Gorda fishing tradition. Dating from the time of their arrival to Roatan, Garifuna fishers have depended on the sea for their subsistence. The population of fishers in Punta Gorda consisted of a diverse group: young and old, part-time and full-time, line fishers and spear fishers. The most noticeable change in

Punta Gorda's fishery is that it is in decline from overfishing resulting from the introduction of new fishing technology and increased entry into the fishery. These phenomena occurred because Punta Gorda's fishery is open access and there are no restrictions on fishing practices. In addition, fishers were motivated to increase their fishing effort in order to participate in local markets. Because their participation in Roatan's economy is limited by their marginal social and economic position, Garifuna fishers in Punta Gorda use natural resources that are readily available. When no other subsistence options are available to the fishers of Punta Gorda they "eat off the reef" and depend on artisanal fishing.

The economics of Garifuna fishing have their foundation in the open access nature of the resource. Without any means of regulating resource use, people from Punta Gorda individuals have unrestricted entry to the fishery and are able to increase their fishing effort by using new methods. Because the value of seafood products has increased, fishers from Punta Gorda are motivated to fish more. For example, the value of lobster has increased substantially because there is a large tourists market for its sale. There is no territoriality in the Punta Gorda fishery. This is further proof of the fishery's open access nature and signifies that the fishery is at risk for further problems of increased entry.

Fishers in Punta Gorda had an average income of around $300 per month, most of which resulted from sales of lobster and fish. Although some fishers had other sources of income, the primary way Punta Gorda fishers make their living is by fishing. I found no significant relationship between income and fishing method. The most significant relationship I found was between time commitment to fishing (part-time vs. full-time)

and income. This showed that those who spend more time fishing catch more fish to sell. There was no significant relationship between time spent fishing and CPUE because the fishery was dichotomized between those people who target high value product such as lobster and those who target fish.

During my interviews with Garifuna fishers from Punta Gorda, I obtained multiple accounts revealing that local fishers are aware of ecological degradation and declines within their fishery. Garifuna reported that the amount of lobster has decreased over time and when they are found, their average size is smaller. Many fishers said that too many fish and lobster are being caught so the maritime populations are never able to recover. Fishers also said that they must go further and further from Punta Gorda in order to find product. All of these phenomena are evidence of overfishing within the Garifuna fishery. In spite of these ecological problems, fishers continue to exploit the ocean and reef for its resources. Punta Gorda fishers seemed to hold contradictory beliefs between their perceptions of the status of maritime resources and the reality of resource use. This contradiction gives insight into Garifuna fishers' economic decision making process. They continue to fish because it is their living and because they see little other economic opportunity. Fishing is a strong tradition in Punta Gorda and will continue into the future regardless of whether or not management programs are implemented. Many fishers realize the need to preserve their resources for the future, but they see no other option but to continue fishing unsustainably in a fishery that is already "destroyed". Not until adequate social and economic alternatives are presented to the Garifuna fishers of Punta Gorda will the fishing practices become sustainable

In Chapter Six, I discussed the complexities that underlie the process of managing maritime resources in Punta Gorda and the Bay Islands as a whole. In the management process, one must consider influences from artisanal fishing, tourism, environmental groups, and the commercial fishery. In the past, fishing had been the primary revenue generating area of the Bay Islands economy, but tourism is quickly becoming more important. Many people in the Bay Islands want to manage local marine resources solely for tourism; however they must consider the continued role of fishing and the role of environmental groups.

As tourism grows in its importance to the Bay Islands, it brings new environmental challenges such as how will island resources be allocated. Many tourism related businesses advocate environmental protection in order to protect the reef, which is the Islands' primary attraction. Ironically, many tourist businesses depend on local fishermen who sometimes use destructive fishing practices for their supply of seafood products that tourists like to eat.

There are fish landing sites in all parts of the Bay Islands, with significant variation between different fishing communities, such as in their fishing strategies. Some communities, such as in Utila, have artisanal fishing fleets that are more capitalized than other areas. In Punta Gorda, the artisanal fishing fleet is the least capitalized, with most of the fishers depending on small dories and traditional fishing methods (i.e. hand line or spear gun). In areas of the Bay Islands where their artisanal fishery is the least capitalized (such as Punta Gorda), there is a higher likelihood that artisanal fishers will use fast, cheap, low-tech methods of fishing that are unfortunately the least sustainable methods.

There are clear linkages between the artisanal and commercial fisheries in the Bay Islands although these linkages are differentiated by a number of factors, such as area fished, level of capitalization, and time commitment to fishing. Many fishers participating in commercial fishing, fish artisanally in their time off, thus increasing entry in the local fishery. One of the most important ramifications of the linkages between artisanal and commercial fisheries is that when significant events occur (such as an embargo), what affects one fishery affects the other by increased entry and fishing effort.

Environmental and ecological oriented organizations have had good intentions with their goals of managing the Bay Islands' ecosystem for the future. Unfortunately these environmental groups have sometimes ignored the relationship between tourism, fisheries, and the environment. Although local environmental conservation initiatives are necessary in order to preserve the ecosystem, there are significant numbers of artisanal fishers who rely on that ecosystem. If conservation were to eliminate fishing options, artisanal fishers would be left economically disadvantaged and might not comply with management attempts.

International environmentally oriented organizations have not fully realized the local effects of their policies. The embargoes against Honduras for unsustainably fishing conch and for illegal shrimping practices were justified. Unfortunately, implementation of these embargoes severely affected the local economy and motivated local fishers to increase their fishing effort around the Bay Islands. These embargoes probably did not help environmental causes because they only moved the locus of unsustainable exploitation from one area to another.

In conclusion, the Garifuna of Punta Gorda have occupied a marginal position in the Bay Islands since they arrived to the area in the late eighteenth century. They arrived as a marginalized people, forcibly removed from their homeland and because they have had few social, economic, or political opportunities they have remained marginal. Throughout the twentieth century, Garifuna remained at the margins of greater Honduran society. Even when they became increasingly incorporated into wage labor economies, they remained in disadvantaged positions that were tenuous at best. Many aspects of Garifuna society in Punta Gorda show symptoms of their marginal status, from the condition of their local environment, to opportunities for education, to the loss of their traditional ritual culture.

Garifuna have maintained a tradition of fishing from time before they were involuntarily brought to Roatan. They are a people of the sea, so it is completely natural that Garifuna should continue to exploit their local maritime resources. However, the methods they use to exploit their environment have varying degrees of success and ecological impact. When practiced on a small-scale line fishing can be very sustainable. On the other hand, spear fishing can rapidly exploit a coral reef environment and because of the intensity of effort, it is not sustainable and can lead to severe ecological degradation. When commercial fishers from Punta Gorda were left without employment, they reverted to the artisanal fishery. Increased entry into the artisanal fishery resulted in increased ecological impact in terms of the amount of seafood extracted. Ultimately, economic necessity brought on by the marginal socioeconomic situation of the Garifuna of Punta Gorda leads them to continue to depend on unsustainable methods of fishing and causes ecological degradation.

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APPENDIX ONE

BAY ISLAND MARITIME SPECIES

All of the following information, including photographs of maritime species, was originally published in PMAIB's *Diagnostico de la Pesca Artesanal de Las Islas de la Bahia* (Berthou et al. 2001).

Figure A1.1 *Ocyurus chrysurus* (Yellowtail Snapper)

O. chrysurus is the principal species exploited in the Bay Islands. Due to its long form and habitat which is less deep, this Lutjanid is relatively different from other species in the family. It occupies coastal waters in the west central Atlantic, with a large geographical range, from Massachusetts to southern Brazil, and is particularly abundant in the Caribbean region. It is encountered near the coast to water 180 m deep; frequently near coral reefs. Juveniles have a habitat more coastal than adult; after they are longer than 15 cm, they began to leave coastal sea grasses and inhabit the reefs. They generally eat plankton and benthic invertebrates. (Berthou et al. 2001: 71)

Figure A1.2 *Lutjanus synagris* (Lane Snapper)

L. synagris is a species of medium size (50 cm, 2.6 kg) of the western Atlantic, whose habitat is principally coastal habitat although it can be found in depths up to 400 m. It frequents clear waters near coral reefs, so deep, dark waters limit it. Juveniles develop in areas of little depth. Individuals are frequently encountered in shoals. It is a species that it relatively abundant and is of great commercial importance. It primarily consumes benthic organisms such as shrimp, other crustaceans, and fish. (Berthou et al. 2001: 74)

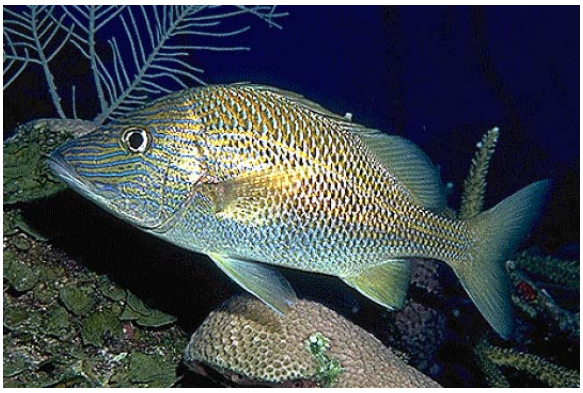

Figure A1.3 *Haemulon plumieri* (White Grunt)

The most common of the Haemulidae, *H. plumieri* is known in all coastal waters of the western tropical Atlantic, from Brazil to the Chesapeake Bay. It is frequently encountered in a great variety of depths up to 200 m, but is common to areas less than 50 m. Generally carnivorous, adults consume benthic invertebrates. It feeds at night and migrates from reefs to sea grass areas. (Berthou et al. 2001: 77)

Figure A1.4 *Caranx ruber* (Bar Jack)

C. ruber is a carangidae of medium size (52 cm, 8.1 kg) and is commonly found in coral reefs. Juveniles frequent zones with abundant algae cover, especially Sargassum sea weed. The species lives near shoals where they reproduce and generally stays in the upper levels of water (above 20 m). It is found from New Jersey and Bermuda to the Gulf of Mexico and southern Brazil. It consumes other fish, decapods, and shrimp. (Berthou et al. 2001: 79)

Figure A1.5 *Epinephelus guttatus* (Red hind, Grouper)

E. guttatus is the most common Serranidae in the Caribbean. In this family, it makes up the intermediate size (57 cm, 3.8 kg). Its zone of distribution is from North Carolina to Venezuela and is encountered near reefs and rocky areas between the coast and 100 m depths. It is a solitary and territorial species that mainly consumes crabs, other crustaceans, fish, and squid. (Berthou et al. 2001: 81)

Figure A1.6 *Lutjanus analis* (Mutton Snapper)

L. analis is a coastal species of Lutjanidae that can reach large size (85 cm, 16 kg). Its geographical range is from Massachusetts to southern Brazil and is normally

abundant on continental shelf areas. Adults live in depths between 25 and 95 m near corals and rocky areas, although juveniles are found in shallow areas of sea grass. This species forms small shoals that disperse at night. Its consumption is diurnal and nocturnal and is generally carnivorous. (Berthou et al. 2001: 83)

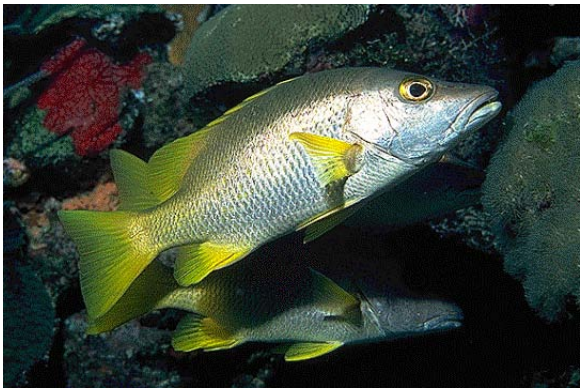

Figure A1.7 *Lutjanus apodus* (Schoolmaster Snapper)

This Lutjanidae of medium size (57 cm, 3.7 kg) is known throughout the western Atlantic from Massachusetts to northern Brazil and is also found on the coast of Africa. It frequents coastal waters with coral reefs and juveniles live in diverse habitats (including sandy banks, sea grass, and mangroves). It generally consumes benthic fish and invertebrates. (Berthou et al. 2001: 86)

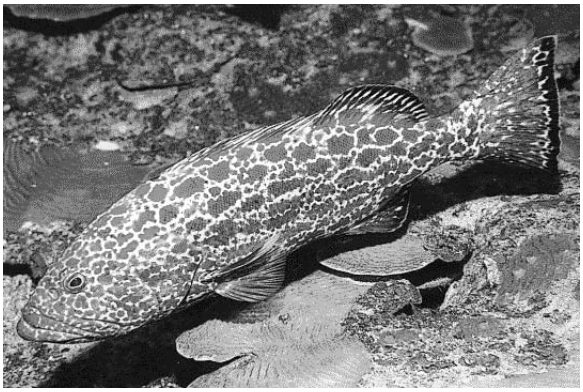

Figure A1.8 *Mycteroperca venenosa* (Yellowfin Grouper)

M. venenosa is one of the western Atlantic Serranidae of large size (90-100 cm, 15 kg) with an area of distribution from Bermuda to southern Brazil. It is rare in the Gulf of Mexico and near the mouth of the Amazon. Adults are frequently found in rocky and coral habitats up to 140 m, while juveniles prefer areas of sea grass and shallow waters. It primarily consumes other fish. (Berthou et al. 2001: 88)

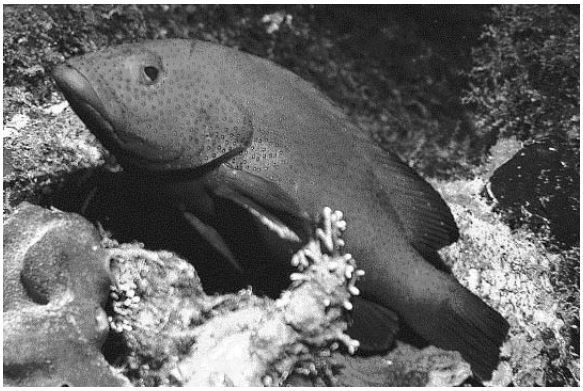

Figure A1.9 *Epinephelus fulvus* (Rock Grouper)

E. fulvus is one of the smallest Serranidae (40 cm) of commercial interest. It is very common in the western Atlantic, especially in the Caribbean, and lives in coastal

waters up to 50 m. It generally consumes benthic fish and small crustaceans. (Berthou et al. 2001: 90)

Figure A1.10 *Sparisoma viride* (Stoplight Parrotfish)

S. viride is a colorful parrotfish of medium size (55 cm). It is common to the central western Atlantic from the southeast US to Brazil, principally in the Caribbean. Like all Scaridae in the Atlantic it is herbivorous, primarily consuming algae found on rocks and dead coral. Its preferred habitat is in shallow areas. (Berthou et al. 2001: 91)

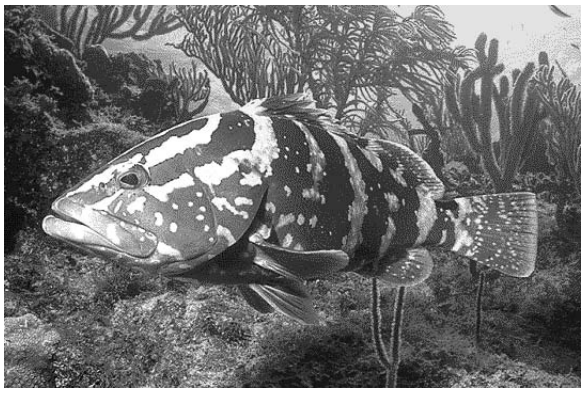

Figure A1.11 *Epinephelus striatus* (Nassau Grouper, Jewfish)

This large (1.2 m, 25 kg) coastal Serranidae is known throughout the tropical west Atlantic, from Bermuda to Brazil. Where over fishing has not decreased its prevalence, it is very common. It lives in coral habitats, near the coast to depths of 90 m, but juveniles live near sea grasses. The species is well-known for schooling of adults which occur during reproduction periods. (Berthou et al. 2001: 92)

Figure A1.12 *Lutjanus vivanus* (Silk Snapper)

L. vivanus is a Lutjanid of large size (80 cm, 8 kg) that is found in deep water (90 to 200 m). It is found throughout the tropical and subtropical western Atlantic. Juveniles are found in shallower depths, up to 30 m. (Berthou et al. 2001: 100)

Figure A1.13 *Lutjanus buccanella* (Blackfin Snapper)

L. buccanella is large (75 cm, 14 kg) and is found in intermediate depths (80 to 150 m) throughout the central western Atlantic. (Berthou et al. 2001: 102)

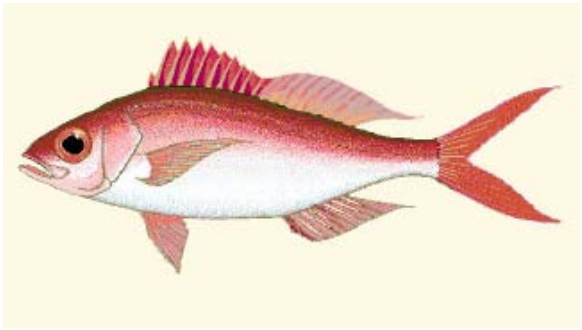

Figure A1.14 *Etelis oculatus* (Queen Snapper)

E. oculatus is one of the deepest living Lutjanidae (135 to 450 m). A medium sized species (60 cm), it is generally caught with deep-sea line. Not much biological information is available about this species. (Berthou et al. 2001: 104)

Figure A1.15 *Rhomboplites aurorubens* (Vermilion Snapper)

R. aurorubens is a Lutjanid of medium depth (50 to 200 m) that lives on continental shelf areas from North Carolina to Brazil. Juveniles are frequently found in shallower depths (25 m). It is a benthic carnivore that consumes fish, crabs, shrimps, and other species. It is medium sized (60 cm, 2.8 kg) and in some areas it is sought out for commercial exploitation. (Berthou et al. 2001: 105)

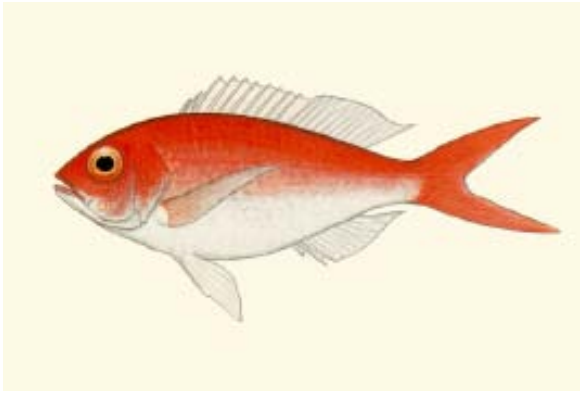

Figure A1.16 *Pristipomoides macrophthalmus* (Squarel)

P. macrophthalmus is one of the deepest living Lutjanidae (100 to 550 m). It is of medium size (50 cm) and is only found in the Caribbean. Because of its small range, it has little commercial interest. (Berthou et al. 2001: 107-108)

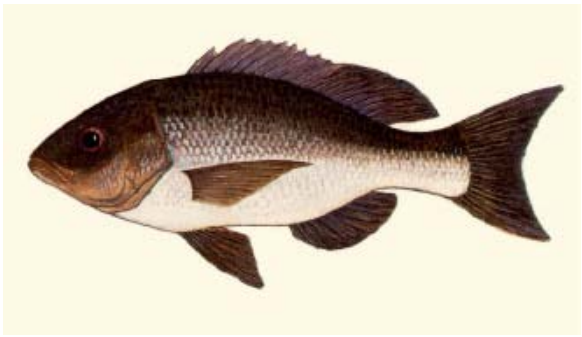

Figure A1.17 *Apsilus dentatus* (Red Snapper)

A. dentatus lives in medium depths (120 to 180 m), is present throughout the Caribbean, and is of medium size (65 cm). In general, it has not been studied much. (Berthou et al. 2001: 108)

Figure A1.19 *Panulirus argus* (Spiny Lobster)

P. argus is the most abundant and most intensely exploited species in the Bay Islands. It is found from North Carolina to Brazil up to depths of 50 m. Adults are usually found near rocks and corals where they feed at night on juvenile conch and small crustaceans. Juveniles are found in coastal areas, especially near sea grass beds and they

migrate to deeper waters as they age. There is a strong relationship between depth and size of lobster. (Berthou et al. 2001: 111)

Figure A1. 20 *Panulirus guttatus* (Queen Lobster)

P. guttatus is the second species of commercial interest in the Caribbean region, but it is not valued as much as *P. argus*. It is found in more coastal habitats (less than 20 m) and is generally smaller in size (8 cm). (Berthou et al. 2001: 114)

Figure A1.21 *Strombus Gigas* (Queen Conch)

S. gigas is the most abundant Strombidae in the Caribbean and can reach a large size (30 cm). Its range is from Florida to Venezuela and is usually found in coastal areas near sea grass. It is primarily herbivorous, but does consume detritus. Its preferred

habitat is usually not deeper than 30 m, but juveniles live in shallow areas. (Berthou et al. 2001: 115)

APPENDIX TWO

PUNTA GORDA SEAFOOD LANDINGS

	Time Fished		March		April		May	
	Days	Hours	Finfish	Lobster	Finfish	Lobster	Finfish	Lobster
Total Averages	87	434	164	24	163	24	160	24
Full-time averages	131	679	226	31	260	33	243	29
Part-time averages	69	333	138	21	123	20	126	22
Line fishing averages	102	513	283	2	274	3	287	3
Diving averages	75	371	67	41	74	41	58	41
Boat Owner average	104	532	200	24	211	24	210	24
Boat Borrower average	49	214	81	23	54	24	49	24
Own boat F/T diving	125	657	88	72	124	75	95	66
Own boat F/T line	135	696	326	2	359	2	351	2
Own boat P/T diving	79	427	60	43	95	46	74	47
Own boat P/T line	89	442	266	2	245	3	273	3
Borr. Boat P/T diving	49	213	58	28	45	28	35	27
Borr. Boat P/T line	50	199	208	3	110	4	121	4
Totals	N/A	N/A	10,629	1,540	10,598	1,557	10,411	1,556
Average Value	N/A	N/A	$15,944	$6,930	$15,897	$7,007	$15,617	$7,002

	June		July		August	
	Finfish	Lobster	Finfish	Lobster	Finfish	Lobster
Total Averages	161	26	120	13	113	13
Full-time averages	255	34	238	26	252	33
Part-time averages	122	22	72	8	56	5
Line fishing averages	288	2	208	2	207	2
Diving averages	59	45	50	22	38	23
Boat Owner average	209	27	158	15	158	18
Boat Borrower average	53	24	35	8	13	3
Own boat F/T diving	102	78	123	60	95	76
Own boat F/T line	367	2	321	1	366	2
Own boat P/T diving	70	55	50	24	52	26
Own boat P/T line	258	2	150	2	126	1
Borr. Boat P/T diving	38	28	28	9	11	4
Borr. Boat P/T line	145	3	85	3	31	0
Totals	10,476	1,669	7,831	843	7,353	871
Average Value	$15,714	$7,511	$11,747	$3,794	$11,030	$3,920

	September		October		November	
	Finfish	Lobster	Finfish	Lobster	Finfish	Lobster
Total Averages	131	27	150	24	173	23
Full-time averages	258	34	243	28	301	25
Part-time averages	79	24	111	23	120	22
Line fishing averages	219	2	247	3	309	2
Diving averages	61	47	72	42	64	40
Boat Owner average	173	28	183	24	226	23
Boat Borrower average	39	24	75	25	54	24
Own boat F/T diving	107	79	87	65	111	58
Own boat F/T line	367	2	356	2	439	2
Own boat P/T diving	69	54	68	51	74	47
Own boat P/T line	144	2	189	4	245	2
Borr. Boat P/T diving	38	27	65	28	37	28
Borr. Boat P/T line	46	5	136	3	149	3
Totals	8,547	1,742	9,736	1,576	11,243	1,495
Average Value	$12,821	$7,839	$14,604	$7,092	$16,865	$6,728

	December		Total Landings		
	Finfish	Lobster	Finfish	Lobster	Total
Total Averages	159	24	1495	221	1716
Full-time averages	254	29	2,529	303	2,832
Part-time averages	120	22	1,068	188	1,255
Line fishing averages	273	2	2,594	22	2,617
Diving averages	67	41	609	382	991
Boat Owner average	202	23	1,929	229	2,158
Boat Borrower average	63	26	517	204	722
Own boat F/T diving	87	65	1,019	694	1,713
Own boat F/T line	375	2	3,627	19	3,646
Own boat P/T diving	74	44	685	436	1,122
Own boat P/T line	226	2	2,123	24	2,147
Borr. Boat P/T diving	51	31	405	236	641
Borr. Boat P/T line	133	2	1,163	29	1,192
Totals	10,342	1,540	97,166	14,389	111,555
Average Value	$15,513	$6,930	$145,749	$64,751	$210,500

	Total Income			Avg. Monthly Income	
	Finfish	Lobster	Total	USD	Lempira
Total Averages	$2,242.29	$996.16	$3,238.45	$324	L. 5,505
Full-time averages	$3,793.34	$1,363.97	$5,157.32	$515.73	L. 8,767.44
Part-time averages	$1,601.64	$844.24	$2,445.88	$244.59	L. 4,158.00
Line fishing averages	$3,891.41	$100.40	$3,991.81	$399.18	L. 6,786.08
Diving averages	$913.83	$1,717.75	$2,631.58	$263.16	L. 4,473.69
Boat Owner average	$2,894.00	$1,030.30	$3,924.30	$392.43	L. 6,671.31
Boat Borrower average	$775.95	$919.35	$1,695.30	$169.53	L. 2,882.01
Own boat F/T diving	$1,528.31	$3,124.13	$4,652.44	$465.24	L. 7,909.14
Own boat F/T line	$5,440.64	$83.86	$5,524.50	$552.45	L. 9,391.65
Own boat P/T diving	$1,028.19	$1,963.04	$2,991.23	$299.12	L. 5,085.09
Own boat P/T line	$3,184.60	$106.80	$3,291.40	$329.14	L. 5,595.38
Borr. Boat P/T diving	$607.78	$1,062.00	$1,669.78	$166.98	L. 2,838.63
Borr. Boat P/T line	$1,745.00	$129.00	$1,874.00	$187.40	L. 3,185.80
Totals	$145,749.00	$64,750.50	$210,499.50	$21,050	L. 357,849
Average Value	$2,242	$996	$3,238	$324	L. 5,505

	Avg. CPUE		Avg. Income	
	(pounds/day)	(pounds/hour)	per trip	per hour
Total Averages	19.72	3.95	$37.22	$7.46
Full-time averages	21.69	4.17	$39.50	$7.59
Part-time averages	18.19	3.77	$35.44	$7.34
Line fishing averages	25.59	5.10	$39.04	$7.78
Diving averages	13.26	2.67	$35.21	$7.10
Boat Owner average	20.74	4.06	$37.72	$7.38
Boat Borrower average	14.82	3.37	$34.81	$7.91
Own boat F/T diving	13.69	2.61	$37.18	$7.08
Own boat F/T line	27.10	5.24	$41.06	$7.94
Own boat P/T diving	14.26	2.63	$38.04	$7.01
Own boat P/T line	24.10	4.85	$36.95	$7.44
Borr. Boat P/T diving	13.21	3.02	$34.41	$7.86
Borr. Boat P/T line	24.00	6.00	$37.73	$9.43
Totals	N/A	N/A	N/A	N/A
Average Value	N/A	N/A	N/A	N/A

APPENDIX THREE

LAND DEGRADATION AND EROSION IN PUNTA GORDA

A major challenge to construction in Punta Gorda, and Honduras in general, is steep terrain with loose soils that are easily eroded during heavy tropical downpours. When Hurricane Mitch hit in 1998, it was landslides that caused the most death and destruction, not the wind or storm surge. As available land in Punta Gorda becomes increasingly rare, residents build on hillsides, oftentimes significantly modifying the terrain without consideration of how water will run off.

During my stay in Punta Gorda from 2003 to 2004, I witnessed several landslides that affected local community structures and I was personally affected. Some structures that were destroyed or damaged included: Punta Gorda's community center, the local Kindergarten building, a landslide which nearly blocked the road through the community, and massive erosion which destroyed two houses in Invacíon (one of which I had rented).

Figure A3.1 House before erosion

Figure A3.2 House after erosion (the roof was intentionally salvaged)

When I moved into my rented house in Invacíon, it seemed to be well constructed and in good condition (see Figure A3.1), however after the impacts of erosion it was less than habitable (see Figure A3.2). The problem was that when Invacíon was constructed, many large trees were cut down, the hillside was terraced (but without retaining walls), the original intermittent stream course (*Quebrada Lagarto)* was filled in, and a road was built which tended to act as an alternative stream bed (see Figure A3.3). When I first arrived at my house (labeled 'casa' in each figure), I was aware of the potential for erosion, having noticed that fissures were starting to form (see Figure A3.4), but since I did not realize how dangerous the location actually was and because it was the dry season, I set up my residence. In late September and early October, the rains started to come and fissures near my house started to expand and deepen (see Figure A3.5). Especially after the cement floor of my house began to crack, I decided it was time to move. Fortunately, I was able to find an available house in Barrio Punta Gorda. As the rainy season continued, the fissures continued to expand and deepen and eventually caused part of my now former residence to collapse (see Figure A3.6). In addition, the fissures destroyed my neighbor's house and caused their septic tank to turn nearly thirty degrees. Since they did not have the same financial resources that I had available they were forced to abandon their house and take up residence with relatives. All the hillside of Invacíon continued to erode, it caused a landslide which nearly destroyed Punta Gorda's Kindergarten and significantly contributed to sedimentation of lagoon at the stream's outflow to the sea.

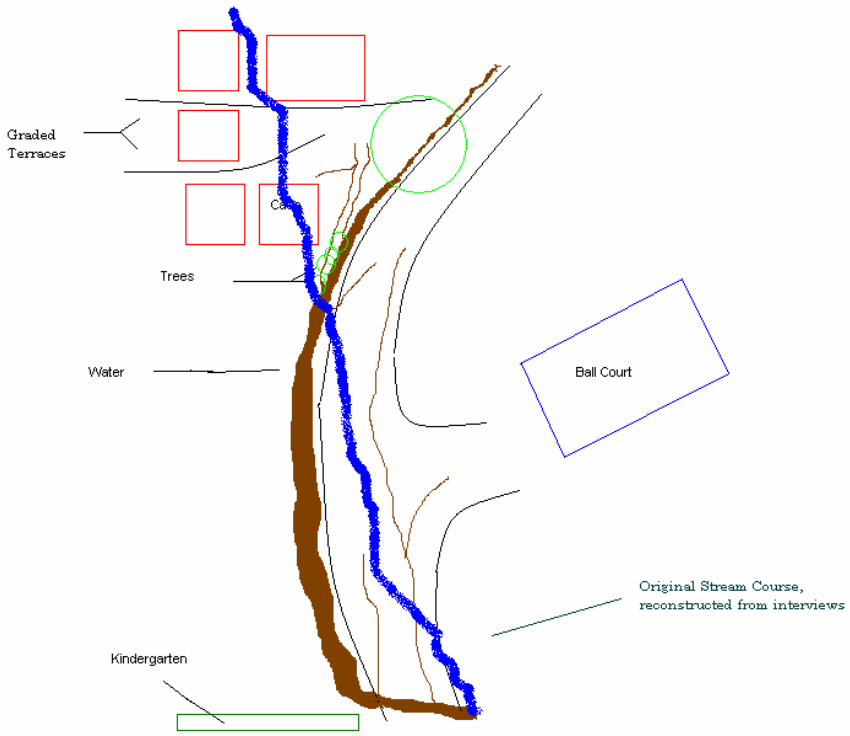

Figure A3.3 Invacíon with original stream course superimposed

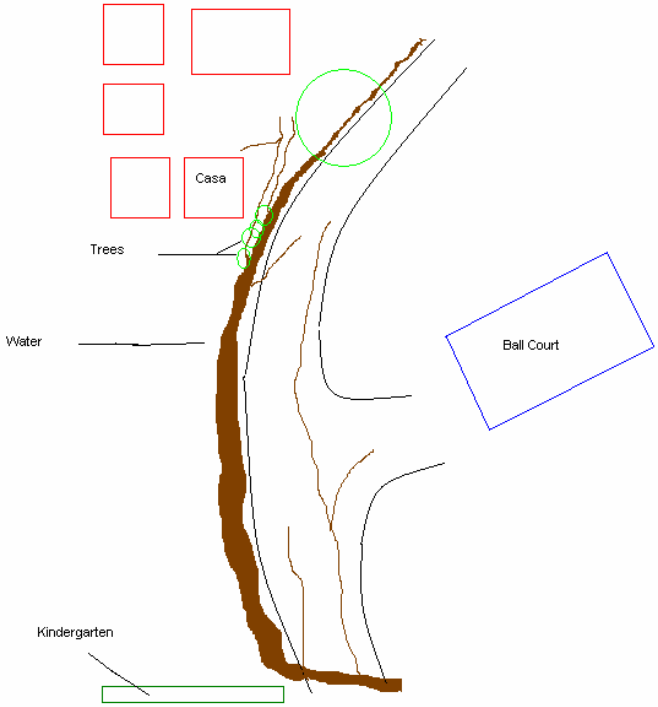

Figure A3.4 Invacíon when upon arrival

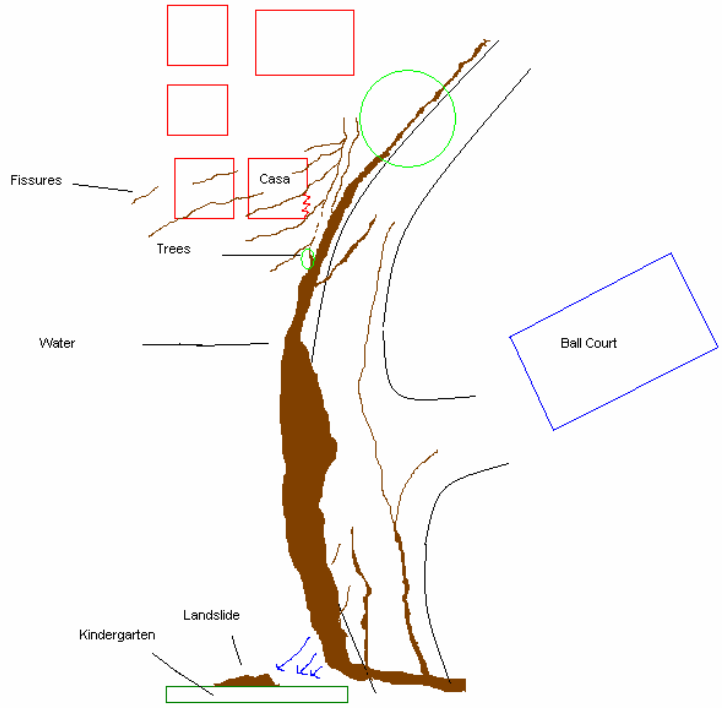

Figure A3.5 Invacíon shortly after evacuation

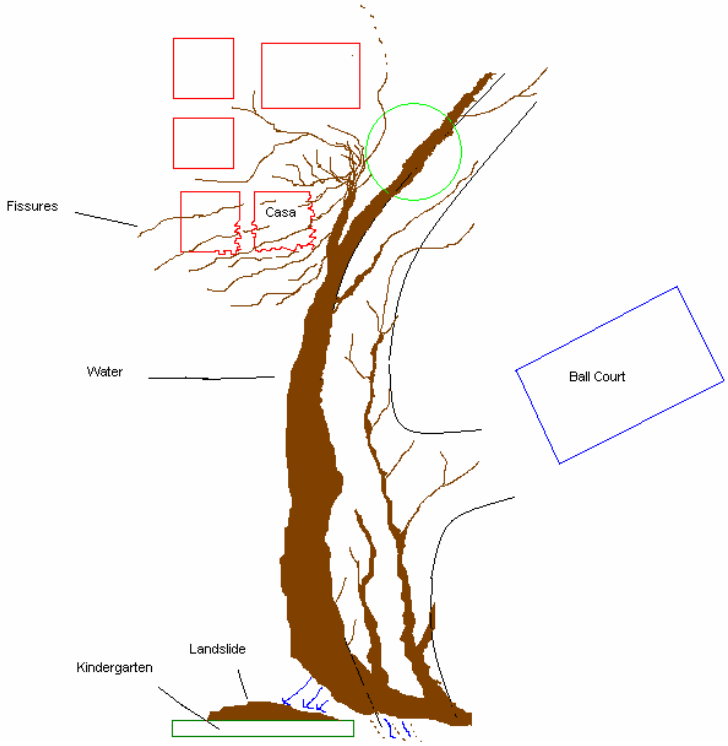

Figure A3.6 Invacíon currently