UNIVERSITY OF CALIFORNIA

SANTA CRUZ

# RE-MAKING LIVES ABROAD: LIFESTYLE MIGRATION AND SOCIO-ENVIRONMENTAL CHANGE IN BOCAS DEL TORO, PANAMA

A dissertation submitted in partial satisfaction
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

In

ENVIRONMENTAL STUDIES

By

**Ana K. Spalding**

June 2011

The Dissertation of Ana K. Spalding
is approved:

_____
Associate Professor Jeffrey Bury, Chair

_____
Professor Mark Carr

_____
Professor Gregory Gilbert

_____
Professor Daniel O. Suman

_____
Tyrus Miller
Vice Provost and Dean of Graduate Studies

*TABLE OF CONTENTS*

## *LIST OF TABLES AND FIGURES*

*ABSTRACT*

**Re-making Lives Abroad: Lifestyle migration and socio-environmental change in Bocas del Toro, Panama**

The globalization of travel, technology, markets, and ideas is rapidly transforming Latin American cities and rural landscapes. In particular, new migration patterns affect local livelihoods, cultures, and natural ecosystems through changes in land tenure arrangements, alternative employment opportunities and growing economic disparities, and land cover change due to new forms of land use. Lifestyle migration constitutes one such migratory phenomenon, and is typically characterized by flows of relatively affluent people from developed to developing countries, searching for so called 'lifestyle' destinations, with warm climates, cheaper costs of living and perceived higher quality of life. Ideal lifestyle migration destinations include rural and environmentally sensitive locations throughout the developing world, such as the Bocas del Toro Archipelago in northwestern Panama.

Socio-economic and cultural differences between individuals of the countries of origin and destination, and imported attitudes and behaviors have significant impacts on natural resources and human communities. Informed by existing debates within migration studies, political ecology, and human-environment research, my research explores lifestyle migrants' reasons for moving to and experiences of living in Bocas del Toro, local perceptions of socio-environmental change, and evaluates associated land cover changes throughout the archipelago.

## *DEDICATION*

For all the people of Bocas del Toro, foreign and local

## *ACKNOWLEDGEMENTS*

"Life happens while you're doing your PhD"
- Dr. Jeff Bury

This dissertation is the result of almost six years of work, during which my life, indeed, happened. In this sense I would like to express my gratitude to all those who supported me both academically and personally throughout the various stages of this process. I am particularly grateful to Dr. Jeffrey Bury, my main academic advisor, for his consistent support, challenging questions, attention to detail, and confidence in my work, as well as for offering his friendship and understanding. I would also like to express my gratitude to Dr. Mark Carr, Dr. Gregory Gilbert, Dr. Alan Richards, and Dr. Daniel Suman for their time and attention as committee members, in helping me reach the various milestones required for the degree through the provision of excellent feedback, comments, and encouragement. The administrative staff of the Environmental Studies Department was also key in helping me navigate the logistics of this process.

My cohort also contributed significantly to this achievement, through the provision of unconditional peer support both by expanding my intellectual curiosity based on the variety of research interests and directions, and by sharing the pleasures and pains experienced personally during this process. In particular, I would like to thank my

office mate, Dr. Sean Gillon, for his patience, time, and sense of humor. His vision, attitude, and the quality of his work always served as an inspiration to improve my own writing and research.

I am extremely grateful for the Smithsonian Tropical Research Institution's (STRI) Bocas Research Station Staff 's (especially Gabriel, Plinio, and Urania) unconditional support during the fieldwork stage of this endeavor, and to my STRI Short-term fellowship advisor Dr. Fernando Santos-Granero for his exceptional input during the fellowship and in preparing grant proposals. Most importantly, during my time in Bocas del Toro, I would especially like to thank the people of Bocas del Toro, both local and foreign, for their time and willingness to share personal stories.

And of course, neither the completion of this dissertation, nor associated life experiences, would have been possible without funding from the Panamanian government through its IFARHU-SENACYT academic excellence fellowship program, UCSC Environmental Studies Department grants, and the Center for Tropical Research in Ecology, Agriculture, and Development (CenTREAD) grants.

Lastly, I would like to thank my friends and family for believing in me. My mom, who did everything in her power to make the environment in which I worked "easy", from visiting me in California when I felt unable to continue, to sending me tea and

care packages of goods not available in Bocas. My father and sisters I would like to thank for listening to me and keeping life in perspective, and my Tío Ricardo and Tía Melissa for believing in me enough to act as co-signers on my grant. In particular, I extend my warmest thanks to my husband, Michael, for his undying patience, daily doses of English humor, amazing food, and the encouragement and support required for the last stages of the dissertation. And, of course, I must send the biggest thanks to the newest and most amazing addition to my life, my daughter Lily, for providing the inspiration to finish and re-defining the meaning of "due date".

GRACIAS!

# Chapter 1. INTRODUCTION

## RE-MAKING LIVES ABROAD: LIFESTYLE MIGRATION AND SOCIO-ENVIRONMENTAL CHANGE IN BOCAS DEL TORO, PANAMA

### I. INTRODUCTION AND PROBLEM STATEMENT

Travel, culture, media, and the environment are interconnected elements of an increasingly complex globalization process that influences economic, political, and socio-environmental outcomes throughout the globe (Urry 1999). One particular manifestation of this process is the emergence of new migration patterns that are shaped by the attraction to an idealized life, away from the monotony of daily practices. This lifestyle is produced by the media, reproduced by promoters and developers, and consumed by individuals in the search of alternative places to live. On the ground, upon migrating, these same actors then consume, not only the idea, but also the local culture and natural resources through increased demand for services and infrastructure, alternative employment opportunities, growing economic disparities, and new forms of land use. Such destinations often include less developed countries with warm climates, cheaper costs of living, a perceived higher quality of life, and more diverse cultures (Benson and O'Reilly 2009). The economic growth potential of becoming a 'lifestyle' destination is increasingly appealing to less developed nations around the world, especially those who embrace capitalism and have adopted neoliberal economic development policies to increase sources of foreign

investment. One such location is the Bocas del Toro Archipelago in Northwestern Panama. At a national level, a series of laws were approved through which the Panamanian government has facilitated the promotion of the country as an ideal place for real estate and tourism investment, retirement, and leisure lifestyle (MPI 2006). At the local level, in addition to national regulations, the convergence of a set of political, economic, and natural factors such as cheap land and labor, historical political and economic marginalization, and natural landscape beauty make the Bocas del Toro Archipelago an ideal location for such activities.

The emergence of the archipelago on the international tourism and investment map has, over time, led to a set of changes that include a growing economy, land conflicts, the widespread influence of foreign attitudes and behaviors on local cultures, and alternative forms of land use. Given the increase of the foreign population in Bocas del Toro since the late 1990s, my research explores the phenomenon of lifestyle migration to Bocas del Toro. Specifically, it theoretically and empirically links new forms of migration with changes in the local social and natural environment, in the context of a broad political economy.

The narrative presented in this dissertation mirrors many ongoing transformations throughout the world that are heavily influenced by the increasingly global reach of capitalism (Harvey 1990). Those transformations processes, in some cases, have led

to new lifestyle migration patterns with ensuing implications for the host country. My analysis of complex and simultaneous processes of interactions between people and places provides a lens through which it is possible to observe how the different layers of political and economic interests and geographical imaginaries affect a particular location (Hall and Williams 2002). In order to make sense of the various components of the process, this dissertation is primarily concerned with three theoretically and geographically linked questions: (1) What are the motivations, strategies, and implications of lifestyle migration to Bocas del Toro? (2) How do the various local communities perceive the recent residential boom in Bocas del Toro, and what are the associated social and environmental changes? And (3) what are the land cover changes associated with lifestyle migration to Bocas del Toro?

Each of these research questions is explored individually in the three chapters of my dissertation. In Chapter 2 I explore a global scenario of new forms of migration. In this chapter I focus on the migrants themselves, and on the different strategies used to migrate, adapt, and integrate to their new home. In Chapter 3, I present local perspectives on social and environmental change. Informed by political ecology literature, I argue that these changes reflect uneven forms of development. Finally, in Chapter 4 I adopt a human-environment approach to the analysis of the various social processes that affect land cover change. In both Chapters 3 and 4 I focus on the local

scale by outlining the various ways in which local social and environmental features are being affected by lifestyle migration.

## II. JUSTIFYING AN INTERDISCIPLINARY APPROACH: LINKING LIFESTYLE MIGRATION, POLITICAL ECOLOGY, AND HUMAN-ENVIRONMENT RESEARCH

Calls for further research within each field of inquiry highlight the need for an interdisciplinary approach and evidence the theoretical links between the three chapters outlined above. For instance, existing literature on lifestyle migration calls for further research on the uneven social and environmental impacts of such moves at the local level (e.g., McCarthy 2008, Gosnell and Abrams 2009). Conversely, a political ecological approach to local perspectives of change identifies the need for broader explorations of the national and international political economic factors that contribute to change, such as new forms of migrations (e.g., Blaikie and Brookfield 1987, Bryant and Bailey 1997). Finally, a human-environment research approach to the study of land cover change highlights the need for more in-depth studies of the social forces that affect change as well as stronger evidence of such change (e.g., Lambin et al. 2001, Walker 2005). In order to explore these interdisciplinary links, in the following section I briefly describe each discipline and how it theoretically and empirically ties in to the broader narrative of this research.

The study of international migration is usually organized thematically. Recognizing the challenges of building a comprehensive interdisciplinary body of work that includes comparative analyses and contributes to the creation of theories of transnational migration, in *Migration Theory: Talking across disciplines*, Brettel and Hollifield (2000) call for a more unified field of study. The authors highlight the various approaches used to study human movements in seven distinct disciplines, namely history, demography, economics, sociology, anthropology, political science, and legal studies. My study of transnational lifestyle migration focuses on the movement of relatively wealthy individuals from developed countries to mostly rural settings in less developed regions, in search of an alternative way of life. As such, it incorporates Brettel and Hollifield's (2000) definition of sociological and anthropological approaches to migration studies by perceiving these movements as a social phenomenon imbued with concerns for social adaptation strategies that have an effect on the creation of identities in both the origin and destination countries. Additionally, Brettel and Hollifield's (2000) explanation of the political science approach to migration studies provides a lens through which it is possible to account for the enabling structural political economic forces at work in both origin and destination countries. My dissertation contributes to the field of lifestyle migration by constituting one of the few regional case studies that explores new forms of migration to Bocas del Toro in terms of the reasons for moving, and the use of various migration and integration strategies. It also contributes to the overall narrative of the

dissertation by theorizing the attitudes and practices of lifestyle migrants as the main drivers of change in the Bocas del Toro archipelago, and situating them within a context globalization, neoliberal ideologies, and the idealization of lifestyles destinations.

In the field of political ecology, change is influenced by the ways in which individuals experience, influence, and are affected by shifting natural resource regimes (Bryant and Bailey 1997, Robbins 2004). As such, my exploration of local responses to lifestyle migration reveals culturally differentiated local perspectives on social and environmental change. Political ecology also helps to understand lifestyle migration as a phenomenon that is occurring, partly, in response to national development policies aimed at increasing foreign direct investment. As a discipline that "combines the concerns of ecology and a broadly defined political economy" (Blaikie and Brookfield 1987, p. 17), Third World political ecology's thematic and theoretical contributions confirm the generally agreed notion that new forms of development often lead to unequally distributed benefits among the local population. This approach also embraces a scalar approach, which generates a more nuanced perspective of change by contextualizing the Bocas del Toro archipelago as a highly diverse and geopolitically isolated area within the Republic of Panama. Existing political ecology literature also confirms my portrayal of land tenure conflicts and the emergence of new economies as ultimately re-enforcing poverty and existing social

structures in the Third World (see Bryant and Bailey 1997, Peet and Watts 2004). As the broader scope of this dissertation empirically and analytically takes place at the articulation between First and Third world political ecology, I suggest that cultural differences between individuals of the countries of origin and destination are of particular importance, given the potential impacts of imported attitudes and behaviors on natural resources and human communities (McCarthy 2005).

Finally, the analysis of land cover change presented in Chapter 4 constitutes a case study of the social dimensions of landscape change, and adopts a human-environment research approach. It is empirically complements previous chapters by analyzing the various ways in which lifestyle migration materially affects natural landscapes. The identification of an increase in total forest cover in the Bocas del Toro Archipelago between 1986 and 2008 constitutes an important finding for the region and an important contribution to human-environment research in Panama. Barbier, Burgess, and Grainger (2010) suggest that changes in the value of land are closely associated with the changes in land use that ultimately affect land cover, potentially contributing to the regeneration of forested areas. They also suggest that assigning these values is a complex process that is subjected to volatile markets and economies, and diverse cultural associations with natural resources. These contributions to the concept of forest resurgence theoretically link my study of land cover change with political ecology's concern for social and economic justice in the face of cultural diversity.

## III. EPISTEMOLOGY AND RATIONALE FOR A COMBINED QUALITATIVE-QUANTITATIVE METHODOLOGICAL APPROACH

In order to generate a narrative of change based on complex social interactions between and within human communities, the environment, and the broader political economy, I adopted an interdisciplinary approach that combined remote sensing analytical techniques with qualitative social science research tools. Quantitative data derived from a remote sensing-based land cover classification served to analyze the location, distribution, and direction of land cover change over time.

On the other hand, the use of qualitative data, obtained through ethnographic research methods that included interviews, surveys, and participant observation, was of particular importance to this dissertation for two reasons. In the first place, the three fields of study that informed this research; migration studies, political ecology, and human-environment research, explicitly call for the use of ethnographic data generation and analytical approaches (McHugh 2000, Lambin et al. 2001, McCarthy 2005, Sloan 2010). This approach enabled me to capture in-depth perspectives about ongoing changes, and about the actors themselves, portraying the various mechanisms through which different groups stand to benefit or lose from the current situation. Additionally, as McCarthy (2005) points out, political ecology allows for and is benefited by the inclusion of "our own 'geographic imaginaries,' not just the dominant ones 'out there' in the regions we study" (p. 955). Therefore, as a Panamanian researcher conducting fieldwork in my country of origin, my

appreciation for ongoing changes and personal understanding of the cultural and political nuances provides validity and depth to this study. And, as McCarthy suggests (2005), it reduces the "power imbalances between the researcher and the researched ... [and the] enormous spatial separations between the production and consumption of case studies" (p. 955). Secondly, my epistemology is influenced by the tradition of humanism that suggests there is no absolute truth. Humanists believe that each person defines his/her own truth through individual meanings ascribed to social interactions (Bernard 2006). As such, my search for answers about the processes involved in the creation of idealized lifestyles in tropical island destinations, the perceptions of social and environmental change, and the social dimensions of land cover change merited an exploratory and descriptive approach that allowed for the generation of a narrative on the local dynamics of global mobility. The data gathering and analytical methods used in this dissertation are a reflection of this humanist tradition in that they enabled me to elicit and critically analyze the culturally diverse perceptions of change as told during interviews with both foreign and local residents. Foreign resident survey responses and local expert interviews about land cover change complement the narratives derived from the interviews, and help explain how symbolic lifestyle attitudes and perceptions of change translate into material environmental outcomes.

## IV. SUMMARY OF RESULTS BY CHAPTER

In Chapter 2 I evaluate lifestyle migration to the Bocas del Toro Archipelago. I found that lifestyle migrants' attitudes and behaviors towards their new home were based on previous experiences and life histories, as well as on their motivations for migrating. Furthermore, decisions to migrate involved both structural (political economic) and personal motivations. In the case of Bocas del Toro, structural factors included stable politics, a rapidly growing economy, relative safety, and the existence of national-level incentives to attract foreign residents and investors. Personal motivations, on the other hand, included a search for a relaxed lifestyle, cheaper costs of living, aesthetically pleasing landscape, and the novelty of living among a different culture. Based on lifestyle migration literature, I theorize that the combination of personal histories and the globalized ideal of tropical living creates a "migrant gaze" through which life abroad is experienced in contrast with previous realities. I this context I suggest that this idealized lifestyle often does conform to reality and is increasingly leading to conflicts between foreigners, and between foreigners and locals. This is true particularly for recent migrants. In contrast with early arrivals' opportunistic encounter with Bocas, more recent migrants (those who arrived within the past six years) expressed a more critical view of their new home, as a reflection of unfulfilled expectations of their specific decision to migrate to Bocas del Toro. Although most foreign lifestyle migrants shared a common culture, language, and desire to re-make their lives abroad, local-level experiences (in terms of interactions with locals,

adaptations, and migration strategies) differed according to individual behaviors and attitudes towards their new home.

In Chapter 3 I describe local perspectives on social and environmental change that are directly related to the arrival of foreign residents to the Bocas del Toro Archipelago. Based on data gathered through in-depth semi-structured interviews, I suggest that ensuing changes can be explained in terms of land tenure arrangements, new economies, the environment, and cultural diversity. First, I found that changes in land tenure arrangements are affecting all residents, foreign and local. Given a current legal impasse and bureaucratic restrictions, it is not clear that land conflicts will be readily resolved. However, my research also reveals that politically and economically powerful groups stand to benefit from future land policies, while indigenous communities within the archipelago have a clear disadvantage in negotiating and obtaining their claims to land. Secondly, economic growth in the archipelago has resulted in increased employment opportunities for the local population. However, the disproportionate number of foreign-owned businesses suggests that there is both a reduction in future options for and a displacement of local enterprise. Rapid economic growth has also led to a dearth of available skilled labor and has elevated costs of living, while simultaneously failing to update existing infrastructure in support of growing demands on public services such as potable water, sewage, and solid waste management. The third point refers to environmental changes. These were difficult to

assess, as, with the exception of locals who relied on natural resources for subsistence, most respondents did not seem aware of any significant changes. My research suggests that this apparent apathy towards environmental concerns is due to relative lack of direct involvement with or dependence on natural resources. In other words, because documented threats such as illegal turtle fishing, sand extraction, and coral reef destruction are occurring outside of the realm of their daily experiences, their importance is overlooked. However, in this chapter I also point out that perceptions of change differed across ethnic groups due to, language, cultural-specific experiences and use of natural resources, and historical formation of identities.

The fourth and final chapter of my dissertation includes an analysis of land cover change between 1986 (prior to the arrival of lifestyle migrants) and 2008. The land cover change study presented in Chapter 4 revealed that all land cover categories (forest, mangroves, grasslands, and human communities) exhibited an increase in cover, except for bushes. At the finer scale of political subdivisions, findings reflect additional important localized processes as a result of the various social, demographic, and economic influences. Therefore, in this chapter I suggest that lifestyle migration processes have landscape-level impacts, and may contribute to a resurgence of forest cover. Acknowledging the need for further research, I also suggest that it is necessary to carefully evaluate the promotion of lifestyle migration as a development and conservation strategy that unequivocally leads to forest

regeneration. Indeed, further baseline research needs to be conducted on the ecology, use, and conservation status of natural resources in the archipelago, as well as on the local-specific social, political, and economic mechanisms through which land cover is being transformed.

## V. BOCAS DEL TORO: A BRIEF STEP BACK IN TIME

In order to understand how the recent influx of foreigners has affected the archipelago, the narrative necessarily takes into account the various factors that have shaped the archipelago prior to the arrival of the first lifestyle migrants approximately twenty years ago. These factors include a 500-year old history of migration, ethnic diversity, and conflict over natural resources between indigenous inhabitants, European explorers, West Indian migrants, and modern day transnational corporations, an economic record of dependence on the United Fruit Company, and a political environment of marginalization and abandonment by the central Panamanian government (Marín Araya 2004, Araúz 2007). The following section provides this historical context as a way of understanding how the confluence of national and international events and policies helped shape modern-day Bocas del Toro.

Panama's role as place of transit, from which conquest-based expeditions were launched in search of precious metals was clearly established in the early stages of the

conquest of the Americas. Geographical location and abundant natural resources, in part, determined this role. The rest of the country was thence designated as central to the provision of food (Castro Herrera 2008). The Bocas del Toro Province, due to its geographically remote and isolated location, ethnic diversity characterized by internal conflict, lack of gold and other precious metals, and difficult topographic, geographic, and climatic conditions, was unable to easily contribute to that function. As a result, it followed a pointedly different development path than the rest of the country (Marín Araya 2004). Instead, the region consistently experienced localized conflict between various ethnic groups over access to resources that were primarily used for subsistence (Araúz 2007). As Araúz (2007) suggests, Bocas del Toro constitutes a peripheral or marginal region, whose broad networks with the greater Caribbean, the United States, and Europe helped to set it aside as a unique place within the Isthmus of Panama. The archipelago has also undergone a series of population cycles, related to diverse colonization processes. In particular, according to Araúz (2007), Marín Araya (2004), Bourgois (1994), and Stephens (2008), the main events to influence the demographic structure and the political economy of the archipelago were the arrival of the Spanish conquerors in 1502, the conflicts between local indigenous groups and the Miskito Indians from Honduras and Nicaragua in the 17$^{th}$ and 18$^{th}$ century, the construction of the trans-Isthmian railroad and the Panama Canal between 1850 and 1914, and the hegemony of the United Fruit Company in the late 19$^{th}$ and 20$^{th}$ centuries.

The arrival of Christopher Columbus to the coast of what is now Bocas del Toro, in 1502, set off a geographic redistribution of the local population. At this time, due to Spanish colonization efforts, originally coastal inhabitants, the Dorasques, Chánguenas, Térrabas, and Guaymí Indians migrated south to the mountainous areas of the province, and east to the Valiente Peninsula. The first two groups disappeared, while the remaining indigenous communities of the coastal and insular areas were constantly faced with conflicts over resources with the Spanish and other indigenous groups. The main activities carried out by the Spanish during this colonizing period included the search for non-existing gold and proselytizing, with little concern for the exploitation of other natural resources of the region such as fisheries, timber, safe harbors for ships, and agricultural products. During the 17th and 18th century the depopulation of coastal areas continued, while political and economic factors in Europe contributed to geopolitical struggles between the Spanish and the English over territories in the New World. These struggles were reflected by the continued invasions of indigenous communities in Bocas del Toro by the English-supported Miskito Indians, with the objective of obtaining slave labor for English owned plantations throughout the Caribbean. At this time, Spanish efforts to colonize the Bocas del Toro region failed due to internal conflicts and indigenous resistance (Araúz 2007). Due to the shift of English political and economic interests towards the islands of the Caribbean, Miskito invasions came to an end in the early 19th century.

The first half of the 19th century was characterized by relative peace, and by the growth of commercial exchange between the indigenous groups that managed to survive the conflicts of the previous centuries and European merchant ships that passed through Bocas del Toro on their way to the Pacific Ocean and other commercially important destinations in the Americas (Marín Araya 2004, Araúz 2007).

By the second half of the 19th century the Bocas del Toro Province had become an important destination for West Indians originating from Jamaica, Trinidad, and the islands of San Andres and Providence. These migrations were motivated by the harsh work conditions in the sugar cane plantations, and the promise of employment opportunities with the emerging banana industry along the Atlantic coast of Central America (Bourgois 1984). The first wave of West Indian immigrants arrived prior the completion of the trans-Isthmian railroad in 1855; some came as free agents, while others arrived as slaves (Marín Araya 2009). Spurred by the expansion of the banana plantations, the completion of the Panama railroad, and the failure of the French effort to build an inter-oceanic Canal, the largest wave of West Indian migrants arrived between the end of the 19th and the beginning of the 20th century. They either arrived directly from the Caribbean islands or moved to Bocas del Toro after losing their jobs with the railroad and Canal construction efforts.

The United Fruit Company (UFC) was established in 1899 through the merger of Minor Keith's Snyder Banana Company and the Boston Fruit Company. Employment opportunities provided by the Company led to significant demographic changes in the archipelago, as evidenced by the influx of West Indian migrants, Kuna Indians from the San Blas Islands, as well as Chinese, Italians, and other Latin Americans in search of employment (Bourgois 1984). As a result, the current population of Bocas del Toro is highly diverse and comprised primarily of Creoles, descendants of the West Indian immigrants, indigenous groups, Latinos from Bocas del Toro and other provinces, and descendants of European and Chinese merchants.

Logistics and transportation costs, broad international business networks, geographic and commercial proximity to the plantations of Costa Rica, and economic and political power of Company officials with respect to the Panamanian government resulted in further marginalization of the region from the centralized politics of the newly independent Republic of Panama[1] (Bourgois 1984, Araúz 2007). Indeed, in an effort to control the entire banana producing region, the UFC, also known as "mamita yunai" (mama United) or "el pulpo" (the octopus), provided the local population with social services such as health care, education, sanitation, and housing. As a result, although highly controversial in terms of income distribution, social justice, and national sovereignty, the region grew economically while becoming highly dependent

[1] The Republic of Panama officially obtained independence from Colombia on 3 November 1903.

on the UFC. This contributed to a shared cultural experience, still alive today, that sets Bocas del Toro apart from the rest of the country. The expansion of the banana industry was necessarily accompanied by a large influx of foreign investment for land purchases, technological advances, transportation and trade, agricultural expansion of other products such as cacao and Manila hemp, and the local provision of social services (Stephens 2008). The rapid demographic and economic growth experienced during the early days of the banana company was ultimately curbed by the spread of the Panama disease in the 1920s, a plant disease that affected banana plantations throughout the entire banana-growing region. With the reduction of banana plantations in Bocas del Toro during the 1930s, the economic importance of the province also weakened. During this time, cacao and manila hemp production kept the Company operations alive in the region until the 1950s when they re-established banana plantations using a new variety of Panama disease-resistant fruit. At this point, however, the hegemony of the UFC was in significant decline. The construction of the road that connected the Bocas del Toro Province with the rest of the country, in 1984, renewed interest in the region. However, it was not until the year 2000, when the same road was extended to connect the ports of Chiriquí Grande and Almirante, that the province was effectively linked to the national economy through the distribution of agricultural products, hydroelectric power projects, and tourism (Briceño 2004).

The history of Bocas del Toro since the arrival of the Spanish conquerors in the 16th century includes accounts of landscape change, ethnic diversity and conflict, and political economic struggles, similar to those occurring today. The following quotes[2] from Araúz (2007) about life in Bocas del Toro between 1830 and 1894 illustrate the similarities between past and present tensions experienced locally as a result of efforts to develop the region. All three quotes could refer to modern day Bocas del Toro, and reflect both the problems and opportunities that emerge from ongoing processes of change.

> Conflicts and rivalries between foreign merchants over the monopoly of extractive activities and market control do not seem to be isolated cases, if we consider that the commercial circuits found in Bocas del Toro a base for the provision of natural products and an active port. [ca. 1830] (p. 129)

> The prosperity that began to be felt in the region with the increased volume of banana production [ca. 1880] was not a guarantee for progress and development, because they were faced with serious land tenure problems, and because it was government policy to impose forced taxes on the local population every tie there were cash flow problems.... Furthermore, taxes and contributions were not subject to regulations or to any existing legislation. Instead, most of the time they depended on the whims of the governing party and the *exceptional* circumstances that frequently emerged. (p. 123)

> This situation [ca. 1894] appears to be the natural consequence of the arrival of thousands of new individuals, from many origins, not only attracted by production, extraction, and commercial facilities, but also by the lenient administration and distance from organized centers of power. Insecurity was not the only result of this "new Babel". It also constituted a heterogeneous society with individuals who "speak many languages, except for Spanish, as even the locals understand each other in foreign languages." The most commonly spoken language continued to be English, the mother tongue of Creoles who remained spiritually attached to Jamaica. (P. 174)

[2] The original source is in Spanish. The quotes presented in this chapter are my translation.

## VI. CONCLUSION

This introductory chapter serves as a roadmap to the dissertation in that it: (a) Introduces the three research questions addressed in each chapter, (b) Elaborates on the theoretical linkages between chapters, (c) includes a brief rationale for the combined use of qualitative and quantitative research methods, (d) summarizes the main findings of each chapter, and (e) provides a detailed background on the political economic history of Bocas del Toro as a way to understand the various factors that shaped the archipelago prior to the arrival of the first lifestyle migrants.

As evidenced in the chapter summaries, the narrative presented in this dissertation does not offer one simplified conclusion about the changes occurring in the Bocas del Toro Archipelago. Instead, each chapter highlights different parts of the story in accordance with particular epistemologies and theoretical approaches. Additionally, out of respect for all residents of the archipelago, I hope that through the conclusions highlighted in each chapter I was able to clearly portray and parse the various perspectives, influences, and interests at play in the Bocas del Toro Archipelago, at a given moment in time. Additionally, the value of this dissertation, as a whole, lies in its engagement with current debates about the local implications of new forms of development in culturally and geographically specific regions of Panama.

Future research needs call for deepening existing empirical linkages between the themes addressed in each chapter, such as detailing specific environmental impacts related to the activities and behaviors of lifestyle migrants, and to the dynamic relationship between migrants and locals. I suggest that this can be done by expanding the mechanisms used to measure change through the creation of resource and user group-specific environmental indicators.

## SOURCES CITED


Araúz, Celestino. 2007. Bocas del Toro y el Caribe Occidental: Periferia y marginalidad siglos XVI - XIX. Panamá, Editorial Mariano Arosemena.

Barbier, Edward B., Joanne C. Burgess, and Alan Grainger. 2010. The Forest Transition: Towards a more comprehensive theoretical framework. *Land Use Policy*. 27: 98-107

Benson, Michaela C. and Karen O'Reilly. 2009. Migration and the Search for a Better way of Life: A critical exploration of lifestyle migration. *The Sociological Review*. 57(4): 608-625.

Bernard, H. Russell. 2006. Research Methods in Anthropology: Qualitative and quantitative approaches (4th Ed.). Oxford, Altamira Press.

Blaikie, Piers M. and H. C. Brookfield. 1987. Land Degradation and Society. New York, Routledge.

Bourgois, Philippe. 1994. Banano, Etnia y Lucha Social en Centro América. San José, Costa Rica, Editorial Departamento Ecuménico de Investigaciones (DEI).

Brettell, Caroline B. and James F. Hollifield. 2000. Migration Theory: Talking across disciplines. London, Routledge.

Briceño, Amilcar E. 2004. Historia y Sociedad de Bocas del Toro y de la Comarca Ngöbe-Buglé: Del Siglo XV al Siglo XXI. Panamá, Editorial Universitaria Carlos Manuel Gasteazoro.

Bryant, Raymond L. and Sinead Bailey. 1997. Third World Political Ecology: An introduction. New York, Routledge.

Castro Herrera, Guillermo. 2008. Historia, Ambiente y Cultural de la Naturaleza en Panamá. *Peripecias*. 111.

Gosnell, Hannah and Jesse Abrams. 2009. Amenity Migration: Diverse conceptualizations of drivers, socioeconomic dimensions, and emerging challenges. *GeoJournal*.

Hall, C. Michael and Allan M. Williams (Eds.). 2002. Tourism and Migration: New relationships between production and consumption. London, Kluwer Academic Publishers.

Harvey, David. 1990. Between Space and Time: Reflections on the Geographical Imagination. *Annals of the Association of American Geographers*. 80(3): 418-434.

Heckadon-Moreno, Stanley (Ed.) 1993. Agenda Ecológica y Social para Bocas del Toro: Acta de los Seminarios Talleres. Panamá, Smithsonian Tropical Research Institute.

Lambin, Eric F., B.L. Turner, Helmut J. Geist, Samuel B. Agbola, Arild Angelsen, John W. Bruce, Oliver T. Coomes, Rodolfo Dirzo, Gunther Fischer, Carl Folke, P.S. George, Katherine Homewood, Jacques Imbernon, Rik Leemans, Xiubin Li, Emilio F. Moran, Michael Mortimore, P.S. Ramakrishnan, John F. Richards, Helle Skanes, Will Steffen, Glenn D. Stone, Uno Svedin, Tom A. Veldkamp, Coleen Vogel, and Jianchu Xu. 2001. The Causes of Land-use and Land-cover Change: Moving beyond the myths. *Global Environmental Change*. 11: 261–269.

Marín Araya, Giselle. 2004. La Población de Bocas del Toro y la Comarca Ngöbe-Buglé hasta Inicios del Siglo XIX. *Anuario de Estudios Centroamericanos* de la Universidad de Costa Rica. 30(1-2): 119-162.

Marín Araya, Giselle. 2009. La Inmigración Internacional en el Caribe Panameño Vista a través de los Censos de Población de 1911 a 1950. *Revista Estudios*. 22.

McCarthy, James. 2005. First World Political Ecology: Directions and challenges. *Environment and Planning A*. 37(6): 953-958.

McCarthy, James. 2008. Rural Geography: Globalizing the countryside. *Progress in Human Geography*. 32(1): 129-137.

McHugh, Kevin E. 2000. Inside, outside, upside down, backward, forward, round and round: case for ethnographic studies in migration. *Progress in Human Geography*. 24(1): 71-89.

Migration Policy Institute (MPI). 2006. America's Emigrants: US Retirement Migration to Mexico and Panama. Washington DC, Migration Policy Institute.

Peet, Richard and Michael Watts. 2004. Liberation Ecologies: Environment, development, social movements (2nd Ed). New York, Routledge.

Robbins, Paul. 2004. Political ecology: a critical introduction. Malden, MA, Blackwell Publishers.

Sloan, Sean. 2010. Remote Sensing for Modeling Socio-Environmental Change in the Tropics at Large Geographic and Temporal Scales. Panel contribution to the Population-Environment Research Network Cyberseminar: What are the remote sensing data needs of the population-environment research community? Retrieved July 2010 from http://www.populationenvironmentresearch.org/papers/Sloan_PERN_statement.pdf.

Stephens, Clyde. 2008. Outline of History of the Province of Bocas del Toro, Panama. Eustis, FL, SPS Publications.

Urry, John. 1999. Mobile Cultures. Published by the Department of Sociology, Lancaster University, Lancaster. Retrieved May 29, 2008, from http://www.comp.lancs.ac.uk/sociology/papers/Urry-Mobile-Cultures.pdf

Walker, Peter A. 2005. Political Ecology: Where is the Ecology? *Progress in Human Geography*. 29(1): 73-82.

# CHAPTER 2.

# LIFESTYLE MIGRATION TO BOCAS DEL TORO, PANAMA: EXPLORING MOTIVATIONS, STRATEGIES, AND IMPLICATIONS OF THE SEARCH FOR "PARADISE"

## I. INTRODUCTION

The globalization of travel, technology, markets, and ideas is rapidly transforming Latin American cities and rural landscapes. One particular manifestation of this is the emergence of new migration patterns that are influenced by global political economic factors and changes in personal attitudes and objectives. Lifestyle migration constitutes one such migratory phenomenon and is typically characterized by the international flow of affluent people from developed to developing countries, searching for so called 'lifestyle' destinations, with warm climates, cheaper costs of living, and perceived higher quality of life. Recent studies show that these movements are becoming increasingly common in rural and environmentally sensitive areas of Latin America such as sites within Mexico (MPI, 2006, Sunil, Rojas, and Bradley 2007), Costa Rica (Johnson and Clisby 2008, Frohlick 2009, Janoschka 2009), and Panama (MPI 2006, Jackiewicz and Craine 2010). In the context of globalization and neoliberal political economic forces, the Panamanian government has been quick to perceive the economic growth potential of these movements, and has adopted a series of policies to attract foreign residents and associated investments in real estate and

foreigner-based businesses[3]. This case study is based on the Bocas del Toro Archipelago in northwest Panama as one such lifestyle migration destination in which the foreign resident population has almost quadrupled between 2000 and 2010.

As a group, foreign residents are attracted to Bocas del Toro as a physical manifestation of globally produced images and perceptions of tropical island living. However, an in-depth exploration of foreign residents reveals subtle differences in motivations for migrating and strategies of integration. Drawing on theories of traditional population geography and using an ethnographic approach to organize my study of lifestyle migration, I suggest that foreigners exhibit a set of attitudes and behaviors in their new home as a reflection of their previous life experiences and motivations to move. In order to explore this phenomenon in Bocas del Toro in this chapter I first examine the theoretical underpinnings of transnational migration studies, using the concept of lifestyle migration as the overarching theoretical framework. This section includes a synthesis of existing migrant categories, it provides a description of the structural and non-structural drivers of migration to Bocas, and suggests that the contrast between life in the country of origin and that in the idealized tropical setting creates a consumptive 'migrant gaze' that shapes subsequent experiences in the destination country. I then engage in an in-depth

[3] E.g., Ley No. 54, 22 July 1998, judicial guarantees for investments. (Gaceta Oficial No. 23,593, 24 July 1998), and Ley No. 5, 11 January 2007, facilitates the establishment of businesses. (Gaceta Oficial No. 25,709, 12 January 2007).

discussion of the empirical data on foreigners living Bocas del Toro, with a focus on understanding who these migrants are, exploring personal motivations to migrate to Bocas del Toro, and examining their ways of life, adaptation strategies, and the subsequent environmental implications of such moves. The ensuing narrative can be understood as being contingent upon existing tensions between and within social, political, and ecological variables at the global and local levels.

## II. THE THEORY AND CONTEXT OF TRANSNATIONAL LIFESTYLE MIGRATION STUDIES IN AN ERA OF GLOBALIZED MOBILITIES

Lee (1966) broadly defines migration as a "permanent or semi-permanent change of residence" (p.49). Migration research covers a wide range of scenarios of mobility that have accelerated under the adoption of neoliberal economic policies, in particular through the globalization of capital, technology, transportation, and culture (Castles and Miller 2003, Kull, Ibrahim and Meredith 2007). Sociologist John Urry (1999) describes this phenomenon of mobile cultures in terms of a shrinking or homogenized world, in which individuals are able to live anywhere and experience enhanced mobilities due to the ease of travel and communication technologies. Traditionally studied migration paths include South-North and rural-urban movements for structural social, economic, and political reasons[4]. Typically, migration research

[4] Throughout this proposal I refer to 'South-North' movements as those from developing to developed countries.

focuses on questions of directionality and causality of migratory movements throughout the globe, as well as the legal framework within which these movements occur in both source and destination countries (Lee 1966, King and Connell 1999, King and Wood 2001, Castles and Miller 2003). These studies, however, often fail to take into account personal histories and background as a way to explain these moves. That is, they assume movements are based on acontextual responses to structural factors, as opposed to more complex, and somewhat subjective, personal desires for alternative lifestyles (Halfacree and Boyle 1993, McHugh 2000).

A relatively recent sub-set of studies, including lifestyle migration, address some of these traditional migration research questions, but are characterized by reverse movements. That is, North-South and urban-rural migrations (King, Warnes and Williams 2000, MPI 2006, Sunil et al. 2007, McCarthy 2008). This literature goes beyond describing the structural or environmentally determined drivers of migration, as it explores the effect of life histories on personal attitudes and behaviors both in the country of origin, and towards the new destination (O'Reilly n.d., Lee 1966, Lazaridis, Poyago-Theotoky and King 1999, King et al. 2000, Newton 2004, MPI 2006, Benson 2010).

### *Defining Lifestyle Migration: An ethnographic project*

Migration researchers that focus on the movement of individuals form developed to less developed countries in search of a different quality of life have adopted a variety of terms to frame their research, including international retirement migration, amenity migration, and lifestyle migration. These researchers all have in common the fact that they study relatively affluent individuals with enterprising spirits who move to rural and less developed regions of the world within diverse socio-environmental and political contexts (Gosnell and Abrams 2009, Benson and O'Reilly 2009b). For instance, research on international retirement migration (IRM) emerged approximately 25 years ago as the study of the residential mobility of older persons to southern Europe (King, Warnes, and Williams 1998). Monetary concerns are usually seen as the impetuses for these moves, as well as warmer climates and the existence of a welcoming social environment. Williams and Hall (2000) summarize the reasons for the increase in this type of migration as: "ageing population, extension of active old age, increased but polarized disposable income, changing working and retirement patterns, and increased familiarity with the 'global' through work and leisure" (p. 19). Conversely, amenity migration is not economically motivated, and includes individuals of all ages. Defined by Gosnell and Abrams (2009) as "the movement of people based on the draw of natural and/ or cultural amenities" (p. 3), amenity migration is not necessarily transnational, and generally focuses on the mobility of relatively affluent individuals from urban to rural areas. It is generally understood as a

reflection of the search for a simpler life and an idealized connection with nature in exurban settings (Halfacree and Boyle 1993, McCarthy 2008).

The concept of lifestyle migration, broader in scope, encompasses the themes addressed in both international retirement migrations and amenity migration studies. Benson and O'Reilly (2009b) propose a dynamic definition of lifestyle migration as "the spatial mobility of relatively affluent individuals of all ages, moving either part-time or full-time to places that are meaningful because, for various reasons, they offer the potential of a better quality of life" (p. 609). This definition relies on the assumption that the new destination is invariably contrasted with the migrant's past life. That something may be perceived as 'better', of course, presupposes that the current situation is undesirable, thus meriting an escape that may provide the opportunity to re-define oneself. The idea that there is a better way to live has always existed under the guise of the institution of the American dream. This dream has now gone global as the coupling of media and technology has enabled the current proliferation of post-card-like images of paradise, while simultaneously making it possible to export material lives into these idyllic landscapes (Urry 1999). In this sense, migration can be understood as an ongoing personal process imbued with choice, instead of a simple move from one location to another (Benson and O'Reilly 2009a). Additionally, it allows for the inclusion of a wider set of migratory trends such as moves of second-home owners, high-skilled labor, love migration, and

student migrations (King 2002). Indeed, lifestyle migration allows for a much broader perspective on the individual within a less rigid definition of foreign resident culture, and allows for the exploration of how past and present identities produce and reproduce ideas of the environment and the local population in the context of a globalized political economy.

This chapter adopts and contributes to the concept of lifestyle migration by providing an in-depth exploration of the foreigners moving to Bocas del Toro, and provides insight into their past life experiences as a way of understanding their decision to move. Additionally, in an effort to understand the particular social, environmental, and institutional implications of lifestyle migration to Bocas del Toro, I explore the various strategies that these migrants use to integrate and navigate daily life in the tropics. Overall, as most studies of lifestyle migration refer to cases in Europe (see O'Reilly n.d., King 2002, Johnson and Clisby 2008, Benson 2010), this case study constitutes an important contribution to the budding literature on lifestyle migration to Latin America (MPI 2006, Sunil et al. 2007).

*Lifestyle Migrant Typology*

Migration researchers use a wide range of terms to classify their subjects of study such as amenity seekers, skilled migrants, and student migrants (King et al. 2000, Hall and Williams 2002, Ortiz and Mendoza 2008). In order to explore the

particularities of foreigners residing in Bocas del Toro, I synthesized existing analytical categories of migrants from within the literature into three main types that embody the ways in which individuals materially and symbolically interact with their new home: second-home or residential tourists, entrepreneurs or economically active migrants, and retirees. At the risk of oversimplifying the foreign population of Bocas del Toro, I used these categories because they were general enough to encompass all foreign residents, with the exception of tourists or short-term residents who were excluded from this study.

Theoretically, this typology corresponds with McHugh's (2000) explanation of life course trajectories as being dependent on "still rooted, suspended, and footloose" (p.79) attachments to place. 'Still rooted' migrants, much as second-home owners or residential tourists, will always have strong ties to their place of origin, despite an apparent attempt to settle temporarily or permanently in a location away from social and family support networks. In the context of this research, second-home or residential tourists include those who spend approximately six months away from their primary home in their country of origin, where they continue to work or pursue business activities. They are generally affluent individuals with flexible employment strategies who purchase a second home primarily to enjoy leisure activities. Retirees are conceived as 'suspended' migrants who have weaker attachments to home, as family and friends have dispersed (especially in the case of older retirees), rendering

the concept of a unified extended family home meaningless or reducing its importance. Generally, retirees in Bocas del Toro are relatively older individuals with a guaranteed monthly income from prior employment or investments. Finally, the 'footloose' category includes entrepreneurs, some of whom are lifetime expatriates, in its portrayal of individuals whose lifestyle is not bound by attachments to people or places and whose economic or professional ambitions are prime instigators for their moves. Entrepreneurs or economically active migrants in Bocas del Toro include foreigners of all ages and economic backgrounds who own businesses that typically cater to foreign tourists or other foreign residents.

### *Context and Impetus of Lifestyle Migration to Bocas del Toro, Panama*

*Geography and culture of an idealized island life: "Ven Pa' Bocas"*

Panama's relative proximity to the United States and other international destinations, due to convenient access to major travel hubs, make it an attractive option for tourists and foreigners looking to relocate. The Archipelago of Bocas del Toro, located in the northwestern corner of the Republic of Panama, includes six main islands (Colón, Bastimentos, Solarte, San Cristóbal, Popa, and Cayo de Agua) distributed throughout the Bay of Almirante and the protected Chiriquí Lagoon. The combination of sandy beaches, rocky coasts, mangrove ecosystems, and coral reefs constitutes an idyllic tropical islandscape that contributes to the aesthetic value of the archipelago. Although geographically more isolated than other destinations within Panama, Bocas

del Toro is served daily by four one-hour flights from Panama City, and is increasingly becoming integrated to the national and international political economy. As a result, international tourism to Bocas del Toro has expanded significantly in the past twenty years. The growth from three hotels in 1993, to 24 in 1998 (AMP/UM 2008) and currently over 100 in 2010 demonstrates the foreign tourist presence in the archipelago (ATP 2010). Similarly, the emergence of Bocas del Toro as a retirement destination on websites such as International Living and Escapeartist, the increase of real estate agencies, and a series of proposed residential projects since the early 2000s, suggest a parallel increase in foreign residents (http://internationalliving.com/, http://www.escapeartist.com/). Indeed, the 2010 National Census counted 1139 individuals born outside of Panama, which represents a 262.7% increase from the 314 counted in the 2000 National Census (INEC 2000, 2010).

In addition to tropical island landscapes, lifestyle migrants are attracted to the novelty of living in a different culture (MPI 2006, Sunil et al. 2007). According to the 2010 National Census, the Bocas del Toro district has a total population of 16,135 habitants. Of these, almost half live on Colón Island, the capital and main center of attraction to foreigners (Briceño 2004). The local population of Bocas del Toro is highly diverse and comprised primarily of Afro-Antilleans, descendants of West Indian immigrants, Ngöbe and Buglé Indians, and Panamanians of Hispanic, European, and Chinese descent. Afro-Antilleans usually speak English and its local

Creole variant Wari-Wari, and are active participants in the local social scene as they have always lived in areas that are now the centers of economic activity such as Bocas Town on Colón Island and Old Bank on Bastimentos Island (Guerrón-Montero 2006). Indigenous groups are traditionally found on the mainland south and east of the archipelago. However, the influx of foreign tourists and residents has spurred a parallel migration of Ngöbe and Buglé Indians to islands and communities closer to Bocas Town. Other Panamanians have made Bocas their home over the past century, chiefly for commercial and family reasons (Heckadon-Moreno 1993).

*The "push" to leave home: The nexus of demographics, economics, and politics*

Whether it is a conscious decision or something that happens at the culmination of extensive travels, the push to re-make lives abroad can generally be explained by two factors that currently affect society: demographics and globalization (Lazaridis et al. 1999, MPI 2006). The population structure of developed countries is rapidly changing with the aging of the baby boomer generation. In the US, the number of persons over 65 years of age is expected to double between 2000 and 2030 (MPI 2006). As these baby boomers approach retirement, political and economic factors, as well as previous experiences living abroad and extended periods of active post-retirement lifestyles, contribute to an increase in the share of the population interested in retiring abroad (King et al. 2000). These individuals face important economic decisions, as they find themselves with pensions that do not necessarily increase with inflation, or

they want to maintain their standard of living despite the reduction in income due to retirement. A rising life expectancy contributes to the fact that many foreigners come to Panama looking to continue working and generating additional income. The cost of health care is also an important consideration for baby boomers, and they may consider retiring to locations with cheaper medical services and what they may perceive to be healthier climates (MPI 2006).

Since not all foreign migrants are retirees, other factors such as the globalized political economy also help to explain motivations to live abroad. Employment conditions such as long hours and limited vacation time and inflated costs of living in developed countries, are factors that affect the decision to migrate. Motivations to move also emerge from ongoing privatization processes, economic openness, and a less restrictive enterprising atmosphere in regions such as Eastern Europe, Latin America, and Asia, where entrepreneurs have the opportunity to establish new and creative businesses without the capital restrictions of developed countries (Tolson 2008). Particularly, in the context of international terror threats and the current economic crisis, political disenchantment also plays an important role in the decision to move. People are increasingly disappointed with the ways in which their governments are dealing with matters of war, taxes, public services, and security (Tolson 2008, Benson 2010).

*Panama's migratory "pull": Incentives of a neoliberal political economy*

The unique political, and economic conditions of Panama have significantly affected the country's development and international reputation. These include its history of hosting a US military and civilian enclave, the national currency's tie to the US Dollar since becoming a republic in 1903, and the abolishment of military and subsequent relative political stability after 1989. On a broader scale, neoliberal processes have helped define the context within which the national government adopted political and economic strategies to promote the country as a lifestyle migration destination. Neoliberalism is associated with the promotion of free trade economic policies, with the expectation that less developed countries will be able to successfully participate in the global market economy (Peck 2004, Harvey 2007). In Latin America, neoliberalism emerged as the dominant political and economic ideology after the debt crisis of the 1980s (Perreault and Martin 2005). Forced to borrow money in order to stabilize their economies, national governments were required by loan agencies, such as the International Monetary Fund (IMF) and the World Bank, to adopt structural adjustment programs (SAPs) characterized by the reduction of trade barriers, decentralization of national authority, privatization of public services, and the dependence on market-based solutions to social and environmental problems (Gwynne and Kay 2004, Perreault and Martin 2005). For Panama, the imposition of SAPs in the early 1980s, combined with the end of General Manuel A. Noriega's dictatorship in 1989, consolidated this region-wide neoliberal

process by opening up the country and its resources to the global economy. As a result, Panama's current national development strategies prioritize the promotion of economic growth, institutional modernization, and decentralization, in the context of large infrastructure projects such as the expansion of the Panama Canal (CND 2008, EIU 2008).

An important component of this process of economic modernization is the creation of incentives for tourism projects and other related forms of foreign direct investment (FDI) such as real estate, hotels, and telecommunications (MICI 2010). Specially designed incentives to attract foreign residents include the provision of benefits and discounts for retirees, tax breaks for importing household goods and establishing tourism businesses, guarantees on investments[5], and a streamlined business establishment process[6] (MPI 2006). Additionally, the National Immigration Service (NIS) was restructured in 2008 to improve the efficiency of the services it offered, particularly reorganizing its immigrant visa categories into permanent resident visas for economic reasons (e.g., investment), special conditions (e.g., retiree, and investor or employee of special economic zones), or visas for demographic reasons (e.g.,

[5] Ley No. 54, 22 July 1998, judicial guarantees for investments. (Gaceta Oficial No. 23,593, 24 July 1998)

[6] Ley No. 5, 11 January 2007, facilitates the establishment of businesses. (Gaceta Oficial No. 25,709, 12 January 2007).

married to Panamanian)[7]. Other attractive features of the Panamanian political economy include relatively stable inflation rates, cheaper costs of living in sectors such as real estate, in-house services, and health care, open markets that allow for the availability of imported comfort goods, and a generally safe environment with low crime rates and negligible international threats (MPI 2006). Additionally, Panama has demonstrated sustained economic growth since the early 1990s, peaking in 2007 with the highest growth rate for Latin America (EIU 2008, CEPAL 2009). Promoters of Panama as a lifestyle destination capitalize on this reputation of political stability, modernization, and high economic growth, resulting in the recognition of Panama as a prime location for re-making lives abroad (MPI 2006, Sheridan 2007).

### *The Emergence of a "Migrant Gaze": Implications for interacting, integrating, and caring for the environment*

Lifestyle migrants to Bocas del Toro interact with the social and natural environment of the archipelago both conceptually and materially. Conceptual interactions refer to readily adopted perceptions of an idealized tropical island lifestyle reproduced by the media through images of white sand beaches, palm trees, and days spent relaxing in a hammock surrounded by friendly locals. Building upon the concept of the 'tourist gaze' developed by sociologist John Urry (2002) my research rests on the assumption that foreigners, in their decision to move to Bocas del Toro, bought into a globally

[7] Decreto de Ley No. 3, 22 February 2008. Creates National Immigration Service. (Gaceta Oficial No. 25986, 26 February 2008).

produced island dreamscape that exists in contrast to the quotidian, every day lives in their countries of origin. In other words this study of lifestyle migration necessarily takes into account the influence of personal histories on decision-making processes. On the other hand, material or physical interactions, influenced by these idealized perceptions of the local, include explicit actions and behaviors by foreigners. These contribute to shifting existing relationships within local communities and to altering the natural landscape (Urry 1995, Urry 2002, Bury 2005, Kull et al. 2007). Therefore, I theorize that the social and environmental context of lifestyle destinations is shaped by what I call a 'migrant gaze' that ultimately defines the various components of the lifestyle destination according to what the foreigner wants to see. In adopting the 'migrant gaze', foreigners situate themselves within their new home and navigate their daily lives in terms of personal interactions with locals and other foreigners. These are influenced by language culture, geography, and life course, and through various strategies for integration. My research findings demonstrate that by favoring the idealized perception of island living, some of the difficulties or limitations of living in a remote location such as Bocas del Toro are selectively overseen. For instance, the degree of interactions with locals is overstated, and relations with locals and other foreigners tend to adopt different forms than originally expected prior to the move.

Additionally, given that the 'migrant gaze' relies on imported consumptive attitudes, the juxtaposition of these with previous experiences and knowledge about environmental responsibility produce mixed implications for the environment of Bocas del Toro (Urry 1995, Williams and Hall 2000, Meletis and Campbell 2007). While foreign residents of Bocas del Toro tend to engage in environmentally-friendly activities, the conceptual 'migrant gaze' at times offsets these actions through higher expectations for standards of living and imposition of Northern cultural practices, lack of attachment to place, differential treatment of local community members, and residential developments to accommodate for demographic changes. McCarthy (2008) portrays this conflicting finding in his review of the implications of urban to rural migration. On the one hand, he discusses the negative elements of this demographic trend:

> "Ecologically, exurban development and amenity landscapes fragment habitat, increase impervious ground cover, and in general contribute to very high and inefficient levels of resource use" (p.135)

In contrast, McCarthy (2008) also proposes that new migrants may exhibit a higher level of environmental awareness than local residents, suggesting that these areas may eventually become ecologically improved sites.

## III. METHODS

### *Methodological rationale and researcher positionality*

In order to obtain the data for this analysis I conducted an anonymous self-selected survey and in-depth semi-structured interviews with foreign residents of Bocas del Toro, while simultaneously engaging in participant observation. This study relied primarily on ethnographic research methods as they generate the level of detail about individual life histories and experiences necessary to produce this multifaceted narrative about lifestyle migration to Bocas del Toro. In particular, this ethnographic approach provides an opportunity to more closely examine the lives of these migrants, across geographical scales, as a way of understanding their motivations for moving, strategies for integrating, and social and environmental implications for the destination country. This research also responds to McHugh's' (2000) call for improvement in migration studies by suggesting that "ethnographic studies hold much potential in revealing the interplay of migration and sociocultural change" (p.72). In other words, this methodology enables the portrayal of lifestyle migration as a process that articulates structural political economic forces with personal motivations and desires for an alternative quality and style of living.

The ethnographic approach also allowed me to become an engaged participant of the research. My level of engagement with informants was enhanced by my Panamanian nationality and my experiences of living and studying in the United States since 1995.

Most informants were very willing and interested in speaking to me as a Panamanian citizen looking at the impacts of demographic change based on my first-hand knowledge of the socioeconomic and cultural history of the country. Additionally, the fact that I had previously re-made my life abroad facilitated communication and aided in establishing an otherwise difficult rapport based on shared experiences of place and culture.

### ***Research methods***

*Survey*

The non-probability, self-selected survey (Appendix A), was aimed primarily at exploring environmental attitudes and practices within the foreign population of the archipelago, and also addressing the various strategies used by foreigners to become integrated into the *bocatoreño* social fabric. The survey instrument included fixed-response and open-ended questions and addressed topics such as forms of interaction with the local population (e.g., social, business, family, commerce, employer-employee), frequency of environmentally responsible behaviors (e.g., recycling, water conservation, composting), degree of responsibility towards the environment, and concerns for specific environmental issues. It also gathered standardized data such as general demographic information, length of residence in Bocas del Toro, and immigration status. The survey was publicized to the Bocas community through two

announcements in the local, bilingual, monthly newspaper, the *Bocas Breeze*[8] (2008 and 2009), and was available for six months, between November 2008 and April 2009. The survey could either be answered online or on paper. Paper copies were available at a foreign-owned specialty super market, the Super Gourmet, visited by most, if not all, foreign residents at some point during their stay in Bocas del Toro. I received a total of 58 completed surveys.

*Interviews*

In-depth semi-structured interviews (Appendix B) with key informants constituted the bulk of my data. I selected informants from within the foreign resident population using non-probability purposive methods (Bernard 2006). That is, I specifically identified a non-random selection of individuals who fulfilled my objective of obtaining perspectives from foreigners residing throughout the archipelago and that fit within my three pre-established migrant categories. During preliminary site visits in June 2007, I connected with two prominent members of the foreign resident community, identified through local institutional contacts and by approaching the editor of the *Bocas Breeze*. These first informants made initial recommendations of individuals who fit this typology and had lived in Bocas for over ten years. After conducting an initial round of 14 interviews between January and April of 2009, I

[8] The Bocas Breeze has a monthly circulation of 5000, of which 3800 stay in Bocas Town. It is also published online, and announced to a mailing list of about 1000 individuals around the world. The editor also keeps a smaller local mailing list with approximately 300 members for updates and information on the latest local news.

purposely selected 11 additional interviewees who had moved to Bocas more recently and/or were part of proposed tourism and residential development projects. These selections were based on recommendations and personal interactions as, by this point, my research was known in the community through the survey announcement in the *Bocas Breeze* and by presentations I had given as part of the Smithsonian Tropical Research Institute's (STRI) monthly seminar program. Overall, I conducted a total of 25 interviews between January of 2009 and April of 2010, addressing the following themes: reasons for moving to Bocas, knowledge of environmental issues/problems (in both origin and destination country), ties to home country, expected permanence in new home, cultural and social interactions between 'locals' and other 'immigrants', and attitudes towards national and local development (e.g., tourism, aquaculture farms, marinas, commercial and subsistence fishing, and lumber production). As the majority of foreigners reside on the main islands of Colón and Bastimentos, 23 interviews were conducted in these locations, while the remaining two interviews were conducted in the nearby area of Dolphin Bay (See Figure 1: Map of Bocas del Toro Archipelago). I did not include remote sites within the archipelago, such as Cayo de Agua, Isla Tigre, and Isla Popa because they presented logistical difficulties and are home to few, if any, foreign residents, according to informal interviews with both locals and foreigners. Each interview lasted between 40 minutes and 2.5 hours, for a total of over 20 hours of digital audio files. Of the 25 interviews, 6 responded as

couple, for a total of 31 individuals. Of the remaining 19 individual interviews, 9 were female and 10 were male. The respondents' age ranged from 28 to 80.

*Participant observation*

This method was used to unobtrusively observe and document attitudes and behaviors towards the local population and the environment in a variety of settings such as daily activities, social interactions (e.g., restaurants, the central park, during festivals and local holidays, and during leisure recreational activities), public forums for development projects, and public Smithsonian-sponsored talks about my research. I also observed and documented interactions between lifestyle migrants and locals in order to explore the nature of social dynamics (Bernard 2006). These observations were used to validate the information obtained from the survey and interviews, to interpret meanings during the analysis phase, and to determine the extent to which behaviors towards the local community and environment are consistent with stated ideas (see Young 1999). I documented my observations in detailed research notes and also kept a personal record of my own experiences and opinions during observation.

***Analysis***

Once transcribed and organized, the semi-structured interview data were coded by common themes using an inductive interpretation process (Bernard 2006) to explore previous life histories, specific reasons for moving, adaptation and integration

strategies, and environmental awareness. That is, particular interview responses were grouped into general code themes in order to make general conclusions about lifestyle migrants in Bocas del Toro. Coding was guided by the theory-based search for narratives about the lifestyle migrants, and based on themes addressed during the interviews such as why they chose to move to Bocas del Toro, how they navigate daily life in the tropics, and the socio-environmental implications of the migration process.

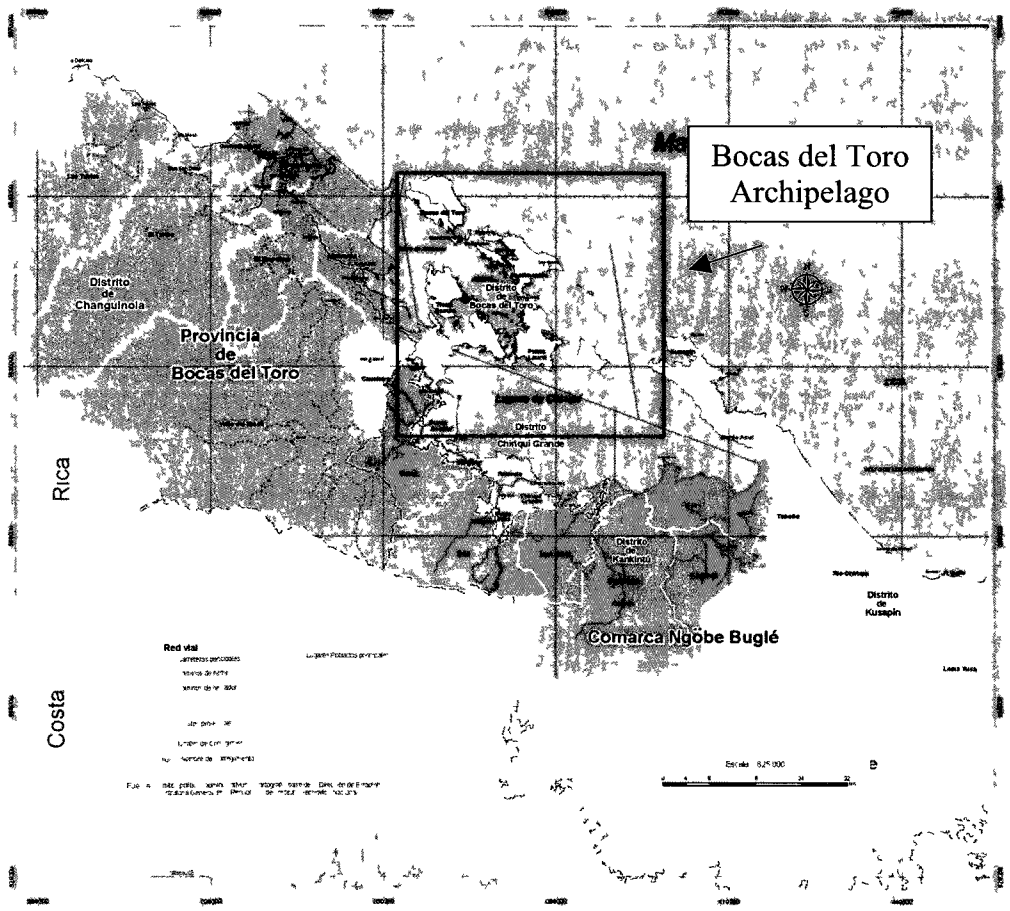



**Figure 2.1: Map of Bocas del Toro Archipelago. Source: AP/UM 2008.**

## IV. RESULTS AND DISCUSSION: PARADISE FOUND?

The following section presents the survey and interview results organized as a discussion in response to the following theory-based questions about the phenomenon of lifestyle migration to Bocas del Toro: Who are these lifestyle migrants? What motivated them to move to Bocas? How do they navigate daily life in the tropics? And What does this mean for the local environment?

### *Who are these migrants?*

The particularities of each category of migrants are explained in terms of their age, how long they have lived and expect to continue to do so in Bocas del Toro, as well as their professional background. Additionally, they are identified in reference to the emphasis they each placed on recognizing their role within the host community and being economically successful in terms of funding their idealized tropical lifestyle.

Following the foreign resident typology created for this research, of the foreigners who responded to the self-selected survey, 32.1% self-identified as retirees, 30.4% as entrepreneurs or economically active migrants, 12.5% as second-home or residential tourists, and 25% did not feel these categories accurately depicted their situation in Bocas. Based on the explanations provided by the 25% (14 responses) who felt they did not fit within the typology, it would seem that they did not understand the question. Of these, 4 consider themselves to be retirees, an already existing category,

8 would qualify as second-home or residential tourists due to the temporary nature of their stay, and only 2 refused to identify with these categories. Independent of category, the 50 to 65 age group predominated within the foreign resident community, with an average age of 53. Of the interview respondents, second-home residents and retirees averaged 58 and 60 years of age, respectively, in contrast to the 41 years of economically active migrants. The similarity in age of second-home owners and retirees is not coincidental, as some individuals within the former category are also retired. These second-home owners did not identify with the retiree category based on their attachment to home through what McHugh (2000) refers to as the 'still rooted' nature of their life course trajectory, where attachment to their place of origin relies on home ownership, business, or friend and family ties.

In terms of time spent in Bocas del Toro, interviewed retirees had lived in Bocas for the least amount of time, an average of 5.5 years. On the other hand, second-home owners, the smallest category, have been visiting or living part-time in Bocas del Toro for approximately ten years, while entrepreneurs started to arrive almost eight years ago. This difference in the length of time in Panama coincides with the height of Bocas' popularity as a lifestyle and retirement migration destination in the early to mid 2000s. In other words, where second-home owners spoke of purchasing homes in Bocas up to 15 years ago when it was still a "sleepy Caribbean town" (I16, 14 April 2009), entrepreneurs and retirees began to arrive more recently, in search of economic

opportunities, and in response to enticing advertisements on the ease and luxury of retiring in Panama. Interviews with both retirees and entrepreneurs emphasized the active search for a home that was free of stress and the demands of urban life.

Within second-home owners there was no expressed desire to make Bocas a permanent home, illustrative of their 'still-rootedness' to their country of origin. As one respondent explained, although he sees this as his primary residence, he would never be able to fully move to Bocas because he has active business interests in the United States (I18, 4 April 2009). On the other hand, they do not consider it to be a holiday destination. "Bocas is another home, not a vacation home, because we always have to work when we're here" (I16 14 April 2009). In contrast, retirees' expected permanence is a symbolic expression of their desire to make Bocas their new home. This group feels they have few significant attachments to their home country, which motivates them to stay and reflects the permanent nature of their move. Retirees generally spoke of the experience of removing ties with their place of origin through extended absences, divorce or remarriage, and a newfound attachment to Bocas del Toro. For instance, in the words of one retiree who has no family left in the United States: "When things get rough, if you have a place to run to it's easy. You know? If u can run to mom's, you know? That affects your decision... I don't have that option" (I11 3 April 2010). This clearly illustrates McHugh's (2000) characterization of retirees as 'suspended' between homes, with the ability to re-create their original

homes in the new location. The only factor mentioned that would affect the expected permanence of retirees is availability of suitable health care. Given that there are no current plans to either improve the public hospital or to open private clinics, one interview respondent pointed out that this could affect whether she stayed in Bocas for ever, as she may find she needs more regular health care as she grows older (I4 4 April 2010). Currently, foreigners travel to David in the Chiriquí Province[9], and sometimes as far as Panama City to receive what they perceive to be better medical care.

Entrepreneurial migrants primarily expressed their intentions of making Bocas a permanent home based on their respective businesses. For example, one respondent pointed out that he and his partners had made the decision to sell everything in the United States, investing several years and a significant amount of money on building their resort in Bocas del Toro. He claimed that despite poor economic forecasts for the 2009 tourist season, and problems they had encountered in formalizing their legal status as investors, they would stay in Bocas as it was now their home (I8 27 January 2009). However, as entrepreneurs are typically younger than the other migrants, many of them have school-age children. Similar to the case of health care for retirees, the lack of high quality educational institutions has implications for the expected permanence of entrepreneurial foreign residents. As one interviewee who moved here

[9] Travel to David requires taking a 25 minute flight, offered three times per week, or a four hour trip, first on a 30 minute boat ride to the mainland followed by a 3 hour drive over the mountains.

six years ago and has two children pointed out: "We don't plan on going anywhere, other than for kids' education...[when we would] maybe move to Panama City or [send them to] boarding school in Panama City" (I9 27 January 2009).

Second-home owners came from relatively high professional and intellectual background, and spoke little about monetary issues. They perceived their life in Bocas as a complement to their every day existence through an appreciation of aesthetically pleasing landscapes, life by or on the water, and engagement with a culturally diverse community. These migrants spoke of previous experiences with sustainable living, and saw in Bocas an opportunity to put it into practice. For instance, one second-home migrant had been part of the 'back-to-the-land' movement in California in the 1970s. He claimed this experience shaped his interest in being part of a similar community in Bocas del Toro. In fact, when he was offered the opportunity to buy land in Bocas del Toro ten years ago with, at the time, similar minded individuals, he did so prior to visiting the island. In this case the project never materialized, and tourist and residential development took a different, more consumer-oriented turn. In response, this interviewee hinted at a generalized disappointment with current foreign residents (I18 9 April 2009).

Most entrepreneurial migrants also came from professional backgrounds that, although not necessarily related to their current operation, provided the skills

necessary to start new businesses. In contrast to prior jobs in investment, engineering, and logistics, foreign-owned businesses generally cater to the tourism industry and to other foreign residents, and include hotels, restaurants, real estate agencies, and water sports or tour operators. Similarly, retirees with professional backgrounds had previously worked in a wide range of industries. The older respondents within this category had led relatively sedentary or established lives working in trades such as the movie industry and contracting. They moved to Bocas to reside on one of the many planned residential communities, effectively buying into an idealized retirement paradise. On the other hand, younger retirees preferred to live in various locations throughout the archipelago. The latter came from quite an independent background, having lived and worked abroad for a long time, owned businesses and ranchlands, worked as artists, promoted music, and invested in the stock market. Contrary to other case studies on retirement migration (e.g., Lazaridis et al. 1999, Benson 2010), retirees in Bocas did not have prior experiences of visiting Bocas, or Latin America for that matter.

As a group, second-home owners recognize that their interactions with the locals, whether social or economic, are essentially structured around difference and on previous experiences with the 'other'. In this sense, second-home owners are very clear about their role as foreigners living abroad. Additionally, perhaps due to the experienced contrast between life in the tropics and the day to day in their country of

origin, second-home owners generally exhibited a critical perspective on other foreigners. Some disregarded them as boring or suspicious, while others perceived both foreign residents and locals as a fascinating and interesting mix of characters. In the words of one second-home resident whose experience of living in Hawaii several years ago marked her interest in diverse communities: "I like a community where I am not the majority. Where, in fact, there is no clear majority. Foreigners here...it's a mixed bag. For instance it is interesting to run into a German here who is a leishmaniasis specialist. I run into very, very interesting people here just when I think I'm done" (I20, 2 April 2010). This contrasts with entrepreneurs who generally did not reflect upon the lives of others during the interview. In a way this is because they perceive the social and natural landscape as a business opportunity, recognizing the potential of capitalizing on the reputation of Bocas del Toro as a tourist destination. Therefore, as they have made Bocas their permanent home, entrepreneurial migrants' economic interests and daily lives typically take precedence over examining their place within *bocatoreño* society.

Until settling in Bocas del Toro, entrepreneurial respondents had led what McHugh (2000) terms a 'footloose' lifestyle, characterized by restlessness, in some cases, and flexible careerism in others. About half of the entrepreneurial interviewees, stated that the development of their businesses was somewhat opportunistic, highlighting that they took them on because they allow them to maintain the laid-back, relaxed way of

life they had been looking for, and found in Bocas. This is particularly true for those who had been in Bocas for at least seven years. For instance, one interviewee, now employed as a guide for European tourists in Bocas, had traveled extensively throughout Latin America until settling in Panama in 1999, where she initially made a living by selling handicrafts to tourists (I3 13 February 2010). Another couple explained they had moved to Bocas del Toro because they were bored with their jobs in the United States. They eventually made it their home, after stumbling upon a real estate business opportunity, following an extended holiday in Central America. (I19 14 April 2009). In contrast, more recent arrivals, many of whom have also engaged in significant amounts of international travel, specifically chose Bocas del Toro for its economic opportunities. As expressed by one respondent: "we came here looking for a turnkey dive business in Central America with development potential in a country that my whole family could relocate to" (I25 1 April 2010).

### *Migrating to Bocas del Toro: Why move to Bocas? Why leave home? And what path to follow?*

> I love it here. There's an atmosphere…I can't quite explain it. It surely isn't perfect. (I2 19 February 2009)

> To me this whole place is entertaining as hell. (I5 25 March 2009)

> Waterfront. The view from The Reef Bar overlooking the water towards the islands and watching the activity on the water is just so very relaxing. (Or maybe it's the Gin and Tonics). (Anonymous survey response, 1 February 2009)

The previous quotes from interview and survey responses illustrate the variety of reasons foreign residents put forth to explain what attracted them to and keeps them in Bocas del Toro. Based on the self-selected survey responses, these features of attraction, common to all respondents irrespective of category, include landscape and scenery, natural environment (combination of ocean, jungle, clean air, and warm temperatures), cultural diversity and relaxed lifestyle, and affordability.

On the other hand the reasons given for wanting to leave their home countries, specific to each migrant category, reflect a combination of both structural political economic factors and personal motives. Most of the retirees I interviewed represent a rapidly growing segment of the population in developed nations. They moved to Bocas del Toro escaping daily stress, and searching for a relaxed, warm, affordable location with an existing community of foreigners. In the words of a retired couple who moved to Bocas del Toro permanently in 2007 after having worked outside of their home country for 15 years: "We chose Panama as a retirement destination because of its proximity to North America, its political stability and its economic stability. We choose Bocas for its beauty and sand beaches" (I23 25 March 2010). Another young retiree had more political reasons for leaving: "One attribute stands clear above the others and was the root of our goal to relocate form The USA, individual liberty remains the clear attribute which we seek to live with. Panama and

Bocas provide the level of liberty that we can live within comfortably" (I24 30 March 2010). Second-home owners had similar motivations, but due to attachment to life in the country of origin, they decided to embrace the experience of living abroad on a temporary or part-time basis. One respondent moved to Bocas because she decided she no longer wanted to spend winters in the United States. Additionally, after many years of pursuing what became a successful academic career, she had found herself living in a culturally homogeneous town in the US. Therefore, although she also explains that her ties to friends in the United States are very strong, the diversity of Bocas was a major attraction. While she initially felt the need to decide between the US and Panama, she eventually reached the conclusion that she could do both, as she did not want to completely sever ties for practical and financial reasons (I20 2 April 2010). And finally, entrepreneurs or economically active migrants were motivated to move to a new location where they could experience a more laid-back lifestyle, while simultaneously making a living. A couple who run an eco-tourism operation in the archipelago stated that after speaking about the possibility of working on a farm in a rural setting, they chose to move to Bocas due to its potential for ecotourism. In contrast to their past life, in Bocas they saw an opportunity to embrace a lifestyle in tune with nature, while still being able to make enough money to travel to visit family and friends (I7 22 March 2009).

The three migrant categories were not necessarily useful in explaining the specific paths followed by migrants to re-make their lives in Bocas del Toro. Instead, I found that these paths are best explained in terms of length of residency in Bocas. A well kept secret in the mid to late 1990s, Bocas was an accidental find for many of the first arrivals (i.e., those who arrived more than seven years ago) who tended to be flexible and creative in finding ways to sustain themselves economically. As one interviewee, who had lived in Mexico, Honduras, and Costa Rica prior to settling in Bocas in 1999 explains:

> My being in Bocas is by chance. I came to volunteer on a marine turtle conservation program and got stuck. Although this work ended about two years ago, the first years in Bocas I primarily made money by selling handicrafts. I currently work as a tour guide for European visitors. Bocas became home in the past four or five years, probably around the time I bought my house. My first house ever. (I3 13 February 2010)

Conversely, more recent arrivals came as a response to the rising popularity of Panama, and Bocas in particular, as a tourist, second home, retirement and/or investment destination. Motivated by word of mouth, websites promoting living abroad, or focused searches for business opportunities, those who moved to Bocas within the past seven years usually researched a few different locations, making an informed decision to move to Bocas based on specific criteria. These criteria include good business development environment (I23 25 March 2010), ability to retire in a *tranquilo* lifestyle, and the possibility of creating a life with a certain level of individual liberties no longer available in the United Stats (I24 30 March 2010). Of

this group of relatively recent arrivals, a few respondents were very aware of the realities of living and working in Bocas and came here precisely to embrace challenges, to appreciate and learn about natural biodiversity, and to engage with the local culture. The rest, especially respondents who bought into planned residential developments, now admit that they were sold an idealized tropical life. Developments such as Red Frog and Solarte Island were never completed as promised, requiring residents to be responsible for things such as inter-island transportation, water and energy supply, and grounds maintenance, as well as to forgo the use of promised amenities such as restaurants and communal meeting areas (I17 22 January 2009 and I2 19 February 2009). One respondent summarized this experience by stating that the "concept of tropical paradise and [the] reality are opposing" (I12 31 January 2010).

Although none of the interviewees went as far as denying the existence of problems in Bocas, they certainly downplayed their importance when weighted against the narrative of idyllic island living and improved quality of life. However, frustrations with life in Bocas del Toro did emerge among all respondents, including rising costs of living, corruption, the apathetic nature of locals and their low feelings of responsibility in matters of the environment and civic engagement, and rising levels of theft. Responses to recent events such as the closure of a foreign resident sponsored fund-raising event during an unexpectedly declared day of national mourning, and repeated bans on social events at a foreign-owned bar, illustrate this

growing sense of unease with local authorities. Informal conversations with foreign residents during which they expressed their frustrations with the limits and restrictions imposed by local government, revealed that many of them perceived these restrictions as targeted "anti-gringo" efforts. This juxtaposition of the island idyll with the contradicting frustrations with the realities and politics of island living can be explained by the fact that the move to a small island community in the developing world is driven by a romanticized perception of tropical living as observed through the 'migrant gaze'. It remains to be seen whether a longer stay in Bocas del Toro will translate into more involvement with local political and social life, and whether this, in turn, will revert the vision of alternative lifestyle to a quotidian daily existence.

***On Interacting and Integrating: How do foreign residents navigate daily life in Bocas del Toro through the 'migrant gaze'?***

Seventy eight percent of survey respondents are from the United States, and only 7% are from non-English speaking countries. Most come from a mid-to-upper economic class background, and share a common upbringing and language relative to the local population. In fact, most foreigners can only communicate in Spanish at a very basic level and, for the most part, expect to (and can) get by in English. This shared language and culture represents the lens through which migrants perceive their interactions with locals, as well as their ability and/or desire to integrate with the local community. Indeed, it is in the context of the 'migrant gaze' that 88% of survey respondents described their interactions with local residents as social. However, as

stated by one interviewee who, through marriage with a Panamanian, has managed to effectively become part of local society:

> Social interactions involve partying. Many foreigners form friendships with neighbors and workers who become life family. However, many of these relationships are based on the money and/or help the foreigner has to offer. The difference in language and socioeconomic [background] makes it difficult for locals and foreigners to form real friendships although it does happen! I have many 'real' local friends! Then again, I speak Spanish. (I22 30 March 2010)

In addition to language and cultural background, I found that location of residence within the archipelago and migrant category also played a role in determining the degree and type of interaction between foreigners and locals. Foreigners who did not work, namely retirees and second-home owners, and who reside in the outer islands tend to relate with their local neighbors, typically indigenous, as employers, usually providing them with jobs as gardeners, cleaners, and security guards. They sometimes have established friendships in Bocas Town with local English-speaking Afro-Antilleans, primarily through encounters in social spaces such as restaurants and bars. In contrast, entrepreneurial migrants who work and reside in town have more opportunities to mingle and interact with locals. In particular, second-home or residential tourists exhibited a lower sense of social engagement due to the temporary nature of their stay. Entrepreneurs, on the other hand, due to their more permanent nature and financial interests, tended to be more involved in local politics, employ local staff, and may actively partook in the daily goings on of the local community. Finally, retirees, of similar permanence to economically active migrants, were

looking to create a sense community that sometimes included local residents. One long-term business owner aptly summarizes these findings:

> Locals and foreign interactions can be characterized in a number of ways. [On the one hand] locals and foreigners who have little or no interest in each other...stick to their routines and stay in their boxes with no need to interact. [These are] mainly retirees or self-sufficient second homeowners. [Next are] long-term business owners [who] mostly integrate into or accept local culture... [have] good relations with local people. Some speak Spanish. [Finally] are new businesses or arrivals [who are] focused on their objectives here, no thought for the locals. Interaction & contact is through necessity only so strained relations, [and] little or no Spanish [is] spoken. (I25 1 April 2010)

The 'migrant gaze' has unexpected ways of affecting interactions with locals and with other foreigners as they integrate into the Bocas del Toro community. In one extreme case it resulted in murder. In June of 2010 two foreign residents were reported missing. It was later discovered that another foreigner, known as "Wild Bill", had allegedly killed them to gain control of their assets and properties. Subsequent investigations brought to light that the suspect had already murdered at least four other foreign residents of Bocas del Toro for the same reasons. During informal conversations with foreign residents after the discovery of the murders, they mentioned that this case affects them all, in terms of their own ability to trust new arrivals, and the perception of locals towards foreigners. In contrast to those foreigners with questionable intentions, others rapidly became aware of the extreme poverty in which some of their local neighbors were living, especially members of indigenous groups. In response, they set out to help these communities, motivated by

a combination of free time and past experiences of volunteerism and philanthropy in their home countries. The success of the Bocas Education Service Organization (BESO), a volunteer-based non-profit organization stems from partnering directly with local schools and communities. Both cases illustrate the wide spectrum of possible ways in which the 'migrant gaze' can materialize individual desires to live in paradise.

### *Environmental Considerations of Lifestyle Migration: Are migrants "Consuming" Paradise?*

Foreign residents have a very good understanding of what constitutes an environmental problem. When asked about local issues, 93% of survey respondents claimed that they feel a lot of personal responsibility towards the environment, and identified sewage, solid waste disposal and potable water quality and availability as the main problems affecting Bocas del Toro. Other issues described during the interviews included overfishing, polluted waterways, and marine species' habitat destruction through activities such as sand mining and mangrove trimming. In practice their concern was illustrated by the fact that, despite existing logistical difficulties and relative high costs, more than three quarters of foreigners who filled out the survey recycled, 84% collected rainwater for personal use, and almost half composted organic waste. The use of solar panels and other environmentally friendly activities such as growing their own food was limited by cost, environmental conditions (e.g., some people have built homes in swampy wetland areas not apt for

growing food), and access to land (e.g., if they live in apartment in town vs. a house on outer islands). Only 64% of survey respondents answered the question about whether they felt they had an effect on environmental issues in Bocas del Toro. Of these, 83% recognized that, as a group whose standards for comfortable living translate into relatively high levels of consumption, they have a significant impact on the local environment. As one survey respondent indicated:

> "Of course we all have an aggregate effect. We may think well, it is just one time, or just me doing something bad, but when aggregated and multiplied, it becomes as much of a problem as a large project." (Anonymous survey response, 31 January 2009)

The remaining 17%, in blatant disregard for their own demands on local natural resources and their role as producers of waste, blamed these problems on local apathy and ignorance. The following quotes obtained from survey responses illustrate this point:

> "No. Everything I do is counterbalanced by neighbors behaviors, and I'm losing the battle." (Anonymous survey response, 4 February 2009)

> "I don't think the most active foreigner here can have an impact when the locals don't care about their own environment. Go look at all the outhouses discharging directly into the water around here. Nobody cares." (Anonymous survey response, 31 January 2009)

> "I would love to help teach conservation and about environmental issues but I feel the locals just don't care." (Anonymous survey response, 31 January 2009)

The local population did not currently express the same quality of environmental awareness, as their concerns were primarily related to the value derived from productive uses of nature[10]. However, Gosnell and Abrams (2009) suggest that the influx of interested foreigners may in fact lead to shift in environmental thinking within the local population. This is happening in Bocas del Toro in two ways. First, foreigners provide salaried jobs, reducing the dependence on natural resources. And second, through subtle mechanisms of knowledge transfer, such as public displays of environmentally responsible behavior and employer-employee interactions, locals have the opportunity to learn about and experience the environmental benefits of activities like recycling, natural pest management, and sewage and water treatment.

## V. CONCLUSION

In evaluating the process of lifestyle migration to Panama, this research represents the first academic exploration of this phenomenon in the region. This chapter demonstrates that, contrary to population geographer's oversimplified portrayal of transnational mobilities, the decision and process of lifestyle migration involves both structural and personal motivations, and are influenced by globally produced images of ideal alternative lifestyles in idyllic tropical locations such as Bocas del Toro. In this sense, globalization plays a major role in creating the political economic context

[10] See Chapter 3 of this dissertation for a more detailed explanation of local perceptions of a changing environment.

within which foreigners are responding to Panama's recently created incentives to attract foreign investors, the economic and political conditions in countries of origin that lifestyle migrants are increasingly finding undesirable, and in selling (and materializing) the possibility of re-making lives abroad. Research findings point out that the despite the wide range of strategies used for interacting and integrating with the destination country, these are essentially seen through the perspective of a 'migrant gaze' that is adopted by foreign residents as they understand their local experiences in contrast to their previous lives. This perspective also helps to explain the various levels of engagement foreign residents of Bocas del Toro have with other foreigners, the local community, and with environmental concerns.

## SOURCES CITED


Arden & Price Consulting/University of Miami (AP/UM). 2008. Informe de Avances No. 2: Plan de Manejo Costero de la Provincia de Bocas del Toro. Programa Multifase de Desarrollo Sostenible de Bocas del Toro. Panamá.

ATP, 2010. Sitios con Potencial Turistico: Provincia de Bocas del Toro. Website accessed September 29, 2010: http://www.atp.gob.pa/archivos/pdf/potencial/bocas.pdf.

Benson, Michaela C. 2010. The Context and Trajectory of Lifestyle Migration. *European Societies*. 12(1): 45-64.

Benson, Michaela C. and Karen O'Reilly. 2009a. Lifestyle Migration: Escaping to the Good Life. In Benson, M.C. and K. O'Reilly (Eds.). Lifestyle Migration: Expectations, Aspirations and Experiences. Ashgate, Aldershot.

Benson, Michaela C. and Karen O'Reilly. 2009b. Migration and the Search for a Better way of Life: A critical exploration of lifestyle migration. *The Sociological Review*. 57(4): 608-625.

Bernard, H. Russell. 2006. Research Methods in Anthropology: Qualitative and quantitative approaches (4th Ed.). Oxford, Altamira Press.

*Bocas Breeze*. 2008. Bocas Bits. 5(11).

*Bocas Breeze*. 2009. Bocas Bits. 6(4).

Briceño, Amilcar E. 2004. Historia y Sociedad de Bocas del Toro y de la Comarca Ngöbe-Bugle: del Siglo XV al Siglo XXI. Panamá, Editorial Universitaria "Carlos Manuel Gasteazoro".

Bury, Jeffrey. 2005. Mining Mountains: Neoliberalism, land tenure, livelihoods, and the new Peruvian mining industry in Cajamarca. *Environment and Planning A*. 37: 221-239.

Castles, Stephen and Mark J. Miller. 2003. The Age of Migration (3rd Ed.). London, Palgrave MacMillan.

Comisión Económica para América Latina y el Caribe (CEPAL). 2009. Panamá, Evolución Económica Durante 2008 y Perspectivas para 2009. México, D.F.

Concertación Nacional para el Desarrollo (CND). 2008. Acerca del Proceso. Retrieved May 29, 2008, from http://www.concertacion.org.pa/portal/lang__es/tabID__3657/DesktopDefault.aspx.

Decreto de Ley No. 3, 22 February 2008. Que crea el Servicio Nacional de Migración, la Carrera Migratoria y dicta otras disposiciones. Gaceta Oficial No. 25,896, 26 February 2008. Consejo de Gabinete, República de Panamá.

Economist Intelligence Unit (EIU). 2008. Country View: Outlook for 2008-2009. Economist Intelligence Unit Views Wire, 10 March 2008.

Frohlick, Susan. 2009. Pathos of Love in Puerto Viejo, Costa Rica: Emotion, Travel and Migration. *Mobilities*. 4(3): 389-405.

Gosnell, Hannah and Jesse Abrams. 2009. Amenity Migration: Diverse conceptualizations of drivers, socioeconomic dimensions, and emerging challenges. *GeoJournal*.

Guerrón-Montero, Carla. 2006. Tourism and Afro-Antillean Identity in Panama. *Journal of Tourism and Cultural Change*. 4(2): 65-84.

Gwynne, Robert N. and Cristóbal Kay (Eds.). 2004. Latin America Transformed: Globalization and Modernity (2nd Ed.). London, Edward Arnold.

Halfacree, Keith H. and Paul J. Boyle. 1993. The Challenge facing migration research: the case for a biographical approach. Progress in Human Geography. 17(3): 333-348.

Hall, C. Michael and Allan M. Williams (Eds.). 2002. Tourism and Migration: New relationships between production and consumption. London, Kluwer Academic Publishers.

Harvey, David. 2007. A Brief History of Neoliberalism. Oxford, Oxford University Press.

Heckadon-Moreno, Stanley (Ed.) 1993. Agenda Ecológica y Social para Bocas del Toro: Acta de los Seminarios Talleres. Panama, Smithsonian Tropical Research Institute.

Instituto Nacional de Estadística y Censo (INEC). 1990, 2000, 2010. Censos Nacionales de Población y Vivienda. Contraloría General de la República de Panamá.

Jackiewicz, Edward L. and Jim Craine. 2010. Destination Panama: An examination of the migration-tourism-foreign investment nexus. [Special Issue on Lifestyle Migration]. *Recreation and Society in Africa, Asia & Latin America.* 1(1): 5-29.

Janoschka, Michael. 2009. The Contested Spaces of Lifestyle Mobilities: Regime Analysis as a Tool to Study Political Claims in Latin American Retirement Destinations. *Die Erde.* 140(3): 251-253.

Johnson, Mark and Suzanne Clisby. 2008. Both 'One' and 'Other': Environmental Cosmopolitanism and the Politics of Hybridity in Costa Rica. *Nature and Culture.* 3(1): 63-81.

King, Russell. 2002. Towards a new map of European migration. *International Journal of Population Geography.* 8(2): 89-106.

King, Russell and John Connell (Eds.). 1999. Small Worlds, Global Lives: Islands and Migration.

King, Russell and Nancy Wood (Eds.). 2001. Media and Migration: Constructions of mobility and difference. London, Routledge.

King, Russell, Tony Warnes and Allan M. Williams. 1998. International Retirement Migration in Europe. *International Journal Of Population Geography.* 4:91-111.

King, Russell, Tony Warnes and Allan M. Williams. 2000. Sunset Lives: British Retirement Migration to the Mediterranean. Oxford, Berg.

Kull, Christian A., Camellia K. Ibrahim, Thomas C. Meredith. 2007. Tropical Forest Transitions and Globalization: Neo-Liberalism, Migration, Tourism, and International Conservation Agendas. *Society and Natural Resources.* 20(8): 723-737.

Lazaridis, Poyago-Theotoky and King. 1999. Islands as Havens for Retirement Migration: Finding a Place in Sunny Corfu. In: King and Connell (Eds.). Small Worlds, Global Lives: Islands and Migration. London, Pinter.

Lee, Everett S. 1966. A Theory of Migration. *Demography.* 3(1): 47-57.

Ley No. 5, 11 January 2007. Agiliza el proceso de apertura de empresas y establece otras disposiciones. Gaceta Oficial No. 25,709, 12 January 2007. Asamblea Legislativa, República de Panamá.

Ley No. 54, 22 July 1998. Por la cual se dictan medidas para la estabilidad jurídica de las inversiones. Gaceta Oficial No. 23,593, 24 July 1998. Asamblea Legislativa, República de Panamá.

McCarthy, James. 2008. Rural Geography: Globalizing the countryside. *Progress in Human Geography*. 32(1): 129-137.

McHugh, Kevin E. 2000. Inside, outside, upside down, backward, forward, round and round: case for ethnographic studies in migration. *Progress in Human Geography*. 24(1): 71-89.

Meletis, Zoe A. and Lisa M. Campbell. 2007. Call it Consumption! Re-Conceptualizing Ecotourism as Consumption and Consumptive. *Geography Compass*. 1(4): 850-870.

Migration Policy Institute (MPI). 2006. America's Emigrants: US Retirement Migration to Mexico and Panama. Washington DC, Migration Policy Institute.

Ministerio de Comercio e Industrias (MICI). 2010. Inversión Directa Extranjera en Panamá se dispara. Retrieved 7 July, 2010 from http://www.mici.gob.pa/ver_noticias_full.php?id=892.

Newton, Velma. 2004. The Silver Men: West Indian labour migration to Panama 1850-1914 (2nd Ed.). Kingston, Ian Randle Publishers.

O'Reilly, Karen. n.d. The Rural Idyll, Residential Tourism, and the Spirit of Lifestyle Migration. Department of Social Sciences, University of Loughborough. Retrieved May 24, 2008, from http://info.lut.ac.uk/departments/ss/lmhub/documents/Anthro-tourism%20paper.pdf.

Ortiz Guitart, Anna and Cristóbal Mendoza. 2008. Vivir (en) la Ciudad de México: Espacio vivido e imaginarios espaciales de un group de migrantes de alta calificación. *Latin American Research Review*. 43(1): 113-138.

Peck, Jamie. 2004. Geography and Public Policy: Constructions of neoliberalism. *Progress in Human Geography*. 28(3): 392-405.

Perreault, Martin and Patricia Martin. 2005. Geographies of Neoliberalism in Latin America. *Environment and Planning A*. 37: 191-201.

Sheridan, Laura. 2007. The World's Top Retirement Havens in 2007. *International Living Magazine*. Retrieved Online May 2, 2008, from

http://www.internationalliving.com/internal_components/further_resources/09_01_07_retirement.

Sunil T. S., V. Rojas, and Don E. Bradley. 2007. United States' International Retirement Migration: The reasons for retiring to the environs of Lake Chapel, Mexico. *Ageing and Society* 27: 489-510.

Tolson, Jay. 2008. A Growing Trend of Leaving America. *US News and World Report.* Retrieved 1 September 2010 from http://www.usnews.com/news/articles/2008/07/28/a-growing-trend-of-leaving-america.

Urry, John. 1995. Consuming Places. London, Routledge.

Urry, John. 1999. Mobile Cultures. Published by the Department of Sociology, Lancaster University, Lancaster. Retrieved May 29, 2008, from http://www.comp.lancs.ac.uk/sociology/papers/Urry-Mobile-Cultures.pdf.

Urry, John. 2002. The Tourist Gaze (2nd Ed). London, Sage Publications.

Williams, Allan M. and C. Michael Hall. 2000. Tourism and Migration: New relationships between production and consumption. *Tourism Geographies.* 2(1): 5-27.

Young, Emily. 1999. Balancing Conservation with Development in Small-Scale Fisheries: Is ecotourism and empty promise? *Human Ecology.* 27(4): 581-620.

## Appendix A. EXPAT SURVEY

**This survey is part of a broader Ph.D. dissertation research project from the University of California, Santa Cruz, in conjunction with the Smithsonian Tropical Research Institute (STRI). The project attempts to understand the social and environmental changes that are occurring in the Bocas del Toro Archipelago. Additional components of this research include in-depth interviews with both locals and foreign residents, and an ecological assessment of the impacts of coastal development on the marine environment.**

**The demographic information (section II) is asked to facilitate analysis of responses, and will be used strictly for analytical and comparative purposes within this research. No personal information that may identify you in any way is requested, and all individual responses will be kept confidential. Please drop-off completed surveys in the marked box at the Super Gourmet.**

**Thank you for your time, and please feel free to contact me (Ana Spalding: aspaldin@ucsc.edu) if you have questions or comments about this research.**

### I. ENVIRONMENT

1. How concerned are you about the following environmental issues? (Please mark one box per row)

| | Not Concerned | Concerned | Very Concerned | Neutral | Does not apply |
|---|---|---|---|---|---|
| Municipal water quality/availability | | | | | |
| Marine ecosystem health (seagrass, corals, mangroves, | | | | | |
| Beach access | | | | | |
| Solid waste disposal | | | | | |
| Sewage | | | | | |
| Ocean water quality | | | | | |
| Deforestation | | | | | |
| Availability of local seafood | | | | | |

2. How much personal responsibility do you feel towards the environment?

| None | A little | A lot |
|---|---|---|

3. How often do you do the following?

| | Never | Occasionally | Frequently |
|---|---|---|---|
| Recycle | | | |
| Use solar panels | | | |
| Collect rain water | | | |
| Provide your own sources of water other than rainwater | | | |
| Compost | | | |
| Grow your own food | | | |
| Others: (Describe) | | | |

4. If you answered "never" for most of the categories in question #3, please explain briefly any limitations to carrying out such activities:

5. Do you think you impact or affect these environmental issues? Please provide a brief explanation:

**II. DEMOGRAPHIC INFORMATION**

1. Gender: M ☐ F ☐

2. Age: _____

3. Marital Status: Single ☐ Married (or with partner) ☐ Divorced ☐ Other ☐

4. Do you have children? Yes ☐ No ☐

If YES... How many? _____ Ages _____

Do they attend school in Bocas del Toro? Yes ☐ No ☐

5. Are you employed? Yes ☐ No ☐

If YES...what is your occupation: _____

6. What is your province/state/city and country of origin?

_____

7. How long have you been in Bocas del Toro? _____

8. Type of visa in Panama: _____

9. How many foreigners do you estimate currently live in the Archipelago? _____

**III. TRAVEL**

1. Do you own a home in your country of origin? Yes ☐ No ☐

2. How often do you go back to your home country?

| < 1 time/year | 1-2 times/year | 3-4 times/year | > 4 times/year |
|---|---|---|---|

3. Please list three things you miss most from your home country:

_____

_____

_____

4. Permanence in Panama: (check the appropriate category)

| | |
|---|---|
| Full time (main residence) | |
| Permanent (> 6 months in Panama) | |
| Part-time (< 6 months in Panama) | |
| Other (please describe) | |

5. Please check the category you most identify with:

| | |
|---|---|
| Second-home or residential tourist | |
| Entrepreneur or economically-active immigrant | |
| Retiree | |
| Other (please describe): | |

## IV. GENERAL QUESTIONS ABOUT THE BOCAS DEL TORO ARCHIPELAGO

1. What are your main reasons for moving to Bocas del Toro? (Check all appropriate categories, and please elaborate in the additional space)

| | |
|---|---|
| Access to marine environment | |
| Diversity/mix of people and cultures | |
| Environmental quality | |
| Climate | |
| Financial (high cost of living in home country) | |
| Landscape/aesthetics | |
| Health | |
| Quality of life (incl. social scene, friends, family, etc.) | |
| Life outside "system" | |
| Other (please describe): | |

2. What activities do you engage in here in Bocas del Toro? (Please check all that apply, and add any activities not listed)

| | |
|---|---|
| Gardening | |
| Hiking | |
| Boating | |
| Bird watching | |
| Fishing | |
| Biking | |
| Surfing | |
| Kayaking | |
| Snorkeling | |
| Diving | |
| Others: | |

3. Where in the Archipelago do you live? _____

4. What is your main form of transportation (ex. walk, bike, car, boat, motorcycle)?
Within town: _____ To-from town: _____

5. What are you main frustrations in the Archipelago of Bocas del Toro?

6. What are your main attractions to the Archipelago of Bocas del Toro?

## Appendix B. EXPAT INTERVIEW GUIDE

Gender:
Age:
Marital Status:
Children? (how many?):
Currently Employed?
Previous employment?
Province/state and country of origin?
How many foreigners do you think live here now?

1. When did you move to Bocas and why did you **move to Bocas**?
2. Do you have strong **ties to your home country**? And does this affect your expected permanence in Bocas? (e.g., How often do you go back? What kinds of things do you miss from home? Do your friends and family visit you here?)
3. How would you describe **social and cultural interactions between locals and foreign immigrants**? Have they changed since you've been here? Do you speak Spanish? And how does language affect these interactions?
4. What are some of the major environmental problems currently affecting Bocas. How do you understand/perceive/explain/justify **environmental issues/problems** (in both origin -in terms of experience with the issues-, and destination -in terms of current problems- country)? Have they changed since you've been here?
5. How do you feel about national and local "**development**" efforts? (including tourism, aquaculture farms, marinas, support for commercial and subsistence fishing, lumber, incentives for foreign residents?
6. Recommendations of other interviewees.

# Chapter 3.

# LOCAL PERSPECTIVES ON THE RECENT RESIDENTIAL BOOM IN BOCAS DEL TORO, PANAMA, AND ITS ASSOCIATED SOCIAL AND ENVIRONMENTAL CHANGES

## I. INTRODUCTION

International flows of people from developed to developing countries constitute a relatively new pattern of contemporary international migration, and are typically characterized by a search for so called 'lifestyle' destinations, with warm climates, cheaper costs of living, environmental benefits, and a perceived relaxed quality of life. Socio-economic and cultural differences between individuals of the countries of origin and destination raise interesting questions about the potential impacts of imported attitudes and behaviors on both natural resources and human communities of a given locality. In recognition of the growing importance of the Bocas del Toro archipelago in Panama as one such lifestyle destination, this chapter explores the socio-environmental implications of new migratory flows to the region. Specifically, it focuses on how the local *bocatoreño* community perceives and experiences the social, cultural, and ecological changes that have occurred in the area since the 1990s, in terms of changes in land tenure and the emergence of new economies. Additionally, given the diversity of the local population and the environmental changes associated with new patterns of land ownership and alternative sources of income, it discusses how this phenomenon of lifestyle migration differentially affects

population sub-groups, and how the local communities perceive and conceptualize ensuing environmental transformations.

This paper is based on interviews conducted with men and women from the local community and relies, primarily, on trying to understand, from their perspective, what these changes are and how they have affected life and nature in the archipelago. In the first section I set the context of this research, by linking historical and current economic cycles with patterns of demographic change. This is followed by a discussion of current literature on the political ecology of the environment that serves as the basis for the theoretical framework of this research. Research methods are then described in detail, prior to summarizing the interview responses. I then provide a discussion of the implications and potential consequences of these socio-environmental changes. Finally, the conclusion reflects upon the findings of this research and provides a brief observation of future expectations for the region.

## II. CONTEXT: LINKING PAST AND PRESENT ECONOMIC CYCLES WITH POPULATION CHANGE

The current surge of foreign residents in Bocas del Toro is, in fact, the second time the archipelago has faced an economic and demographic boom. The "golden age" of Bocas, as described by Clyde Stephens, a retired entomologist with the United Fruit Company (UFC) and well-known Bocas historian, occurred between 1890 and the

first two decades of the 20th Century, with the emergence of Bocas Town[11], on Colón Island, as the headquarters for the United Fruit Company's operations in the Bocas del Toro province (C. Stephens, Personal Communication, 28 September 2008). During this time a hospital was built, five foreign consulates were established, and three bilingual newspapers were published in Bocas del Toro (Guerrón-Montero 2006). Additionally, the UFC provided education, health, and recreation facilities for its high ranked employees. Not only did this bring affluent, well-educated, and high-skilled North American employees and administrators (and their families) for the UFC, but it also attracted a variety of immigrants from surrounding Caribbean islands to supply the manual labor force for the banana plantations and associated infrastructure. North American foreign presence in the archipelago can be demonstrated through UFC hospital records that show that "a total of 582 white patients were admitted to the hospital on Nancy's Cay" (Stephens 2008, p. 70) between 1908 and 1909. Similarly, Bourgois (1994) points out that thousands of West-Indian immigrants came to work in the Bocas del Toro and Limon divisions of the UFC after the French efforts to build a transoceanic canal failed in 1888. These divisions also absorbed 5,000 of the 10,000 black workers that found themselves unemployed after the Panama Canal construction finalized in 1914. Members of the various indigenous groups in the region also migrated to work sites throughout the province, usually as temporary contract workers who eventually returned to their

[11] Bocas Town, located on Isla Colón, is the capital of the district of Bocas del Toro, and is the main center for commerce, transportation, and tourism.

homes in the mountains and remote coastal areas (Bourgois 1994). Unfortunately, official census data does not reflect this first wave as, at the time, neither Panama nor Costa Rica granted citizenship to the West Indian immigrants who worked in the Limón and Bocas del Toro division of the UFC (Bourgois 1994). The presence of the UFC and associated services such as hospitals, schools, and sanitation facilities, is still reflected culturally, and environmentally in the Bocas del Toro of today.

More recently, lifestyle migration to Panama is the result of economic development policies aimed at increasing sources of foreign investment, as well as the cultural and natural attractions of destinations like Bocas del Toro. Since 1994 a series of laws have been approved with which the Panamanian government has promoted the country as an ideal place for real estate and tourism investment, retirement, and leisure lifestyle[12]. As an economic development strategy, these policies proved to be successful in that Panama is currently considered a top retirement and second home destination (Brass 2007, Sheridan 2007), and in 2007 exhibited an economic growth

[12] Decreto de Ley No. 4, 2 October 1998, modifies Ley No. 8 de 1994. Promotes tourist activities (Gaceta Oficial No. 23,480, 12 February 1998).
Decreto de Ley No. 3, 22 February 2008, creates the National Migratory Service (Gaceta Oficial No. 25,986, 26 February 2008).
Decreto de Ley No. 4, 27 February 2008, creates the Panamanian Tourism Authority (Gaceta Oficial No. 25,989, 29 February 2008).
Ley No. 8, 14 June 1994, promotes tourist activities in Panama (Gaceta Oficial No. 22,558, 15 June 1994).
Ley No. 54, 22 July 1998, judicial guarantees for investments. (Gaceta Oficial No. 23,593, 24 July 1998).
Ley No. 2, 7 January 2006, regulates tourist concessions and rights over insular territories for the promotion of tourist activities (Gaceta Oficial No. 25,461, 11 January 2006).
Ley No. 5, 11 January 2007, facilitates the establishment of businesses. (Gaceta Oficial No. 25,709, 12 January 2007).

rate of 11.2%, the highest for Latin America (EIU 2008). Currently, despite an overall regional reduction in growth due to the global financial crisis, a 6.3% growth rate between January and July 2010 indicates that Panama maintains a relatively strong position within Latin American economies (MEF 2010). This relatively high growth rate, due to activity in the transportation, storage, telecommunications, commerce, hotel and restaurant, and construction sectors, serves as a major attraction for investors and lifestyle migrants (EIU 2008, CEPAL 2009, MEF 2010).

Due to limited access to historical census data and changes in the political and administrative boundaries of the Bocas del Toro Province in 1970 and 1997[13], it is difficult to accurately analyze population change at the district level over time (Briceño 2004). However, during the twenty years covered in this study, political boundaries of the Bocas del Toro subdivision remained constant, making it possible to compare data from immediately before the boom with current population numbers. Between 1990 and 2000, census data show a reduction of approximately 24% in the population of the Bocas del Toro subdivision, the capital of Bocas del Toro district (INEC 1990 and 2000). On the other hand, the 2010 census shows a subsequent rebound in the population of approximately 83% (Table 3.1) (INEC 2010). These numbers reflect emigration of the local population after a major earthquake in 1991,

[13] Ley No. 10, 7 March 1997, creates the Ngöbe-Buglé Comarca (autonomous area), reducing the geographic extent and population size of the Bocas del Toro Province. (Gaceta Oficial No. 23,242, 11 March 1997).

and their eventual return (along with people from other regions of Panama) motivated by the economic growth derived from tourism and real estate activity.

A parallel growth of the foreign population between 2000 and 2010 is reflected through real estate sales, increased demand for products and services, and the creation of employment opportunities for the local population. During this time, the foreign population more than tripled from 314 in 2000 to 1137 in 2010, which represents an increase from 3.2% to 7% of the population of the Bocas del Toro district (INEC 2000 and 2010).

**Table 3.1: Population of Bocas del Toro District 1990-2010**
Source: Instituto Nacional de Estadística y Censo (1990, 2000, 2010)

| | POPULATION (in thousands) | | | PERCENTAGE CHANGE | |
|---|---|---|---|---|---|
| **Province, District, and Subdivision** | 1990 | 2000 | 2010 | 1990-2000 | 2000-2010 |
| BOCAS DEL TORO **(PROVINCE)** | 74,139 | 89,269 | 125,461 | 20.4 | 40.5 |
| BOCAS DEL TORO **(DISTRICT)** | 6,954 | 9,916 | 16,135 | 42.6 | 62.7 |
| **SUBDIVISIONS** | | | | | |
| Bocas del Toro (Capital) | 5,274 | 4,020 | 7,366 | -23.8 | 83.2 |
| Bastimentos | 988 | 1,344 | 1954 | 36.0 | 45.4 |
| Tierra Oscura | ...[14] | 1,950 | 2,661 | ... | 36.5 |
| Punta Laurel | 692 | 966 | 1,730 | 39.6 | 79.1 |
| Cauchero | ...[15] | 1,636 | 2,424 | ... | 48.2 |

[14] This subdivision did not exist in 1990. It was created after the politico-administrative changes of 1997 (See Footnote 2).
[15] Although it has a coastal strip, I excluded the subdivision of Cauchero from my study area, because most of the population lives inland, and therefore have significantly less interaction with foreign residents and associated development.

However, despite the apparent economic success of the archipelago, social transformation, conflict, and environmental change constitute an important, yet often unexplored, part of the story. Between 1992 and 1993 a group of local experts and international scientists met in Panama to discuss the situation of the natural and social environment of the Bocas del Toro Province, identifying deforestation and destruction of marine and coastal resources as the main environmental problems (Heckadon-Moreno 1993). Subsequent environmental assessments confirm these findings, directly and indirectly linking social changes and threats to the natural environment to the coastal and residential development in Bocas del Toro (Soto et al. 1998, PROARCA/APM-ACD 2006, TNC 2008, AP/UM 2008a). Unfortunately, the few existing studies on trends in the environmental health of the archipelago are sometimes contradictory. For instance, Guzmán (2003) suggests a gradual decline of approximately 10% in live coral cover in Bocas del Toro since 1997, while other studies found a slight increase in coral cover between 2002 and 2008 (AP/UM 2008b). However, while the scarcity of historical ecological information and lack of consensus on current data make it difficult to provide specific measures of environmental change over time, the fast pace and type of development occurring in the region clearly indicate that these ecosystems are threatened by anthropogenic activities such as coastal development, construction, and tourism. (PROARCA/APM 2005, AP/UM 2008a).

In addition to environmental change, employment and sources of income in the region are also undergoing serious transformations. Socio-economic indicators have historically responded to the various economic cycles experienced in the archipelago as a result of the United Fruit Company and other banana growers' operations in the region. Specifically, the growth of the banana industry on the islands and in areas surrounding the Chiriquí Lagoon between 1890 and 1909 saw a rise in employment and commercial ventures in the archipelago, primarily in Bocas Town (Stephens 1997, Guerrón-Montero 2006). This was followed by a demographic and economic a decline due to the appearance of the *Panama disease*, a disease of the banana plant that affected a significant portion of the plantations in the area. In response, the UFC moved its operations to Almirante on the mainland in 1909 to be closer to the new port and disease free plantations. They eventually established their headquarters in Changuinola in 1915, where they remain to this day under the name of Bocas Fruit Company (Stephens 1997). The insular areas were mostly left to fend for themselves, which contributed to the emigration of local islanders to the mainland and other parts of the country, in search of better education and employment opportunities. The earthquake of April 1991 further contributed to this economic and demographic downturn, during which time the only sources of income in the archipelago were fishing, government jobs, and contract work with the banana companies on the mainland (Briceño 2004).

It was in this context that the real estate market emerged in the late 1990s and early 2000s as small-scale Italian and North American entrepreneurs foresaw the investment opportunities of buying cheap land and homes for resale. Since then, a variety of residential development projects have been introduced on the main islands of the archipelago (Colón, Bastimentos, Carenero, and Solarte), none of which have been completed successfully. For instance, the Red Frog Beach housing and resort development project began in 2003. After a two-year hiatus from construction between 2006 and 2008 due to financial and legal problems, the project was restructured to include development of approximately 50 homes on 30% of the 68 hectares of Phase 1. Phase 2, which initially proposed the construction of over 200 homes, was stopped after a legal battle over the illegitimate approval of its Environmental Impact Statement (CIAM 2008). Parallel to the growth of the real estate industry, the Panamanian government initiated its mass-titling program as a way to organize existing land tenure agreements. However, under national law, insular and coastal areas are considered to be state property (Díaz 2008). Therefore, in order to capitalize on the demand for land in Bocas del Toro, the Government approved Law No. 2 of 2006[16], a controversial law that allowed and promoted the use of these special areas for tourism purposes through long-term concessions. Although administrative and jurisdiction conflicts inherent in Law No. 2 never allowed it to be effectively implemented, its empty promises eventually attracted larger investors and

[16] Ley no. 2, 7 January 2006, regulates tourist concessions and rights over insular territories for the promotion of tourist activities. (Gaceta Oficial No. 25,461, 11 January 2006).

land speculators to the archipelago. As discussed in more detail in the following sections, my research demonstrates that the result of these, sometimes illegal, real estate activities has been serious land conflicts between locals and foreigners, as well as between foreigners and real estate or development agencies, leading to inflated costs of living, changes in land use and the need for stricter environmental controls, evictions of entire indigenous communities, lack of legal security, and population growth that exceeds the capacity of existing public services and infrastructure (AP/UM 2008a, F. Santos, Personal Communication 9 December 2009, Koster 2009).

## III. THEORETICAL CONTEXT: A POLITICAL ECOLOGY OF LIFESTYLE MIGRATION TO BOCAS DEL TORO

The social and environmental changes currently affecting the Bocas del Toro Archipelago can be understood as the local effects of ongoing processes of globalization, in the context of regional adherence to neoliberal agendas. Theoretically, this study of change is informed by political ecological and geographical research on the nexus between local change and amenity or lifestyle migration processes (McCarthy 2008, Gosnell and Abrams 2009, Boucquey et al. 2010, Cadieux and Hurley 2009). As Boucquey et al. (2010) point out, rural areas around the world that are undergoing such changes are "grappling with declining primary production activities, increasing numbers of relatively wealthier in-migrants, and associated class and cultural tensions" (p. 1). These are all outcomes currently

experienced in Bocas del Toro[17]. By exploring these outcomes in the Panamanian context, this paper contributes to theoretical and empirical discussions about the various expressions of the globalization of transnational migrations on the specific social and environmental landscapes of the Bocas del Toro Archipelago, as reflected by changes in patterns of property ownership, and associated transformations of economic activities. Additionally, it represents a contribution to third world and regional political ecology literature as it critically explores the politics, scale, and distribution of impacts within the context of regional political and economic forces (e.g., Young 1999, Nygren 2000, Kull, Ibrahim, and Meredith 2007, Hecht and Saatchi 2007).

Political ecologists explore these processes of change using a variety of approaches including analyses of social movements of resistance (Escobar 1995, Peet and Watts 2004), the defense of local environmental meanings (Bryant and Bailey 1997, Neumann 1998, Kull et al. 2007), livelihood strategies (Bebbington 2001, Murray 2001, Bebbington 2004), and land tenure agreements (Bury 2005). Given the rapid growth of land sales for residential development in Bocas, and the increase in foreign migrant-led demand for services such as domestic help, construction, restaurants, and outdoor activities, this paper specifically explores these local social and environmental changes in terms of shifts in land tenure arrangements and the

[17] Environmental changes are further explored in Chapter 4 of this dissertation, through an analysis of land use/ land cover change.

emergence of a new economy. I focus on these issues for two main reasons. First, preliminary site visits showed that these are important social transformations, directly related to the real estate boom, which may have long-term effects on the development process of the archipelago. Second, having used a theory-led approach to this research, I draw on debates within political ecology that focus on uneven development in terms of shifting economic relationships and local resource use as a result of, in this case, demographic change (Young 1999, Meletis and Campbell 2009).

Analyses of land tenure also offer a particularly useful perspective from which to explore social change over time, by focusing on the existence (or lack) of processes and institutions through which land titles are sold and transferred, and the resulting changes in land values and uses. Specifically, I borrow from Bury's (2005) conceptual approach to the processes that help to explain land tenure changes in the context of transnational mining operations in Peru. First, land tenure is seen as undergoing a transition from informal arrangements among local residents to private ownership. In the case of Bocas del Toro, these transitions have led to conflict requiring legal action, and highlighting the need for clear legislation. Second, the demand for land by foreign interests has resulted in a rapid change in land values. Finally, by selling their land, individuals or whole communities are forced to re-settle elsewhere, leading to a geographic shift of housing arrangements and land-based

activities. As a result, the loss of land through transfer of ownership contributes to social processes of marginalization and dispossession of those in most need (Bryant and Bailey 1997, Murray 2001). In the context of Bocas del Toro, the real estate boom and subsequent rise in land values have led to significant conflicts within local communities and between locals and foreign immigrants, and the complex regulations surrounding land ownership often result in settlements favorable to the party with sufficient economic means to obtain legal representation.

An important concept for the study of social change, and of particular relevance to this case study, is that of diversification of economic activities over time (Murray 2001). This refers to the idea that income is usually obtained from a variety of sources, based on personal preferences, cultural practices, and political and economic influences (Bebbington 2004). The emergence of new sources of income suggests that there are shifts in the traditional proportion of subsistence and cash economy activities, leading to increased reliance on consumer goods. This, in turn, can increase a population's vulnerability when there is no guarantee of long-term, stable employment. With the increase in foreign businesses, one result of new patterns of land ownership, there is also evidence of a power shift due to economic control of local resources (Hurley and Halfacre 2009, Boucquey 2010). With foreigners increasingly crowding out local enterprise, both economically and geographically, it necessary to assess impacts of these changes on the local culture and traditional

economic activities, and explore whether catering to foreign residents constitutes a sustainable form of development.

Additional questions that emerge from this political ecological perspective refer to the perceived environmental consequences of new models of consumption and land ownership, and the differential effect of these changes on sub-groups within the local population. Environmental changes are the result of modified land uses as well as access to and use of natural resources (McCarthy 2008). The discussion on the local perceptions of these changes takes from Walker's (2003) claims that ideas or concepts of landscape are contested between original residents and new migrants. That is, this approach to exploring local perspectives on a changing environment assumes that individuals whose livelihoods have typically depended on primary sector activities will express more concern for existing transformations of land use, and the implications of satisfying an increased demand for natural resources. It is also informed by observations and cultural understanding of a sense of detachment or environmental apathy towards landscapes and resources that are not within the immediate realm of concerns, or that do not appear to affect daily life (M. Smith. Personal Communication 9 February 2009).

Finally, the overall impacts and potential benefits of lifestyle migration are distributed unequally throughout the population. In particular, Nelson's (1997) recognition of

heterogeneity within communities suggests that lifestyle migration affects the local population differentially across class and ethnic divides. The local population encompasses a wide range of individuals with diverse cultural, ethnic, social, and economic class backgrounds. The diversity of the archipelago includes indigenous groups who have inhabited the archipelago and mainland areas of the Bocas del Toro province prior to the arrival of the Spanish in the 16th century. These groups experienced periodic interactions with the Spanish and English explorers, as the latter competed for economic and political control over the region, and its human and natural resources. One of their main enemies were the Miskito Indians from Nicaragua, whose violent attacks, funded primarily by English explorers, led to mass migrations of the coastal indigenous population. These migrations, added to Spanish-led massive mobilization of Indians to the Pacific coast, contributed to the marginalization and depopulation of indigenous groups in the archipelago (Marín Araya 2004).

The Afro-Caribbean or West Indian people began to arrive in Bocas del Toro in the mid to late 19th century in search of land and economic opportunities after the abolition of slavery and the decline of British investment in agricultural activities throughout the Antilles. The major wave of Afro-Caribbean immigrants to Bocas came from Panama to work on the United Fruit Company's (UFC) banana plantations after the construction of the transisthmian Panama railroad in the 1850s and the

failure of the French effort to build a canal in the 1880s. These were followed by a second wave in 1914 with the culmination of the construction of the Panama Canal by the United States. Immigrants who hailed primarily from former British colonies such as Trinidad, Barbados, and Jamaica were used to manual labor as ex-slaves, turtle hunters, and agricultural employees; these immigrants eventually managed to improve their social status within the various ethnicities of UFC workers through land purchases, immigration, and preferential employment policies (Bourgois 1994). Although deeply rooted in Bocas del Toro culture and lifestyle for the past 150 years, Afro-Caribbean people also have a history of migration, and benefit from their associated networks within the Caribbean basin, the United States, and Europe.

The last category of local *bocatoreño* community encompasses people of Latin, Chinese, and European descent whose presence in the archipelago also dates back to the United Fruit Company's operations in the area. Their current roles in Bocas, however, are mixed. Although a few of the Latin and Chinese people initially came to work as laborers for the UFC, recently they serve as farmers, ranchers, merchants, or providers of goods and services to the general population of the archipelago, which coincides with the traditional role of European descendants (Bourgois 1994, Stephens 1997). Additionally, in response to the growing demand for supermarkets and labor resulting from tourism and the real estate boom of the 2000s, the archipelago has seen the arrival of new Latino and Chinese immigrants.

## IV. RESEARCH METHODS

The Bocas del Toro province is divided administratively into three districts: Chiriquí Grande, Changuinola, and Bocas del Toro (Figure 3.1). Because the effects of economic and real estate development are felt mostly in the coastal and insular areas of the province, this research is limited to the four coastal and insular *corregimientos* or subdivisions of the Bocas del Toro District, which encompass the archipelago (Bocas del Toro, Bastimentos, Tierra Oscura, and Punta Laurel) and correspond to clusters of close-by islands. My first exploratory visit to Bocas del Toro was in June 2007, and formal research, including interviews and participant observation, was conducted over a total of 12 months between September 2008 and April 2009, and August and November 2009. Literature reviews and archival research were carried out periodically since January 2007. I used administrative boundaries to select four research sites within the archipelago, namely the four coastal *corregimientos*. Within each *corregimiento* I then chose respondents from the three most populated communities, most of which exhibited a foreign presence. These sites were evaluated from more impacted to less impacted, based on the number of foreigners living in the area and geographical proximity to the main town center, respectively (Table 3.2).

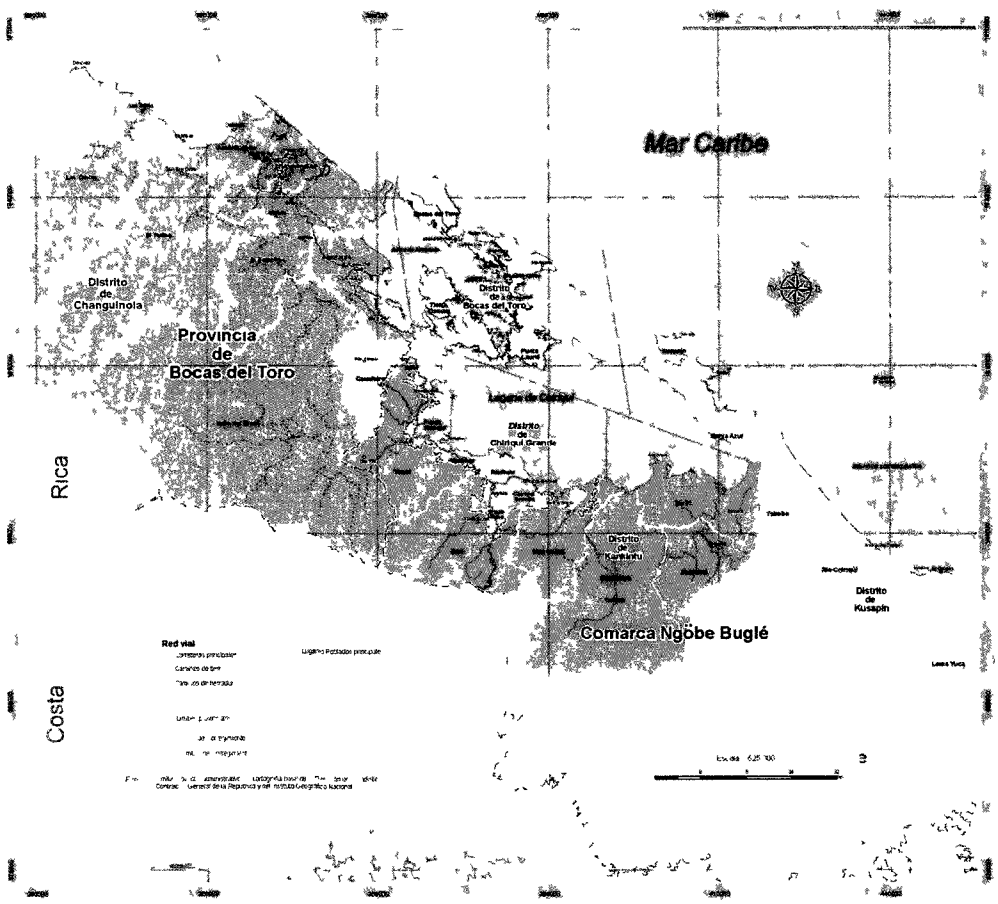



**Figure 3.1: Political Map of Bocas del Toro Province**
Source: AP/UM. 2008. Atlas de los Recursos Marino-Costeros de Bocas del Toro.

Impacts of development and population growth are concentrated in areas close to and in Bocas Town, and dissipate as they move away from the center. Of the 8,280 people living in the study area, more than 50% live between the combined *corregimientos* of Bastimentos and Bocas del Toro, and about one third live in Bocas Town (INEC 2000). This demographic distribution is reflected in the total number of interviews for each site (n), which is relative to population size (Table 3.2). As I aimed to obtain

perspectives from the different ethnic groups within the archipelago, I purposively selected a similar number of interviewees from each of the three main ethnic groups (indigenous, afro-Caribbean or West Indian, other – *bocatoreños* of other descent, including Chinese, Latino, European). For sites #1 and #2, a total of 39 individual interviewees were selected with the help of key informants identified during preliminary site visits. For sites #3 and #4, as 90% of the population is indigenous, focus groups (fg) were considered to be more culturally appropriate forms of interacting with the community (INEC 2000). As such, five focus groups were planned in the communities of San Cristóbal, Buena Esperanza, Isla Tigre, Popa 2, and Cayo de Agua, which included approximately 65 participants in total. Despite the different format used for obtaining data, the focus groups followed the same themes addressed in the individual interviews. During focus groups, one or two community members, generally male, would do most of the talking, while the remaining participants listened. However, inviting the whole community to participate was important in terms of making everyone feel welcome and validating individual responses.

Informal interviews and participant observation were conducted as needed during my daily activities and experiences living on the island.

**Table 3.2: Research Design: Study sites, number of interviews, and number of focus groups**
Source: Instituto Nacional de Estadística y Censo 2000

| **CORREGIMIENTO n= # of interviews fg= # of focus groups** | **#1 Bocas del Toro n=30** | **#2 Bastimentos n=9** | **#3 Tierra Oscura fg=2 (~20 participants)** | **#4 Punta Laurel fg=3 (~45 participants)** |
|---|---|---|---|---|
| **COMMUNITY (population)** | Bocas Town (3139) | Old Bank and Solarte (700) | San Cristóbal (333) | Isla Tigre (305) |
| | Carenero (405) | Bahía Honda (154) | Buena Esperanza (174) | Popa 2 (113) |
| | Boca del Drago (143) | Salt Creek (225) | | Cayo de Agua (312) |

HIGH IMPACT ⟵ ⟶ LOW IMPACT

Interviewees, all over the age of 18, were identified using the snowball sampling method (Bernard 2006). My research did not specifically aim to interview an equal number of females and males. However, I documented the number of times that females were recommended as interviewees, and any differences in participation and interaction during the interview. Additionally, because the snowball technique may have created a bias towards individuals of similar age and economic class, I intentionally asked for and sought a wide range of informants in order to illustrate age and class differences.

Each interview lasted between 30 minutes and 3 hours; and addressed 5 main topics, identified *a priori*: (a) social and environmental change since the arrival of foreign residents (ca. 1990); (b) link between the migratory and residential boom and local development policies; (c) experiences (of the interviewee or people known by the interviewee) related to land tenure and ownership since 1990; (d) changes in

economic activities since 1990; (e) relationship with/dependence on natural resources (daily activities, hobbies, subsistence, entertainment). Standard data obtained from all interviewees included gender, age, marital status, employment, province or region of origin, and an estimate of the number of foreigners currently residing in Bocas del Toro.

All interviews and field notes were stored in a FileMaker database as text and sound documents. With the exception of one interview, conducted in the town of Bastimentos, they were all conducted in Spanish. Therefore the quotes that appear throughout this paper are my own translation of interviewee's words. The first level of analysis was conducted by coding the data according to the five main themes of the interview guide. Within each theme, a second level of analysis was applied using an inductive analytical process, based on the interviewee's own words, to identify additional important topics. I then examined other variables such as gender, ethnic group, and social status in order to develop deeper narratives of the perceived impacts and relative importance of the perceptions of social and environmental transformation throughout the archipelago.

## V. RESULTS: LOCAL PERSPECTIVES OF A NEW BOCAS DEL TORO

This section summarizes interview responses according to the five general themes addressed during the interviews and focus groups. The information presented in this section represents the voice and opinions of interviewees, except in cases where additional information was included to clarify or contextualize responses. These cases are clearly identified as the source of the information is specified.

Of the 39 formal interviews, the respondents' age ranged from 27 to 83 years old, and approximately 75% were male. The gender imbalance is due, in part, to the fact that key informants primarily recommended male interviewees. Additionally, it is rare to see older women still actively participate in daily activities around town, and would have required purposive identification of available subjects, as well as additional time to establish trust with the interviewee. In the group of non-indigenous, middle-aged, employed interviewees, the gender difference was less noticeable, as the women I did interview were mostly professionals, very much involved in community affairs, and willing participants. And finally, within the indigenous interviewees (individuals and in the focus groups), it was mostly a cultural practice to have women present, yet silent. Indeed, in the most remote communities, some women did not speak Spanish[18]. However, it is important to note that the few indigenous women who I interviewed and who actively participated in the meetings held important community leadership

[18] The men who participated in the focus groups claimed they would translate the highlights of the meeting into their indigenous dialect upon their return home at the end of the day.

roles such as president of the local Women's artisan group, secretary of the fishing association, and political representative of their subdivision to the Municipal District Council. These women had clearly been exposed to non-indigenous society for a longer period of time, lived closer to town centers. Although they self-identified as members of the Ngöbe indigenous group, they also tended to easily cross the boundaries between indigenous and non-indigenous society.

### *Locally perceived social and environmental changes since the arrival of foreign residents*

> "It have favors...good and bad because if you look it have more work for people to do, and improvement in many different things that we did before... In one of the negative things, the cost of living is very expensive. All the different materials, even the handworks now, they knew that the stranger people pay enough money for doing building, and when you want to pay them you need to have enough money too to pay. So, it have positive and it have negative" (L32, 26 February 2009)

Most respondents agreed that the first foreign residents began to arrive and purchase land and homes in Colón and Bastimentos Islands in the early to mid-1990s. At this time, the economy of the archipelago had long been in decline, since the UFC moved its operations to Changuinola on the mainland. The 1991 earthquake caused significant damage to existing infrastructure in Bocas Town, further contributing to the demographic and economic downturn of the region (Cortés et al. 1994). With extremely depressed land and home prices, many locals migrated to Panama City and Colón in search of employment and educational opportunities. As one respondent

said, "there weren't too many people left in Bocas Town... all you would see is government employees, old people, and kids" (L23, 28 October 2008). In this context, early arrivals purchased whole blocks and abandoned buildings in town, with the intention of retiring, living simply, or building small family-run hotels and other tourism services for the promised tourism boom that had already began to trickle in as overflow from Costa Rica (Guerrón-Montero 2006). The general impression held by locals of these first foreign residents was that they were friendly, genuinely interested in becoming part of the Bocas community, and cared about the place and its people. According to interview responses, the real boom of foreign residents started between 2001 and 2003, following the already established tourist industry, and was composed mostly of retirees and entrepreneurs from the United States and Europe. This recent growth was seen primarily as speculative, and was portrayed in a much more negative light.

When asked specifically about social changes, the four most common responses were the increased cost of living, emergence of land tenure issues, land speculation, and the fencing of private properties. The first two are discussed in more detail in the following sections. Land speculation was seen as a result of attracting foreigners with transient or short-term residence plans. This, in turn, significantly elevated costs of living in terms of basic necessities, utilities, transportation and construction materials, increased corruption of local government officials, created conflicts of interest within

the local population and between locals and foreigners, led to evictions of individuals and whole indigenous communities, and resulted in the emergence of previously non-existing "visible poverty"[19] (L8, 9 January 2009). Fencing of private properties was also seen as having serious implications for local communities, as illustrated by the following statement from a respondent:

> "What's happening now, I see that more the more tourists are coming in, the more stranger are coming in and building. And people are selling... they are reducing territory even they don't think of the future of they children and grandchildren. They just keep selling and selling... and even sometimes it causing you a lot of problem because if they buy they close up everything" (L32, 26 February 2009)

As a result of *closing up*[20] properties, respondents mentioned the potential breakdown of community structures and networks, lack of integration and communication with foreign residents, reduction or lack of public spaces, and restricted beach, fishing and dock access. One respondent suggested that this phenomenon was also linked to aesthetics and loss of cultural heritage in that there were changes in the actual design of new homes and commercial buildings that, at times, broke existing building codes and regulations (L26, 3 December 2008). Other general issues or concerns mentioned during the interviews included the loss of "Wari-wari"[21] and indigenous languages in

---

[19] The term "visible poverty" was used by one respondent in the context of the municipal dump, where she mentioned one could see people living next to the dump in terrible conditions, scavenging for a living. This type or expression of poverty was apparently previously non-existent.

[20] *closing up* means *fencing in.*

[21] "Wari-wari" is the local English Creole dialect used by Afro-Caribbeans. It is also known as "raw, flat, or di bad English" (Aceto 2001).

the Afro-Caribbean and indigenous groups respectively, and a widespread use of drugs and alcohol. Some respondents claimed that the latter was due, in part, to consumption patterns and attitudes of the foreign residents and tourists, as locals essentially emulated their attitudes and behaviors. Three respondents indicated that they sent their children to live with relatives in Panama City in order to obtain a better education and to prevent them from growing up in Bocas Town, where they would be exposed to the tourism-oriented party scene. In terms of the locals' impressions of the foreign residents themselves, in some cases they were seen as uncooperative with the local government and lacked respect for existing regulations.

On a more positive note, the foreign resident boom was portrayed as contributing to an increase in circulation of money and employment opportunities. Additionally, most respondents (in contradiction with comments from foreigners) claimed they had seen no real changes in terms of crime or theft. Economic growth was seen as the result of higher spending levels of foreign residents, land sales, tourism, and of the increase in employment among the local population. Specifically responses pointed to an increase of jobs in the construction, tourism, and service industries. In fact, some say that at the height of the construction boom there was more demand than supply of labor, which contributed to new forms of local migration with a significant influx of indigenous workers from the *comarca*[22] and outer islands of the archipelago, as well

[22] Autonomous indigenous administrative unit.

as individuals from mainland Bocas del Toro and other provinces such as Chiriquí, Veraguas, and Panama. However, one respondent did express concern over this tendency because of the potential social problems associated with attracting outsiders to Bocas Town. Specifically, he stated that problems such as living in subhuman conditions next to open sewers and over highly contaminated wetland areas in these so-called emergency neighborhoods was caused "first by those who sold their land for a quick dollar, second by those who migrated here from other places in search of employment, and third by the children of families who could no longer maintain them and were forced to build in these neighborhoods" at the margins of the main tourist attraction of Bocas Town. He also claimed that the District barely had enough resources to resolve their own social and infrastructure problems, let alone those of the new laborers (L26, 3 December 2008). The increased circulation of money was also reflected in investments in newer and bigger outboard motors by tour operators, and freshly painted homes throughout Bocas Town.

Finally, in terms of social interactions between locals and foreigners, the locals interviewed talked about the development of good social relations with the first foreigners to arrive in the area. However, with the perception that recent arrivals (within the past 4 to 5 years) had mostly speculative interests, interactions appeared to be more constrained. In the words of one respondent:

> "Many foreigners, especially Americans, sweet talk the indians, the blacks, anyone. They hire them, provide them with stuff, a car to drive...a boat, a motor, while they consolidate what they are trying to achieve. Once they get what they wanted, they abandon that worker and look for someone else to work for them...some of these American guys have behaved well, other have not." (L24 8 November 2008)

Opportunities for social gatherings seemed to be limited to the younger generations' encounters in bars and other social settings, or to employer-employee relationships. Moreover, although the interviews did not explicitly ask how foreigners were perceived or whether they were seen as part of the community, the tone respondents adopted when speaking about dealings with foreigners (business or social) was mixed. For instance, respondents expressed apprehension and mistrust when describing interactions with foreign residents they did not know, whereas exceptions were made when they knew the person, sometimes even considering them to be "one of us" (L36, 19 February 2009).

Comments on environmental changes were somewhat vague and much harder to elicit. For the most part, the first reaction was to say that not much had changed. When probed on specific issues such as pollution and fishing, respondents made general observations about the problems with the supply of potable water and trash and sewage disposal - all serious environmental problems of particular concern for public health. Most agreed that the solid waste disposal system was in chaos, and

needed urgent attention.[23] These concerns were quite general and, beyond the argument that demands on public infrastructure have increased since the arrival of foreign residents, they are not perceived as being exclusively caused by the recent influx of foreigners. What was clear, however, was a generalized perception about foreigners' attitude towards the local environment. This perception was illustrated by the words of one indigenous activist respondent: "Each and every one of them [foreigners] feels they have the right to do as they please, arguing that Panama invited them to invest here and now they are being hindered by environmental laws" (L11 9 December 2008).

In terms of marine resources, all respondents agreed that there was a reduction in fish and lobster catch, and a few commented on the continued consumption of turtle meat. The consumption of turtle is a cultural practice that allegedly continues at small scales, despite being prohibited by law since 1974 (Decreto Ejecutivo No. 104, 4 September 1974). Whether the reduction of fish catch is due to transitions from fishing to construction or other contract employment, to overfishing as a result of higher demand for local seafood to satisfy the growing tourism industry, or to natural variability in an already unproductive marine environment, remains unclear (AP/UM 2008a). What was obvious, however, was that most of the men who were interviewed

[23] Since these interviews were conducted there have been some changes. For instance, in September 2009, the current Mayor, Dr. Joe Anderson, and the Minister of Tourism, Salomon Shamah, joined forces, cleaned up, and moved the municipal dump from the eastern coast of Isla Colón to a new temporary location in the forested center of the island.

had fished either recreationally, for subsistence, or for complementary income at one point in their lives, but had since stopped. The few communities where fishing was still an important subsistence and economic activity were primarily indigenous.

***Link between the real estate and residential boom in Bocas and development policies at a national level***

Few respondents felt there was a clear connection between the central government's promotion of Panama as a retirement and tourism destination, and the residential boom occurring in Bocas del Toro. Indeed, most of the interviewees understood the phenomenon as part of a natural transition from the discovery of the wonders of the archipelago in the early to mid 1990s, to foreign investment in real estate. However, those respondents who did, in fact, perceive the boom in Bocas as part of a larger central government effort to increase foreign investment, explained the ensuing problems with land tenure were the result of poor management, lack of efficient monitoring of investors' actions, and corruption.

When specifically asked what they considered to be appropriate socioeconomic development goals for the archipelago, and whether the current expansion of tourism and real estate was in line with these goals, most respondents stated that they were content with the increase in job availability and the circulation of money. However, they also stated that high levels of corruption at the local level kept the locals from reaping the potential benefits of this type of development, as they were faced with

significantly higher costs of living and a reduction in the provision of basic services such as water and electricity. In effect, locals perceived the current boom to have the potential to contribute to the development of the archipelago. However, they also emphasized the need to regulate and monitor foreigners' activities, as there were currently few legal mechanisms and a lack of enforcement capabilities to control such projects.

***Experiences related to land tenure and ownership since 1990***

All respondents, as well as focus group participants, said they had either personally experienced or heard about serious problems related to land tenure. In particular, the indigenous groups that lived in Popa 2, Cayo de Agua, and Buena Esperanza were concerned about the security of their lands and homes. In Cayo de Agua, for instance, entire communities had been evicted from their homes and lands due to irregular land sale processes. The focus group participants were also aware, however, that the problem was quite complex and that is was difficult to blame a particular person or institution. On the one hand, they admitted that in some cases community members would sell their land when offered what they perceived to be significant sums of money. Accustomed to livelihoods based on subsistence activities, any amount offered by foreigners, usually below market value, seemed like an incredible amount of wealth. At the same time, in some cases, the buyers, usually foreign, had allegedly manually changed the total number of hectares for sale, illegally taking more land

than initially accorded. Additionally, locals claimed that some local authorities were corrupt, in that they either failed to look up the history of the land in question or actively ignored the concerns of the local communities. Experiences with land sale irregularities were very common, and, for the most part, blame was usually placed on a lack of local government support and inherent corruption, instead of on the foreign investors.

***Changes in economic activities since 1990***

Prior to the 1991 earthquake, the only salaried jobs available in Bocas Town were government-based. Other sources of income included artisanal fishing, occasional work with the banana company in Changuinola or Almirante, and sporadic sale of small-scale agricultural products. In addition to these economic activities, individuals participated in subsistence fishing, small-scale ranching, and agriculture practices as a way to provide food for their families (Briceño 2004, Guerrón-Montero 2006). Individuals who had moved to Panama City or Colón in search of education and employment opportunities also provided remittances to supplement local incomes. This has changed significantly since the tourism and residential boom took off in the 1990s. Respondents with higher levels of education and technical skills returned to Bocas to take advantage of these new opportunities and started consulting or tourism businesses, doctor's offices, and construction businesses, among others. Less educated informants also entered the work force employed as construction workers,

janitors, gardeners, cooks, and maids. These jobs were primarily taken by indigenous groups, while, on the other hand, respondents of Afro-Caribbean descent mentioned that they were predominantly employed as tour guides or boat drivers, and restaurant and hotel staff – largely because they speak English. In contradiction to these apparently beneficial increases in employment, one respondent stated that small-scale agricultural activities are recently being re-introduced for subsistence and commercialization, as there has been an increase in the price of certain products such as plantains, bananas, and cacao. Despite organized efforts sponsored by the World Bank's Mesoamerican Biological Corridor project in communities such as Bahía Honda, Isla Tigre and Popa 2, community-based tourism has yet to become a sustainable and consistent source of income due to insufficient promotion and competition between tour operators in Bocas Town. The indigenous population primarily engages in contract work clearing properties and gardening for foreigners, along with small-scale subsistence agriculture, although they would like to be able to engage in more sustainable and lucrative activities.

***Relationship with/dependence on natural resources (daily activities, hobbies, subsistence, entertainment)***

All respondents claimed they relied on the natural environment of Bocas del Toro primarily as part of their daily activities, which included work, transportation, and aesthetic appreciation. The second most common response included activities directly related to subsistence. However, with the exception of older respondents, very few

recognized or considered the use of nature or natural landscapes for hobbies or entertainment. An older respondent spoke of days when the and his friends would leave their *cayucos*[24] tied anywhere in the waterfront of Bocas Town, and take them out for swimming, diving for lobster, or simply to have fun with friends (L6, 29 November 2008). The harsh reality of the need to feed the family, in particular within the indigenous communities, probably explains their generally practical approach to nature. It also implies a deep understanding of natural resources, that is, at times, in conflict with the perception of an aesthetically pleasing playground, usually adopted by foreigners and more affluent locals (King and Connell 1999).

**Table 3.3: Summary of interview responses: Local perspectives on social and environmental change**

| THEME | RESPONSES |
|---|---|
| Social and environmental changes directly related to the influx of foreign residents | *PROS* More circulation of money, employment opportunities, no crime, good interactions with first arrivals<br>*CONS* Land ownership conflicts, higher cost of living, conflict or social tension, "visible poverty", disintegration of community structure, loss of public spaces, loss of traditional language and dialects, increased use and availability of drugs and alcohol |
| Link between residential boom and development policies Role of government in both promoting foreign investment, and monitoring its local impacts | *PROS* Satisfaction with generation of employment, large potential to benefit local population<br>*CONS* Poor monitoring and management of type and scale of foreign investment, corruption prevents locals from benefiting from development |
| Land tenure conflict Effects of rising land values | Affects both locals and foreigners Recognition of complexity in solving problem, and of role of government in finding solutions for all involved |
| Shift in economic activities Livelihood strategies before and after the residential boom | Transition from government and/or banana company jobs, to tourism and construction service industry Emergence of high-skilled tourism consulting, medical services, and construction business, as a result of return migration Jobs are distributed unequally across ethnic and socio-economic groups |
| Relationship with nature How do individuals use natural resources, and how does this affect their perceived value | Primarily used for work, transportation, and subsistence Originally there seemed to have been more recreational use As access to marine environment and private lands changed, recreational uses were reduced |

[24] Local wooden dugout canoe

## VI. DISCUSSION: PROBLEMS AND OPPORTUNITIES OF SOCIO-ENVIRONMENTAL CHANGE

This discussion provides insight on the implications of existing land tenure conflicts and changes in economic activities for the long-term sustainability of Bocas del Toro, in the context of its growing popularity as a lifestyle migration destination. Given the social, economic, and cultural diversity of the archipelago, it is not surprising that the previously described changes fall somewhere along the wide spectrum of positive and negative perceived outcomes. The open-ended nature of the interview instrument and of the process itself allowed for quite personal descriptions of perceived change, and thus for the detection of cultural subtleties and nuances that further help to explain how these complex processes of change materially affect the environment, and different ethnic groups of the archipelago.

### *Implications of Land tenure conflicts*

Islands and coasts in Panama constitute a particularly interesting geographical feature in terms of the legal structures that exist to guarantee the long-term security of land ownership. Two main schools of thought are engaged in an ongoing debate about whether islands and coasts constitute public lands. That is, whether or not they can be owned by individuals, Panamanian or foreign (Díaz 2008). The heart of this debate lies in deciding whether government ownership of land is a means of deriving income for the government (directly through leases and concessions or indirectly through the

taxes generated from investment projects), or whether the government's role is to facilitate the transfer of land to its own citizens in order for each individual to make productive use of that land, provide them with the ability to obtain micro credit, and to grow as a tax contributing entity (Díaz 2008, G. Ruíz. Personal Communication 14 October 2008). Despite the different land ownership arrangements that exist between the foreigners (naively purchasing land in conflict or without title), the Afro-Caribbeans (usually owning land with old titles that have been lost due to sale, abandonment, or illegal appropriation), and the indigenous population (illegal squatting), each and every one of these actors is individually affected by the ongoing land-speculation in the archipelago, as are long-term planning efforts.

In other words, land tenure issues affect locals and foreigners alike. Foreign residents claim they have been tricked into thinking they purchased titled land. Members of the local indigenous groups, in search of subsistence and/or economic opportunities, and with scarce experience with individual property rights, often squat or illegally occupy land without title or rights of possession. And other Panamanians have in some cases unknowingly lost property due to illegal sales by family members or claims to the land made by other families with recently discovered titles. The differential impact of these irregular land sale activities lies in the extent to which individuals are able to engage in a legal battle, if necessary, or simply whether they have another place to live.

Recognizing that the rapid growth of real estate activity in the archipelago has contributed to these land conflicts, and in attempts to establish a balanced framework for development, the Sustainable Development Program for the Bocas del Toro Province called for the elaboration of a Land Use Plan for the archipelago. A first draft of this plan was put together by The Nature Conservancy (TNC) in 2008, and was subsequently re-contracted out to satisfy political interests. The preparation of a final version was currently underway at the time of this writing. However, in practice, the effectiveness of such a plan is hindered by the previously described dynamics, ineffective and complex legislation, corruption, and different cultural perspectives and experiences with the meaning of property ownership. This last point is clearly illustrated by the fact that foreigners generally purchase land abroad either as a primary, second, or investment home, which they perceive within the conceptual framework of private property as their geographically limited space within which they can freely partake of any activity, including limiting or prohibiting use of this land by anyone else. On the other hand, the Ngöbe, historically a nomadic people, currently experience land as a more communal asset (Gordon 1982). From their perspective, land is valued for its ability to produce and provide a home (A. Kick, Personal Communication 11 September 2009), and represents a source of subsistence to its inhabitants. Afro-Caribbean and other Panamanians, albeit not as intricately dependent on the land for subsistence, also use land for activities such as agriculture

and cattle ranching. However, they rarely live on these lands, as they prefer to keep their main residence in the urban areas of Bocas Town or in other parts of the country. Therefore, although losing land to speculation, theft, or corruption can represent a significant economic shock, particularly given current inflated land values, it does not usually represent a life-threatening situation for this group.

The complexity of these conflicts suggests that a quick fix is not readily available. For instance, since 2006, three laws have been passed in attempts to regularize land ownership in the archipelago. The first one, Law 2 of 2006[25], proposed the creation of long-term concessions of coastal and insular land for the development of tourism projects. This law raised concerns over the unequal treatment of smallholders, and land theft by the government, as it would essentially offer concessions to the highest bidder for tourism development projects, in disregard of other, perhaps more sustainable uses. No concessions were issued under this law, as the process of regularizing land titles was in total chaos. A short lived second law, Law 23 of 2009[26], was passed in an attempt to resolve the land tenure problem by issuing land titles at a low cost to all those who could prove they had made productive use of their lands for a minimum of five years. This law, although apparently beneficial to poor

[25] Ley No. 2, 7 January 2006, regulates tourist concessions and rights over insular territories for the promotion of tourist activities (Gaceta Oficial No. 25,461, 11 January 2006)
[26] Ley No. 23, 21 April 2009, declares insular territories as special development areas, regulates land tenure in coastal zones and dictates (Gaceta Oficial No. 26267, 23 April 2009)

land owners, was overturned by Law 80 of 2009[27], with claims that it would lead to significant cheating on the part of large businesses and corporations interested in investing in these high-value coastal areas. Law 80, currently in place, was then created with similar goals of assigning land titles. This law, however, only offers a free title for the first five hectares of land, and assigns market values to the remainder of the property. Critics of this law claim it excludes poor landowners (primarily indigenous communities) by setting prices that are out of their reach. Equally, foreign residents who purchased untitled land prior to the passing of this law will face with significant costs to obtain legal property titles. All groups could potentially lose their land if they choose not to obtain the title. The lack of legal certainty and transparency, added to the global economic crisis, slowed down the rate at which the real estate industry was growing. How these complex processes will play out for the future of locals and foreigners residing in the archipelago still remains to be seen. However, it is clear that outcomes will be experienced differently by each ethnic and socio-economic group.

***New economies for a new Bocas del Toro?***

Since the early 1990s, foreign investors have taken advantage of the relatively low property prices and political inexperience and isolation of Bocas del Toro to establish businesses that cater to international tourists and foreign residents (Guerrón-Montero

[27] Ley No. 80, 31 December 2009, recognizes rights of possessions and regulates titling in coastal and insular areas in order to guarantee their optimal use (Gaceta Oficial No. 26438-B, 31 December 2009)

2006). In effect, this has resulted in the displacement of local enterprise, and more importantly in the creation of dependence on foreigners for employment.

An analysis of changes in economic activities described by interview respondents reveals it is a complex process in that it is difficult to distinguish between localized economic impacts of the real estate and foreign resident boom and what is simply part of a broader national and international neoliberal transition occurring Latin American economies (Gwynne and Kay 2004, Harvey 2007). Panama's economy, in contrast with most developing nations, has always been more dependent on the provision of services and commerce, than on primary production (EIU 2008). Similarly, although the Bocas del Toro province has traditionally relied heavily on agricultural exports, other economic activities, including the provision of services, commerce, construction, and transportation, have always existed (Briceño 2004). The service industry in the archipelago is currently more present than ever, with a growth in hotels, restaurants, and real estate and construction companies (AP/UM 2008a). For instance, between 1990 and 2000, the percentage of individuals involved in restaurant or hotel activities increased from 3 to 15%, and in construction from 3 to 17% (INEC 1990, 2000). Similarly, the draft Land Use Plan identified three main sectors as drivers of economic growth in the area: foreign resident activities in the district, tourism growth, and commercial exchange with the rest of the province and the country (TNC 2008). Given an estimated GDP of $23.6 million for the district in

2006, projected and observed impact on the demand for goods and services as a result of foreign residents in the area should have a significant influence on the economy and employment rates in the coming years (TNC 2008).

However, a closer look at the perceived economic boom reveals that it is, in fact, countered by four emerging concerns. First, there is a reduction of economic opportunities and access to land for locals through increased property values and production costs, making it much more expensive to utilize the land productively. Second, as discussed by Kull et al. (2007) in a similar case of international migration and tourism in Costa Rica, the combination of growth of the tourism industry, the decline of available natural resources, and increased employment opportunities make it much more attractive for locals to try to work in tourism-related activities, as opposed to traditional participation in the primary sector. Third, most of the new businesses and employment opportunities in the area are foreign owned, contributing to the increase in wage labor that offers little, if any, long-term opportunities for advancement and economic growth within the local population. And, fourth, given the popularity of the archipelago as an investment opportunity, a closer look raises questions related to the local supply of goods and services needed for new investments, the local capacity to purchase existing goods and services at foreigner-led inflated prices, and the provision of sufficient and effective governmental support

in matters related to health, education, and general oversight of development activities.

***Reflections on environmental change***

As reflected in the interview responses, personal observations, and in existent research, environmental changes in the archipelago are not yet drastic. However, the disorganized growth and promotion of the archipelago as a tourist, lifestyle, and investment destination pose significant threats to mangroves, fisheries and, the insular ecosystem in general. As indicated during interviews, one significant concern is whether the government is effectively monitoring foreign investment in the archipelago and improving its institutional response to growth by, at a minimum, providing the adequate infrastructure to support changing demographics. Indeed, a general understanding exists throughout the local population that the current ways in which sewage and solid waste are managed are not sustainable in the long run, based on the fact that heavy rains consistently lead to sewage overflows, garbage collection is not regularly available in all locations of the archipelago, and the municipal dump has had a history of overflowing into public roads and marine ecosystems, creating significant human health and environmental problems (AP/UM 2008b).

Despite awareness of issues of immediate concern such as sewage and solid waste, other impacts of development on natural ecosystems and habitat are difficult to assess

due to the scarcity of baseline. In the case of fishery resources (conch, lobster, and local fish, such as Wahoo, snapper, kingfish, Spanish mackerel, and tuna), a long tradition of artisanal and subsistence fishing, as evidenced in interview responses, demonstrates that they are also a matter for concern. Most respondents reported that fishermen have to go farther out and dive in deeper waters to obtain their products. Other threats mentioned during interviews and highlighted in the local monthly periodical, *The Bocas Breeze*, include cutting mangroves for construction and/or coal-making, and sand extraction. These activities pose threats to coastal areas as they destroy intertidal habitats and fishery nurseries, and may lead to coastal erosion (AP/UM 2008b).

The difficulty of eliciting perceptions of environmental change is due, in part, to a cultural lack of concern for issues that do not immediately affect them, or that are geographically removed from their sphere of daily activity (Anonymous. Personal Communication 9 February 2009). In this sense, the way the environment was talked about or perceived during interviews perhaps reveals more about a generally disconnected sentiment towards natural resources, and raises questions about how perceptions were formed. For instance, indigenous groups, especially those still engaged in fishing and other primary sector activities, are usually exposed to the discourse of environmental non-government organizations and sustainable development projects. As such, the issues raised by indigenous respondents could be

understood as the articulation of personal concerns for the sustainability of their main source of income, with conservation discourse from outsiders. On the other hand, locals whose relationship with the environment is less immediate, in an economic sense, did not demonstrate noteworthy concern for environmental transformations.

***Differences in perceptions of change between Afro-Caribbean, Indigenous, and "other" Panamanians of Latino, Chinese, and European descent***

The indigenous respondents exhibited the strongest sense of cultural identity as *indios* or *paisanos*, as they are called throughout the archipelago. Whether or not they engaged in traditional cultural practices in their daily activities, they were the only group to recognize themselves first as Ngöbe or Buglé, and then as Panamanian *bocatoreños.* In terms of economic indicators, they are the most marginalized group in the country, with poverty in all indigenous areas of Panama reaching 96% in 2008 (INEC 2008). As such, their perceptions of change reflected specific indigenous concerns over discrimination, rights to land, loss of culture and language, and efforts to improve social and economic conditions for the community as a whole (Bourgois 1994, Briceño 2004, Araúz 2007). The indigenous respondents predominantly felt excluded from the economic potential of foreign investment, as they tend live on the margins (geographic, social, and economic) of most developments occurring in the archipelago. Moreover, due to language barriers, cultural traditions, lower education levels, explicit or unintended racism, or social structures, they did not integrate as well with the foreigners, and exhibited suspicion and apprehension about their

intentions. Although they concurred with the other ethnic groups about the increase in employment opportunities and circulation of money in the region, they usually had access to the least desirable jobs such as clearing overgrown properties and janitors in restaurants and hotels. Additionally, these jobs were historically and currently of a part-time or temporary nature, and, perhaps due to lack of education, most indigenous respondents recognized that the majority of *paisanos* do not know how to handle the large sums of money they received from land sales (Bourgois 1994, CEPAL 2005). Similarly, they tended to be the most vulnerable to issues of land tenure through evictions, irregular sales, and illegal relocations, in part as a reflection of their reliance on natural resources for subsistence and as an essential component of their world view (Gordon 1982, CEPAL 2005, Díaz 2008). The implications of these expressed concerns concur with national reports on the condition of indigenous groups in Panama in that these communities tend to engage in activities that offer scarce employment stability. Additionally, the processes of acculturation resulting from their insertion in the market economy have had a significant effect on cultural patterns and traditional activities (CEPAL 2005). As a result, the apparent opportunities offered by the tourism and residential growth offer few long-term advantages to the personal and social development of the indigenous population of the Bocas del Toro archipelago.

Afro-Caribbean and other Panamanians, on the other hand, have broader family networks in other parts of the country or in the United States, sources of income that go beyond manual labor and land sales, and family structures that date from the beginnings of the banana company in the archipelago. This puts them in a privileged position from which they can derive benefits from the real estate boom. As such, they mostly perceived the changes to be positive. Additionally, their ability to speak English, their urban flair, and their geographic proximity to Bocas Town and surrounding areas enabled them to have closer and more intimate interactions with foreigners. In particular, Afro-Caribbean descendents enjoy the fact that their culture is a dominant feature of attraction to those tourists and foreign residents who have come to the archipelago in search of cultural diversity and richness (Guerrón-Montero 2006).

Differences in perception and understanding of the current situation are not only a question of ethnic and cultural background and or/social capital, but also depend on geographic location within the archipelago. Generally, Afro-Caribbeans live in the Bocas del Toro and Bastimentos subdivisions, whereas the majority of the indigenous population lives in separate communities further away from Bocas Town. Overall, however, the presence of imported foreign values and expectations clashes with traditional ways of life, as well as influences behavior, particularly of younger generations (Gosnell and Abrams 2009). Therefore, in this context, social impacts

include the reinforcement of existing social and class systems by privileging English-speaking Afro-Caribbeans over indigenous groups in various aspects of day-to-day life. In doing so, the long history of internal racism is perpetuated, while the Ngöbe and Buglé Indians continue to experience marginalization in Bocas society (Bourgois 1994, Guerrón-Montero 2006).

## VII. CONCLUSION

The unique social and cultural character of the population of the Bocas del Toro Archipelago is a result of the many socioeconomic processes that have affected the area since its discovery by the Spanish in the 16th Century. The recent popularity of the archipelago as a lifestyle migration destination is one such process with unique implications for the local human and natural landscape, in the context of the political and economic integration of Panama, and in particular Bocas del Toro, into the global economy. Given the breadth and complexity of the concerns, the diversity of the population, and the fact that most *bocatoreños* depend directly or indirectly on the provision of services to tourists and foreign residents, this chapter demonstrates that locals are faced with significant challenges in adjusting to the new economy, in resolving emerging land tenure conflicts, and in dealing with rapidly changing social

[31] Political boundaries and degree of foreign lifestyle migrant influence are also used to designate the study area for chapters 2 and 3 of this dissertation.

and cultural attitudes. Additionally, this chapter highlights the importance of recognizing the links between landscape and culture in order to better understand and prepare for impending changes. In this context, the promotion of real estate and foreign investment as a panacea for developing coastal and insular economies may in fact be debatable, as revealed through an increased dependence on foreigners, unequal distribution of wealth, and displacement of local enterprise.

## SOURCES CITED


Aceto, Michael. 2001. The linguistic matrix of Panama with special focus on Anglophone creoles. In: The English Creole of Panama. Publication No. 2 from the Quaderni del Centro Interdipartimentale di Studi sull'America Indigena/CISAI dell'Università di Sienna, 7-21. Siena, C.I.S.A.I.

Araúz, Celestino. 2007. Bocas del Toro y el Caribe Occidental: Periferia y marginalidad siglos XVI - XIX. Panamá, Editorial Mariano Arosemena.

Arden & Price Consulting/University of Miami (AP/UM). 2008a. Informe de Avances No. 2: Plan de Manejo Costero de la Provincia de Bocas del Toro. Programa Multifase de Desarrollo Sostenible de Bocas del Toro. Panamá.

Arden & Price Consulting/University of Miami (AP/UM). 2008b. Perfiles de la Zona Marino-Costera de Bocas del Toro. Programa Multifase de Desarrollo Sostenible de Bocas del Toro. Panamá.

Bebbington, Anthony. 2001. Globalized Andes? Livelihoods, landscapes and development. *Ecumene*. 8(4): 414-436.

Bebbington, Anthony. 2004. Livelihoods Transitions, Place Transformations: Grounding globalization and modernity. In: R. N. Gwynne and Kay (Eds.). Latin America Transformed: Globalization and Modernity (2nd Ed.). London, Hodder Arnold.

Bernard, H. Russell. 2006. Research Methods in Anthropology: Qualitative and quantitative approaches (4th Ed.). Oxford, Altamira Press.

Boucquey, Noelle, Lisa M. Campbell, Gabriel Cumming, Zoe A. Meletis, Carla Norwood, Joshua Stoll. 2010. Interpreting Amenities, Envisioning the Future: Common ground and conflict in North Carolina's rural coastal communities. *GeoJournal.* doi: 10.1007/s10708-010-9387-1.

Bourgois, Philippe. 1994. Banano, Etnia y Lucha Social en Centro América. San José, Costa Rica, Editorial Departamento Ecuménico de Investigaciones (DEI).

Brass, Kevin. 2007. In Panama, a Home in the Mountains. *New York Times*. 2 December 2007.

Briceño, Amilcar E. 2004. Historia y Sociedad de Bocas del Toro y de la Comarca Ngöbe-Buglé: Del Siglo XV al Siglo XXI. Panamá, Editorial Universitaria Carlos Manuel Gasteazoro.

Bryant, Raymond L. and Sinead Bailey. 1997. Third World Political Ecology: An introduction. New York, Routledge.

Bury, Jeffrey. 2005. Mining Mountains: Neoliberalism, land tenure, livelihoods, and the new Peruvian mining industry in Cajamarca. *Environment and Planning A*. 37: 221-239.

Cadieux, Kirsten, and Patrick Hurley. 2009. Amenity Migration, Exurbia, and Emerging Rural Landscapes: Global natural amenity as place and as process. *GeoJournal*. doi: 10.1007/s10708-009-9335-0.

Centro de Incidencia Ambiental (CIAM). 2008. Anulación EIA Red Frog [Press Release]. Retrieved from: http://www.diariocritico.com/panama/2008/Diciembre/noticias/115391/declaro-ilegal-la-construccion-de-un-proyecto-en-red-frog-beach.html

Comisión Económica para América Latina y el Caribe (CEPAL). 2005. Los Pueblos Indígenas de Panamá: Diagnóstico sociodemográfico a partir del censo del 2000. Santiago, Chile.

Comisión Económica para América Latina y el Caribe (CEPAL). 2009. Panamá, Evolución Económica Durante 2008 y Perspectivas para 2009. México, D.F.

Cortés, Jorge, Ricardo Soto, y Carlos Jiménez. 1994. Efectos Ecológicos del Terremoto de Limón. *Revista Geológica de América Central*. Volúmen Especial: El Terremoto de Limón, 22 de abril de 1991.

Decreto de Ley No. 3, 22 February 2008. Que crea el Servicio Nacional de Migración, la Carrera Migratoria y dicta otras disposiciones. Gaceta Oficial No. 25,896, 26 February 2008. Consejo de Gabinete, República de Panamá.

Decreto de Ley No. 4, 2 October 1998. Por medio del cual se modifica la ley No. 8 de 1994, promueve las actividades turísticas en Panamá. Gaceta Oficial No. 23,480 12 February 1998. Consejo de Gabinete, República de Panamá.

Decreto de Ley No. 4, 27 February 2008. Que crea la Autoridad de Turismo de Panamá y dicta otras disposiciones. Gaceta Oficial No. Gaceta Oficial No. 25,989, 29 February 2008. Consejo de Gabinete, República de Panamá.

Decreto Ejecutivo No. 104, 4 September 1974. Adiciona tres numerales al artículo 1 del Decreto No. 23 de 30 de Enero de 1967 (por el cual se dictan medidas de carácter urgente para la protección y conservación de la fauna silvestre. Gaceta oficial No. 17703,18 October 1974. Ministerio de Desarrollo Agropecuario, República de Panamá.

Díaz, Ovidio E. 2008. Los Derechos Posesorios, los Bienes del Estado, la Propiedad Privada: Un análisis jurídico y económico. Panamá.

Escobar, Arturo.1995. Encountering Development: The making and unmaking of the Third World. Princeton, Princeton University Press.

Instituto Nacional de Estadística y Censo (INEC). 1990, 2000, 2010. Censos Nacionales de Población y Vivienda. Contraloría General de la República de Panamá.

Economist Intelligence Unit (EIU). 2008. Country View: Outlook for 2008-2009. Economist Intelligence Unit Views Wire, 10 March 2008.

Gordon, Burton L. 1982. A Panama Forest and Shore: Natural history and Amerindian culture in Bocas del Toro. Pacific Grove, The Boswood Press.

Gosnell, Hannah and Jesse Abrams. 2009. Amenity Migration: Diverse conceptualizations of drivers, socioeconomic dimensions, and emerging challenges. *GeoJournal*. Doi: 10.1007/s10708-009-9295-4

Guerrón-Montero, Carla. 2006. Tourism and Afro-Antillean Identity in Panama. *Journal of Tourism and Cultural Change*. 4(2): 65-84.

Guzmán, Héctor M. 2003. Caribbean Coral Reefs of Panama: present status and future perspectives. *Latin American Coral Reefs*: 241-274.

Gwynne, Robert N. and Cristóbal Kay (Eds.). 2004. Latin America Transformed: Globalization and Modernity (2nd Ed.). London, Edward Arnold.

Harvey, David. 2007. A Brief History of Neoliberalism. Oxford, Oxford University Press.

Hecht, Susanna B. and Sassan S. Saatchi. 2007. Globalization and Forest Resurgence: Changes in forest cover in El Salvador. *BioScience*, 57(8): 663-672.

Heckadon-Moreno, Stanley (Ed.) 1993. Agenda Ecológica y Social para Bocas del Toro: Acta de los Seminarios Talleres. Panama, Smithsonian Tropical Research Institute.

King, Russell and John Connell (Eds.). 1999. Small Worlds, Global Lives: Islands and Migration. London, Pinter.

Koster, Richard. 2009. Bocas del Toro: Tierra de Nadie. *La Estrella de Panamá.* 7 September.

Kull, Christian A., Camellia K. Ibrahim, Thomas C. Meredith. 2007. Tropical Forest Transitions and Globalization: Neo-Liberalism, Migration, Tourism, and International Conservation Agendas. *Society and Natural Resources*. 20(8): 723-737.

Ley No. 2, 7 January 2006. Que regula las concesiones para la inversión turística y la enajenación de territorio insular para fines de su aprovechamiento turístico y dicta otras disposiciones. Gaceta Oficial No. 25,461, 11 January 2006. Asamblea Nacional, República de Panamá.

Ley No. 5, 11 January 2007. Que agiliza el proceso de apertura de empresas y establece otras disposiciones. Gaceta Oficial No. 25,709, 12 January 2007. Asamblea Nacional, República de Panamá.

Ley No. 8, 14 June 1994. Por la cual se promueven las actividades turísticas en la República de Panamá. Gaceta Oficial No. 22,558, 15 June 1994. Asamblea Legislativa, República de Panamá.

Ley No. 10, 7 March 1997. Por la cual se crea la Comarca Ngöbe-Buglé y se toman otras disposiciones. Gaceta Oficial No. 23,242, 11 March 1997. Asamblea Legislativa, República de Panamá.

Ley No. 23, 21 April 2009. Que declara el territorio insular área de desarrollo especial, regula la adjudicación en las zonas costeras y dicta la legislación para el aprovechamiento de estos mediante un proceso de regularización y titulación masiva de derechos posesorios. Gaceta Oficial No. 26,267, 23 April 2009. Asamblea Nacional, República de Panamá.

Ley No. 54, 22 July 1998. Por la cual se dictan medidas para la estabilidad jurídica de las inversiones. Gaceta Oficial No. 23,593, 24 July 1998). Asamblea Legislativa, República de Panamá.

Ley No. 80, 31 December 2009. Que reconoce derechos posesorios y regula la titulación en las zonas costeras y el territorio insular con el fin de garantizar su aprovechamiento óptimo y dicta otras disposiciones. Gaceta Oficial No. 26,438-B, 31 December 2009. Asamblea Nacional, República de Panamá.

Marín Araya, Giselle. 2004. La Población de Bocas del Toro y la Comarca Ngöbe-Buglé hasta Inicios del Siglo XIX. *Anuario de Estudios Centroamericanos*, Universidad de Costa Rica, 30(1-2): 119-162.

McCarthy, James. 2008. Rural Geography: Globalizing the countryside. *Progress in Human Geography*. 32(1): 129-137.

Meletis, Zoe A. and Lisa M. Campbell. 2009. Benevolent and Benign? Using Environmental Justice to Investigate Waste-related Impacts of Ecotourism in Destination Communities. *Antipode*. 41(4): 741-780.

Ministerio de Economía y Finanzas (MEF). 2010. Informe Económico y Social Julio 2010. Dirección de Análisis Económico y Social. República de Panamá.

Murray, Colin. 2001. Livelihoods Research: Some conceptual and methodological issues. Background Paper 5: Chronic Poverty Research Center. University of Manchester.

Nelson, Peter B. 1997. Migration, Sources of Income and Community Change in the Nonmetropolitan Northwest. *The Professional Geographer*. 49(4): 418-430.

Neumann, Roderick. 1998. Imposing wilderness: struggles over livelihood and nature preservation in Africa. Berkeley, University of California Press.

Nygren, A. 2000. Development discourses and peasant-forest relations: Natural resource utilization as social process. *Development and Change*. 31(1): 11-34.

Peet, R. and M. Watts. 2004. Liberation Ecologies: Environment, development, social movements (2nd Ed). New York, Routledge.

Programa Ambiental Regional para Centroamérica/ Componente de Areas Protegidas y Mercadeo Ambiental (PROARCA/APM). 2005. Plan de Conservación Amistad – Cahuita – Río Cañas.

Programa Ambiental Regional para Centroamérica/ Componente de Areas Protegidas y Mercadeo Ambiental y Alianza para la Conservación y Desarrollo (PROARCA/APM-ACD). 2006. Caracterización Socioeconómica y Análisis de Situación del Distrito de Bocas del Toro.

Sheridan, Laura. 2007. The World's Top Retirement Havens in 2007. *International Living Magazine*. Retrieved Online May 2, 2008, from http://www.internationalliving.com/internal_components/further_resources/09_01_07_retirement.

Soto, Ricardo, H. Guzmán, Z. Pinzón, J. Moreno, C. Gamboa H., M. Montoya, and R. Vargas (Eds.). 1998. Evaluación Ecológica Rápida del Parque Nacional Marino Isla Bastimentos y áreas adyacentes, provincia de Bocas del Toro. Tomo 3: Recursos costero-marinos. Panamá, Asociación Nacional para la Conservación de la Naturaleza (ANCON).

Stephens, Clyde. 1997. History of Hospital Point: Pioneer Medical Center 1899-1920, Province of Bocas del Toro, Panama. Tavares, FL.

Stephens, Clyde. 2008. Outline of History of the Province of Bocas del Toro, Panama. Eustis, FL, SPS Publications.

The Nature Conservancy (TNC). 2008. Propuesta. Plan de Ordenamiento Territorial: Archipiélago de Bocas del Toro. Panamá.

Walker, Peter and Louise Fortmann. 2003. Whose Landscape? A political ecology of the 'exurban' Sierra. *Cultural Geographies*. 10: 469-491.

Young, Emily. 1999. Balancing Conservation with Development in Small-Scale Fisheries: Is ecotourism and empty promise? *Human Ecology*. 27(4): 581-620.

# Chapter 4.

# LAND COVER CHANGE IN THE BOCAS DEL TORO ARCHIPELAGO: IS SOCIAL AND DEMOGRAPHIC CHANGE BOON OR BANE TO THE ENVIRONMENT?

## I. INTRODUCTION

The province of Bocas del Toro in Northwestern Panama has a long history of anthropogenic activity, particularly since the United Fruit Company (UFC) began operations in the late 1800s. Throughout the 20th century the UFC established extensive banana plantations throughout the mainland areas of the province, as well as occasional plantations of cacao and abaca or Manila hemp. The impacts of these operations were not limited to environmental modifications of forest landscapes for production. They also included changes associated with demographic processes such as importing laborers from the West Indies to work on the plantations and administrators from North America to run the UFC operations in the region. These, in turn, required space and resources for the establishment of services such as schools, hospitals, sanitation facilities, and homes. Recent anthropogenic activities in the province include hydroelectric projects and logging.

The archipelagic sector of the Bocas del Toro Province is less vulnerable to industrial scale activities, but has also been subject to change from diverse colonization processes occurring in the islands over the past five centuries (Marín Araya 2004,

Araúz 2007). With the exception of brief periods of commercial lobster diving, and localized logging, the use of natural resources within the archipelago has primarily been for subsistence (Heckadon-Moreno 1993, PROARCA/APM-ACD 2006). These subsistence activities are now being replaced by employment in the tourism and service sectors driven by an increase of foreign residents. As a result, new patterns of land use are emerging with related consequences for land cover (PROARCA/APM-ACD 2006, AP/UM 2008).

In this chapter I aim to explore how these recent demographic, social, and environmental events have affected land cover change between 1986, prior to the tourist and residential boom, and 2008. Research findings serve to critically evaluate the existing discourse about the negative effect of development in the region, and also suggest that there is an overall resurgence of forest cover in the archipelago. I begin the chapter with an exploration of environmental change that is based on the assumption that nature cannot be studied independently from human activities, and vice versa. In particular, it highlights how this chapter contributes to the literature on population-environment research, within the discipline of geography, by integrating fine-scale social data with the broader environmental dynamics captured through remote sensing techniques in the Bocas del Toro Archipelago. I then characterize environmental change in the Bocas del Toro Archipelago by describing the local marine and terrestrial ecosystems, the ecosystem services provided by these

environments, and the main anthropogenic threats to their health. This is followed by a case study of land cover change. The chapter ends with a discussion of the nature, distribution, and direction of these changes in land cover in the context of ongoing social processes (e.g., Kull, Ibrahim and Meredith 2007; Hecht and Saatchi 2007), and an exploration of the causes of a forest resurgence in the archipelago.

## II. APPROACHES TO STUDYING ENVIRONMENTAL CHANGE

Environmental change is a global process that can be studied at many scales, and is informed by the tools and frameworks of several disciplines (Gibson, Ostrom, and Ahn 2000; Moran 2010). For instance, current studies of the causes and effects of global climate change include policy-relevant themes such as fisheries collapse, soil depletion, changes in nutrient and water cycles, deforestation, and desertification (Moran 2010). The common denominator of all these studies is the tendency to explore how environmental changes affect and are, in turn, affected by human communities. In recognition of the importance of this relationship between humans and the natural environment, I would like to address the following questions: How do we define and understand environmental change? And how do we study it?

***Understanding environmental change***

Environmental change is inextricably linked to the human condition (Castree 2001, MEA 2005 and 2006, Moran 2010). In terms of policy, the emergence of environmental concerns within the larger human development project can be traced to the 1972 United Nation's Conference on the Human Environment, which was convened in response to pollution from industrialization in developed nations. The concept of sustainable development first emerged at this conference, recognizing that the careful use of natural resources was necessary in order to sustain economic growth. The 1987 Brundtland Report was the first of its type to include a comprehensive list of threats to the world's natural resources, elevating environmental concerns to the top of the development agenda (Rist 1997). The concept eventually reached its peak as the main topic addressed at the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in 1992. Also known as the 'Rio Earth Summit', UNCED grounded this newly discovered concern for environmental resources in international agreements such as Agenda 21, the UN Framework Convention on Climate Change (UNFCCC), and the Convention on Biological Diversity (CBD). In these early stages of the conservation movement, however, the dominant discourse perceived rural subsistence and livelihood activities, typically carried out by poor communities in the global south, as a leading cause of environmental degradation. While the hegemony of this discourse is increasingly questioned, the complex relationship between nature and society remains an essential

component of studies of environmental change. In this context, the link between environment and development sets the stage for politicizing and understanding environmental change as a human phenomenon, of which people become both agents and victims. It also elevates the need for further research on causal explanations of change (Leach and Mearns 1996).

The study of environmental change, within a social context, falls within the human-environment research branch of geography. This field has historically explored interactions between humans and the environment and debated the relative weights of each in defining outcomes, particularly questioning the idea of environmental determinism (Robbins 2004). My research responds to Castree's (2001) call to bring the social back into the concept of nature, where he sees nature as "defined, delimited, and even physically reconstituted by the different societies, often in order to serve specific and usually dominant, social interests" (p. 3). In contrast with analyses that isolate social processes from environmental phenomena, in this chapter I follow Lambin et al.'s (2001) critical approach to the causes of land-cover change to explore local changes in vegetation cover as a result of local responses to social, political, and economic events. Preliminary research initially identified a popular perception of lifestyle migration and associated new forms of development as environmentally destructive. However, my research raises questions about this prevailing discourse. Informed by Leach and Mearns' (1996) work on the

implications of received wisdom in environmental policy making in Africa, I suggest that this discourse stems from powerful perceptions of widespread environmental loss caused by the disorganized model of growth and development of residential and tourism activities currently underway in Bocas del Toro (I.L. Pers. Comm. 2008-2010, A.G. Pers. Comm. 9 February 2009, G.J. Pers. Comm. 2009-2010). This discourse is primarily put forth by media (e.g. Fundación Albatross Media 2007), environmental non-government organizations active in the area (e.g., The Nature Conservancy), and local organizations sponsored by bilateral development projects (PROARCA/APM 2005, PROARCA/APM-ACD 2006), and is based on observed threats, rapid ecological evaluations, and time and place specific studies on the status of marine and terrestrial ecosystems (e.g. PROARCA/APM-ACD 2006, AP/UM 2008, TNC 2008). I recognize that threats posed by chaotic development are very real and have differential effects on the local population sub-groups (i.e., Indigenous, Afro-Caribbean, Other – *Bocatoreño* of Latin, European, or Chinese descent). However, my research also reveals that generalized perceptions of change in the archipelago are often vague or overstated. Therefore, in this paper I argue that a critical approach to human-environment relations helps to shape a more nuanced understanding of the causes, locations, and impacts of environmental change.

The increase in forest cover observed in the archipelago suggests that one of the outcomes of lifestyle migration is a resurgence of tropical forests. Forest resurgence,

in a general sense, relates to observed changes in forest cover over time associated with human activities, and refers to the reversal of deforestation trends as a result of complex process linked to development and globalization (Mather 1992; Hecht and Saatchi 2007; Rudel, Schneider, and Uriarte 2010). Given that a forest resurgence implies the presence of historical or current anthropogenic influences, Hecht (2010) suggests that these processes are often underappreciated due to the conservationists' emphasis on preventing deforestation of old growth or mature forests, and to the complexities associated with anthropogenic landscapes. Hecht (2010) also points out that by acknowledging the importance of both natural and anthropogenically modified forests in land cover assessments, it is possible to identify site-specific outcomes that reflect these resurgence trends. Recent studies have demonstrated the localized resurgence of forests in areas of the developing world such as El Salvador and Costa Rica, due to migration, political conflict, and violence (see Hecht and Saatchi 2007, Kull et al. 2007). These factors are, partially, results of Latin America's forced adoption of a neoliberal agenda, characterized by opening national economies through tariff reductions, retraction of the government's concern for social welfare, and an emphasis on the role of free markets in determining regional development paths (Harvey 2005). These studies demonstrate that the nature-society dynamic present in land cover change can adopt many forms and responds to the complex processes of globalization.

Further explorations on the causal linkages between new forms of migration and land cover change take into account the role of changing land uses, values, and perceptions, and the inherent institutional and economic problems associated with assigning such values (Barbier, Burgess, and Grainger 2010). It is important to point out that these outcomes, however, do not guarantee a corresponding increase of biological diversity; monoculture plantations of non-native species also increase forest cover (Rudel et al. 2005). By discussing the causes of forest resurgence in this case study, I hope to highlight the importance of taking into account the broader socioeconomic processes that lead to these landscape level changes in cover.

***Studying environmental change***

Human-environment research, as a discipline, provides both the critical perspective and the research methods to conduct a study of environmental change, and responds to the need for finer spatial and temporal scales of analysis. In this case study, qualitative research on local social processes was coupled with a quantitative analysis of land cover change to generate a problem-driven, exploratory, and multidisciplinary narrative of environmental change. The quantitative component of this chapter uses remote sensing and geographic information system (GIS) tools to capture vegetative cover of the archipelago in three different time periods and subsequently compares them to portray changes over time. These techniques represent modern day cartography as they visually depict the different categories of land cover in a given

location, using GIS to generate coverage maps and simultaneously produce a georeferenced spatial database for subsequent quantitative analyses. As Crews and Walsh (2009) indicate, remote sensing tools are used to infer "social processes as manifested by physical phenomenon observable on the landscape via spectral measurements" (p. 438). Land cover, as an indicator of change, can then be linked to various human uses and influences through the use of causal analysis methods to explain change (Walters and Vayda 2009). None of these influences individually, however, lead to specific biophysical outcomes, illustrating the challenge of using remote sensing techniques to address social science questions (Crews and Walsh 2009). In this particular case, the challenge lies in identifying changes that are specifically related to the increase in foreigner residents.

## III. CHARACTERIZING LOCAL ENVIRONMENTAL CHANGE

### *Ecosystems of the Bocas del Toro Archipelago*

The Bocas del Toro Archipelago is a tectonically formed geographic feature located in the Northwest corner of the Republic of Panama, characterized by a cluster of islands relatively close to the mainland that includes both terrestrial and marine ecosystems (See Figure 4.1). The archipelago is composed of 6 main islands (Colón, Bastimentos, Solarte, Cristóbal, Cayo de Agua, and Popa), and several-dozen mangrove cays, arranged around two protected bodies of water, the Chiriquí Lagoon

and the Almirante Bay. Politically, the archipelago is included within the Bocas del Toro District which, in turn, is subdivided into five *corregimientos* or subdivisions: Bocas del Toro, Bastimentos, Tierra Oscura, Punta Laurel, and Cauchero. The subdivision of Cauchero and the mainland portion of Tierra Oscura extend mostly inland and are less susceptible to the effects of foreign residents, and were therefore excluded from the study area[31].

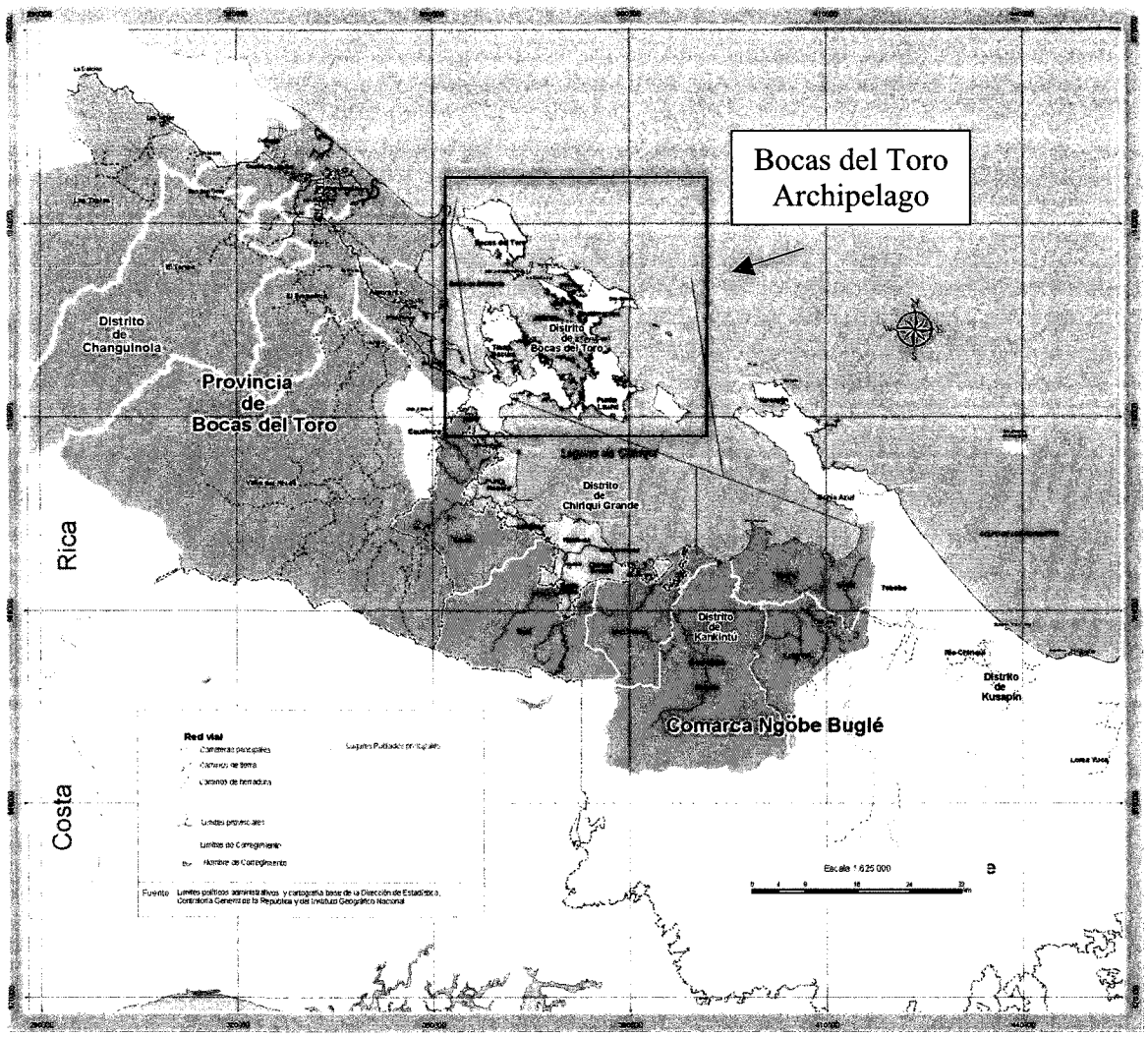



**Figure 4.1: Map of Bocas del Toro Archipelago. Source: AP/UM 2008.**

In terms of terrestrial ecosystems, the highest elevation on the islands is approximately 80 meters above sea level, formed by layers of sediment established over coral reef fossils (Heckadon-Moreno 1993, Valdespino and Santamaría 1997). Due to these low elevations, rivers and creeks that originate on these islands tend to

be short with low volumes and rates of flow (ANAM 2001, PROARCA/APM-ACD 2006). The vegetation on the islands is typical of lowland coastal areas, of which approximately 90% is represented by tropical rain forest evergreen species (Soto et al. 1998). On the islands, the canopy ranges between 20 and 40 meters above the forest floor, and is dominated by species such as cedro (*Carapa* sp.), cerillo (*Symphonia globulifera*), and laurel (*Cordia allidora*) (Valdespino and Santamaría 1997). These hardwood species are typically used for construction of homes and furniture. The remaining vegetation along the coast and alluvial plains includes flooded forest species such as cativo (*Prioria copaifera*), sangrillo (*Pterocarpus officinalis*), and orey (*Campnosperma panamensis*) (PROARCA/APM-ACD 2006, TNC 2008). Due to the undulating topography of the islands, and high levels of rainfall (over 3000 mm/year), these flooded forest tree species play an important role as sedimentation filters and regulators of freshwater flow into the adjacent marine ecosystems (TNC 2008). Other ecosystem services provided by insular forests are essential habitat for flora and fauna, coastal protection, climate regulation, biomass and nutrient generation, associated biodiversity, tourism and recreation, and the continuity of evolutionary processes (ANAM 2008b).

Marine ecosystems of the archipelago are composed of mangroves, seagrasses, and coral reefs. Mangrove forests of the Bocas del Toro province cover approximately 28 $km^2$, and account for almost half of the total mangrove cover along the Caribbean

coast of Panama (AP/UM 2008, Guzmán et al. 2005, Lovelock et al. 2005). Within the two main bodies of water in the region, the Almirante Bay and the Chiriquí Lagoon, mangroves can be found as riverine forests, as fringe coastal forests on islands and the mainland, as mangrove islands, and along coastal flats adjacent to upland vegetation. The most common species is the red mangrove (*Rhizophora mangle*), although occasional patches of white mangrove (*Laguncularia racemosa*) and black mangrove (*Avicennia germinans*) are also present (Guzmán et al. 2005).

Marine benthic areas adjacent to mangroves are characterized by seagrass beds and coral reefs. Seagrass communities are composed of grasses, macroalgae, epiphytes, and a variety of invertebrates and fishes. The two species of seagrass found in the archipelago, turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*), have an average cover of 32.3% and 7% respectively (AP/UM 2008). These seagrass meadows function as primary producers, sources of food and shelter for highly diverse and economically valuable species such as lobster and conch, control water quality by recycling nutrients, and contribute to the stabilization of sediments (Williams and Heck 2001).

Coral reefs are found in areas surrounding the insular and coastal mainland portions of the Bocas del Toro province. They cover approximately 87 $km^2$, representing the second largest reef area of the Caribbean coast of Panama. They also constitute an

important site of coral biodiversity, containing 87% of the country's diversity. Monitoring of coral reefs within the archipelago has been ongoing since 1997, from which time Guzmán (2003) registered a gradual decline of about 10% of the spatial extent of coral reefs. Guzmán (2003) has suggested that this decline is associated with the growth of tourist activities and sedimentation from poorly managed deforestation practices. However, current estimates of coral cover suggest a slight improvement from 29% in 2002 to 32% in 2007 (AP/UM 2008). Reefs exposed to oceanic conditions located in the northern limits of the archipelago exhibit less live coral cover than those located in protected waters (Guzmán 2003). The most dominant species of coral in the archipelago exhibit a characteristic vertical distribution reaching depths of 20 meters (Guzmán 2003), and include finger coral (*Porites furcata*) in the shallow areas, bordered by thin leaf lettuce coral (*Agaricia tenuifolia*) on the upper slope. Intermediate areas on the slope include brain coral (*Colpophyllia natans*), star coral (*Montastraea franksi*), and massive starlet coral (*Siderastrea sidereal*). Sheet coral (*Agaricia lamarcki*) and staghorn coral (*Acropora palmata*) can be found at lower depths (Guzmán 2003, AP/UM 2008). Globally, coral reefs constitute essential habitat for subsistence-based and economically important commercial fisheries. They also define or maintain coastal structure and represent an important tourist attraction (Birkeland 1997). Despite their ecological and economic importance, at the local level they are currently threatened by direct anthropogenic activities such as physical damage caused by uncontrolled tourist visits, coastal

construction, and sedimentation from land-based activities, as well as the indirect effects of rising sea surface temperatures as a result of global climate change (AP/UM 2008).

### *Ecosystem linkages*

Marine and terrestrial ecosystems interact in important ways, mutually contributing to the maintenance of their particular ecosystem structure, function and processes, and to the stability of the broader landscape (Birkeland 1997, Ellison and Farnsworth 2001, Stoms et al. 2005). The high degree of ecosystem connectivity in insular landscapes, and particularly the openness of marine ecosystems (Carr et al. 2003) suggest that land to sea influences are more significant than sea to land (Stoms et al. 2005), and occur across wide spatial and temporal scales. These influences are determined by the type and extent of anthropogenic activities within the 267 $km^2$ of the terrestrial study area. Specifically, human uses of natural resources within the archipelago include approximately 22.63 $km^2$ of small-scale permanent and temporary agriculture (INEC 2002a), 28 $km^2$ of livestock farms (INEC 2002b), 1.1 $km^2$ of reforestation for timber (INEC 2002c)[32], 1.22 $km^2$ of human communities, 29 $km^2$ of terrestrial zone of the Bastimentos Island National Marine Protected Area

[32] Data for reforestation and agriculture lands is for the district of Bocas del Toro, excluding the corregimiento of Cauchero in order to keep study area consistent in all components of this research. Although it has a coastal strip, I excluded the subdivision of Cauchero from my study area, because most of its population live inland, and therefore have significantly less interaction with foreign residents and associated developments.

(ANAM 2001), and tourism activities distributed throughout the archipelago including water based activities, tours, hotels, and restaurants.

***Anthropogenic threats to the natural environment of Bocas del Toro***

With the exception of protected areas and human communities, the human uses outlined above constitute the main sources of livelihood for the residents of the archipelago (both Panamanian and foreigners). As such, the uncontrolled or unsustainable use of natural resources for these activities inevitably represents a threat to the natural environment and the communities that depend on it. Terrestrial resources are regulated by the National Environmental Authority (ANAM), while marine resources fall under the jurisdiction of the Aquatic Resources Authority (ARAP). The former agency has primary responsibility for controlling and monitoring activities within marine protected areas. However, lack of funding, infrastructure, and personnel significantly hinder the efficacy of both institutions independently, as well their capacity to coordinate efforts to carry out long-term data gathering and monitoring projects. The presence of non-governmental organization (NGO) and bipartisan international cooperation projects in the archipelago has provided significant funding for rapid assessments and evaluations of resources. However, a long-term, consistent, and effective conservation and resource management regime is much needed in the archipelago (AP/UM 2008).

Several reports generated by independent scientists, international development programs, and national government-sponsored regional management plans have identified the following anthropogenic activities as recent threats to the environment: deforestation for logging and residential projects, tourism and coastal development, terrestrial and marine habitat destruction, contamination through inappropriate sewage and solid waste management, lack of environmental information coupled with low environmental awareness, coral mining for use as building materials, and overfishing (ANAM 2001, Guzmán 2003, PROARCA/APM 2005, PROARCA/APM - ACD 2006, AP/UM 2008). However, detailed historical information about land uses and landscape characteristics of the Bocas del Toro Archipelago prior to 1986, the baseline year of this study, is scarce. Historical accounts suggest that major landscape modifications took place in the islands during the golden years of the United Fruit Company, particularly during the first decade of the 20$^{th}$ century, while Colón Island hosted the headquarters of the UFC. Between 1900 and 1906 several large infrastructure projects were completed, including the construction of breakwaters, an integrated sewer system, and the drainage of mangroves for roads in the city of Bocas del Toro on Colón Island. On the opposite side of the same island, small-scale port facilities and a railroad were established to receive bananas from the mainland through a canal that connected Colón with the banana plantations in Changuinola. Additionally, a UFC sponsored hospital was built on Solarte Island to treat both company officials and workers (Briceño 2004).

After the UFC moved its operations to the mainland in 1906, most activities in the archipelago were abandoned. The 1950s and 60s saw the emergence of small-scale agricultural activity when several indigenous communities established themselves on different island throughout the archipelago in search of land and economic opportunity (T.M. Pers. Comm. 17 March 2009). Also, in 1971, General Omar Torrijos' government established a one-time land colonization project to promote agricultural production in the archipelago. Twenty-nine families from the Central Provinces of Panama were each offered 100 hectares, housing, and maintenance for one year in order to establish the so-called Colonia Santeña. After the initial land clearing and plantation process, most families returned to their homes within a few years of beginning the program. The program is currently represented by one family, and the area of Colón Island assigned to this project has since been used for agriculture and cattle (E.D. Pers. Comm. 6 December 2008).

The construction of the road that connected the coastal mainland town of Chiriquí Grande in the Bocas del Toro Province with the rest of the country in 1984 further contributed to agricultural expansion as it opened up new routes for the distribution of agricultural products. It also established a maritime connection with the archipelago, which facilitated the arrival of the first tourists and foreign immigrants. The final portion of that road was built in the year 2000, connecting Chiriquí Grande with the

port of Almirante. The convenience and ease of travel between Almirante and the islands of the archipelago significantly increased tourist traffic and the promotion of the islands as a residential destination, contributing to the eventual boom of foreign investors in the mid 2000s, and parallel decline in agricultural activity on the islands (Briceño 2004).

It is in the context of the expansion of local human communities between 1950 and 1980 that the oldest existing references outline the main threats to the natural resources of the archipelago during the early stages of the arrival of foreign residents in the late 1990s (Heckadon-Moreno 1993 and Valdespino and Santamaría 1997). Valdespino and Santamaría's (1997) rapid ecological evaluation of terrestrial resources of the Bastimentos Island National Marine Park and its buffer zone suggest that main threats to natural resources prior to the foreign presence in the archipelago included deforestation for the expansion of the agricultural frontier and firewood, selective logging for boat and home construction, and the occasional extraction of commercially valuable forest species. The authors also point out that agricultural activities in the area were primarily subsistence-based and relied on slash and burn techniques that forced farmers to abandon lands and cut down trees for the establishment of new productive sites. Based on these current and historical assessments of anthropogenic activities in the archipelago, this context-specific exploration of environmental change provides an excellent ground for the subsequent

discussion about the relationship between recent social processes and the local environment.

# IV. TRENDS IN TERRESTRIAL ENVIRONMENTAL CHANGE IN THE BOCAS DEL TORO ARCHIPELAGO: A LAND COVER CHANGE ANALYSIS

## *Methodological Rationale*

The use of remote sensing data in the study of human-environment relations has a long history in fields such as geography, urban ecology, agriculture, and forestry (Sloan 2010). This type of analysis is particularly attractive because it allows for the observation of landscape change at large scales using satellite imagery. In particular, land cover change studies have historically relied on coupling these large-scale observations with equally broad social science data (e.g., national census data). As outlined in the previous sections, this research aims to both describe and operationalize environmental change in the Bocas del Toro archipelago, since the arrival of foreign residents in the early 1990s. This relatively small geographic scale made it possible to elicit a richer account of both the underlying reasons for change and the implications of such change for local communities. Additionally, in order to conduct the analysis of change over time, I selected three years or points in time based on research objectives and availability of suitable images. The first year (1986) was intended to reflect coverage prior to the arrival of foreign residents, while the

final year (2008) was selected to characterize the current state of land cover. Since the foreign resident boom effectively began in the mid 2000s, I also chose an intermediate year (1992) to determine differences in the rate of change towards the latter end of the study when social activity increased. In this context, the methodological approach used to conduct the land cover change study, based on combining GIS with social data, allows for the integration of qualitative detail obtained during personal interviews and extensive literature reviews on socioeconomic processes with observed physical changes.

### *Methods*

*Data acquired and source*

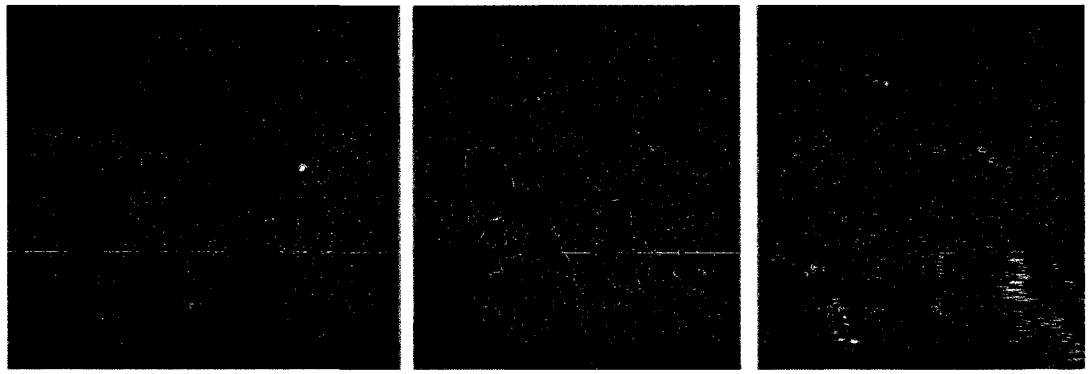
In order to generate land cover maps for each period, I obtained Landsat TM and Landsat ETM+ multi-spectral images from 1986, 1992, 2008, and 2009[33]. I also acquired base maps of the archipelago from the Panamanian Statistics and Census Institute (Table 4.1).

[33] Due to cloud cover and instrument failure I used an image from 2009 in order to compile missing data for the 2008 land cover map.

**Table 4.1: Land cover change data type and source**

| DATA TYPE | DATE | SOURCE |
|---|---|---|
| Landsat 5 TM images | FEB 1986 | Global Land Cover Facility, www.landcover.org. |
| Landsat 5 TM images | FEB 1992 | Global Land Cover Facility, www.landcover.org. |
| Landsat 7 ETM+ images | SEPT 2008 | Global Land Cover Facility, www.landcover.org. |
| Landsat 7 ETM+ images | DEC 2008 | Global Land Cover Facility, www.landcover.org. |
| Landsat 7 ETM+ images | FEB 2009 | Global Land Cover Facility, www.landcover.org. |
| National Census map | MAR 2007 | Instituto Nacional de Estadística y Censo, Contraloría General de la República de Panamá |

Landsat TM and ETM+ raster images have a spatial resolution of 30 meters per pixel, which allows for an adequate recognition of the Earth's surface for analyses at scales of over 1:50,000. Additionally, they have seven bands that correspond to both the visible and the infrared portion of the electromagnetic spectrum. Landsat 7 ETM+ images have an additional panchromatic spectral band that provides information at a finer spatial resolution. Of these, three visible bands, 1, 2, and 3, and three infrared bands, 4, 5, and 7 were used for subsequent land cover classification. The infrared thermal band 6, and the panchromatic band 8 (available in Landsat 7 images) were excluded from this process. This combination of six spectral ranges enabled the identification of vegetation characteristics and the evaluation of processes of change with high confidence.



Landsat TM 1986 Landsat TM 1992 Landsat ETM+ 2008

**Figure 4.2: Compiled Landsat images used to generate Land Use maps for the Bocas del Toro Archipelago**

*Image processing and classification*

In order to obtain land cover maps of the study area for 1986, 1992, and 2008, raster images were classified using Erdas Imagine v. 8.7 software. This information was then digitized into vector datasets in shapefile format and stored in a Geographic Information System in ESRI. Geospatial databases and maps were then created by supplementing the digital vector data generated from satellite images with available base maps, also in vector format, using ArcGis v. 9.3. All satellite images were geometrically corrected to Universal Transverse Mercator (UTM) 17 North cartographic system, based on Clark's 1866 spheroid. The root mean square (RMS) error obtained from this process was 25 meters.

In the case of the Landsat ETM+ images used for the 2008 coverage map, it was necessary to conduct a compilation process in order to fill in information gaps

presented by the Scan Line Corrector (SLC) failure that affected the Landsat 7 satellite in 2003. Images captured in this SLC-off mode typically lose approximately 25% of the data in each scene. Image processing techniques accounted for these data gaps in two ways. First, given that the specific location of information gaps varies in each scene, I compiled a series of images from 2008 and one from February 2009 in order to supplement the missing information (USGS 2009). I then filled in any remaining data gaps with information from the 2008 Land Cover analysis map of Panama generated by the National Environmental Authority (ANAM 2008a). This ANAM map was primarily the result of digital classification of ASTER images, and included some Landsat ETM+ images to account for areas with high cloud cover. Although the ANAM map includes 16 vegetation classes that represent vegetation diversity, these are collapsible into the five land cover categories used in this study that reflect basic landscape characteristics.

Georeferenced images were classified using two complementary techniques. The first technique was a non-supervised automated classification conducted with the use of the ISODATA (*Iterative Self-Organizing Data Analysis Technique*) algorithm to group pixels, using a minimum spectral distance formula. The result was an image that had 250 groups of pixels with similar spectral value ranges. The second technique involved a manual, supervised process that reclassified the previously identified groups of pixels into five pre-determined thematic categories (forests,

mangroves, bushes, grasslands, and communities), described in more detail in the following section. Each of the 250 groups was assigned to one of these categories. One layer was created for each of the five categories, and was then used to generate tables and land cover maps of the Bocas del Toro Archipelago and its political subdivisions for each year.

Finally, the use of these five categories and the land cover classification for 2008 were evaluated and confirmed through groundtruthing efforts based on surface observations of several sites throughout the archipelago. These site visits were coordinated to coincide with planned interview and/or focus group sessions conducted for the social data gathering components of this dissertation, and included sites such as Bastimentos Town, Bahía Honda, Solarte, Isla Popa, Isla Tigre, Cayo de Agua, San Cristóbal, Buena Esperanza, Bluff Beach, and Boca del Drago. Further data evaluation techniques included qualitative validation with local experts and comparison with existing vegetation cover studies (ANAM-OIMT 2003).

Image processing and classification methods are summarized in the following diagram:

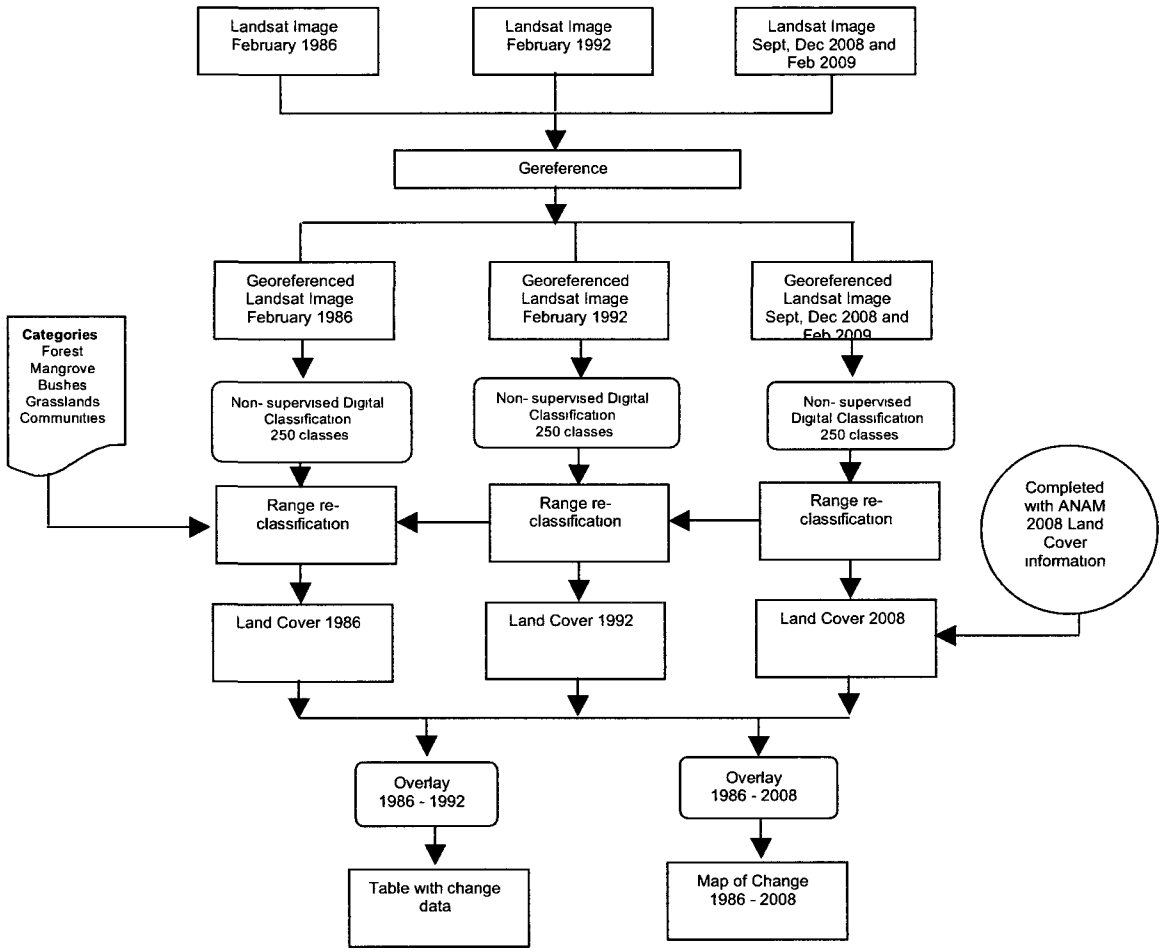



**Figure 4.3: Flow diagram for Landsat image processing and classification method**

*Thematic Categories*

Informed by existing land cover studies of the Panama Canal Watershed, the following categories were defined based on landscape characteristics in order to establish a land cover classification in the study area (ANAM-ACP 2006). These categories do not reflect forest structure or floristic diversity.

1. Forests: This category includes mature, secondary, and young forest formations of 10 years or more, that reach heights between 5 and 30 meters. It also includes flooded forests.

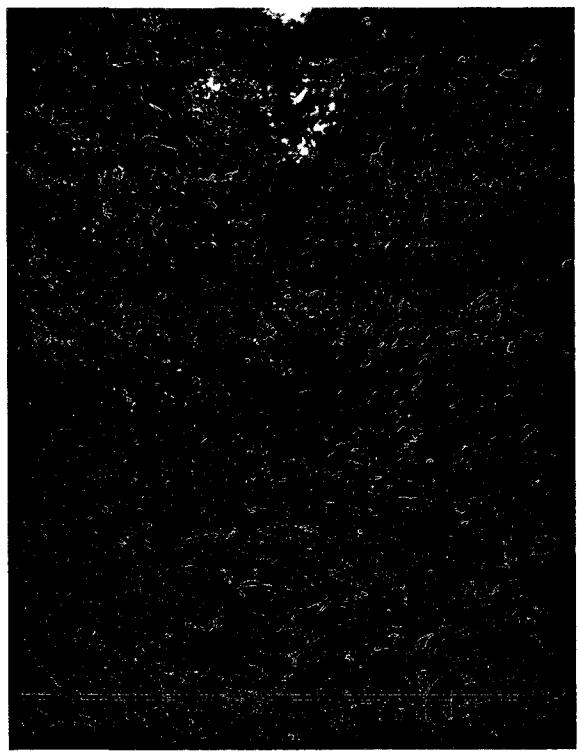


**Figure 4.4: Forest in Bastimentos Island National Marine Park**

2. Mangroves: This category represents a type of coastal vegetation composed of mangrove trees that tolerate saltwater. They occupy intertidal zones close to sources of fresh water.

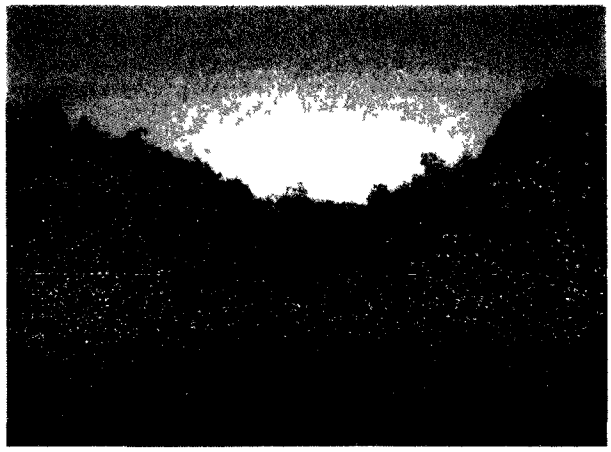


**Figure 4.5: Mangroves of Almirante Bay**

3. Bushes and successional forests: This category can be defined as successional vegetation that is dominated by bushes, shrubs, and small trees up to 5 meters tall. These vegetative formations represent a successional stage towards young forests, if they are not altered.

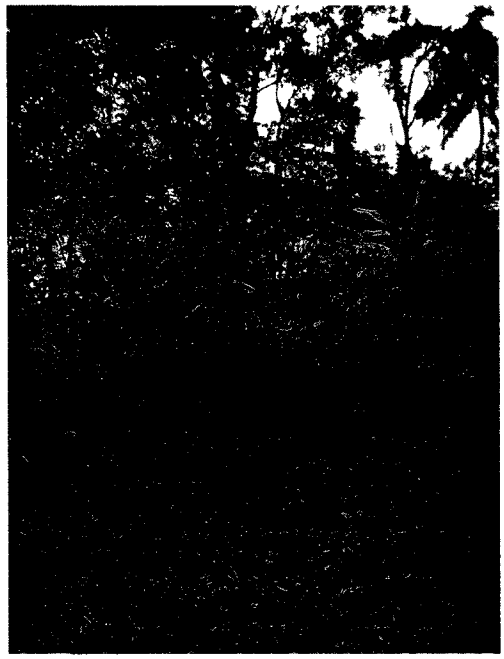


**Figure 4.6: Bushes and successional forests on Bastimentos Island**

4. Grass and rangelands: This category is dominated by grasses that alternate with shrubs, bushes, and a few trees. This type of cover is associated with interventions such as cattle farming and subsistence agriculture.

**Figure 4.7: Grass and rangelands on road to Boca del Drago**

5. Human communities: Corresponds to areas with established towns and communities.

**Figure 4.8: Community of Bocas Town**

*Limitations*

The main limitations to this study include scale and spectral signature, cloud cover, instrument failure, and compatibility between national-level social data and remote sensing data. The 30 meters per pixel scale of Landsat images can lead to varying results, especially when measuring land cover along irregular coastlines, as in the case of the archipelago. Other problems associated with scale include the degree to which it is possible to discern specific land uses as opposed to more generalized landscape-level categories of land cover, narrow fringe mangrove areas and small agricultural plots that may be too small for detection, and the trend of mangrove thinning instead of clearing, all of which would not be evidenced in Landsat images. Similarly, site visits confirmed that villages in the political subdivisions of Tierra Oscura and Punta Laurel were composed of small indigenous communities, with family homes typically scattered throughout communal land on which subsistence agriculture is also practiced. These villages, known locally as *caseríos*, are loosely arranged around a town center that includes the school, a sports field, a health center (depending on the size and location of the village) and some sort of communal structure for meetings and social gatherings (Young 2007). Scattered foreign-owned homes were also visible on the surface, but were not perceived by satellite images.

The visible ranges provided by Landsat bands 1, 2, and 3, used to measure flooded forest (included in the forest category) and mangrove cover, can also lead to

inaccuracies in the classification process, as the spectral signature of vegetation in high water levels is the same as that of water. Both problems of scale and spectral signature were addressed in this study by site visits, comparing data with existing maps during the supervised reclassification process, and by relying on previous mapping experience in the area.

Additionally, recurrent cloud cover in the tropics, coupled with the frequency of the satellite overpass, and the 2003 Landsat 7 SLC failure, made it difficult to find individual images that were adequately clear for analysis (USGS 2009, Sloan 2010). In response, the 2008 land cover map (Figure 4.10) was compiled using several images for 2008 and one from 2009. Missing data was filled in with information from the 2008 ANAM land cover study (ANAM 2008a). Finally, standardized social data obtained from the national census were, in most cases, not readily available at the finer geographic scales of analysis desirable for this type of study (Sloan 2010). The supplemental qualitative research conducted for this dissertation helped to fill in existing gaps in social science data.

*Acquisition of social data*

The data on existing social processes in the Bocas del Toro archipelago were obtained from extensive literature reviews, 1990, 2000, and 2010 national population census, 2001 national agricultural census, and 6 expert interviews (INEC 1990, 2000, 2001,

and 2010). I conducted interviews between September 2008 and December 2010 with key informants identified from a group of expert individuals met during preliminary research visits to Bocas del Toro, and subsequently selected according to their specific area of knowledge related to social, historical, economic, and environmental aspects of the archipelago. These informants included local representatives of non-governmental and political organizations, scientists, and long-term residents.

*Analysis*

The analytical process consisted of obtaining the area and percentage land cover by category for each time period, for the archipelago as a whole, and for each subdivision. Additionally, land cover for each period was overlaid in order to calculate percentage change between the cover categories over time, as well as annual rates of change.

*Results*

Land cover between 1986 and 2008 changed little for the five land-cover categories (Table 4.2). Forests constituted the major land cover category, at 61.4% of the archipelago in 1986 and 65% in 2008, while human communities were the smallest category at 97 hectares in 1986 and 122.3 in 2008 (equivalent to 0.4% and 0.5% of the total study area, respectively).

**Table 4.2: Land Cover in the Bocas del Toro Archipelago: 1986, 1992, and 2008**

| Cover Category | 1986 (ha) | 1986 (%) | 1992 (ha) | 1992 (%) | 2008 (ha) | 2008 (%) |
|---|---|---|---|---|---|---|
| Forests | 16,396.6 | 61.4% | 16,298.1 | 61.0% | 17,367.5 | 65.0% |
| Mangroves | 1,853.8 | 6.9% | 1,848.8 | 6.9% | 1,959.7 | 7.3% |
| Grass and rangelands | 2,344.5 | 8.8% | 2,425.6 | 9.1% | 3,039.6 | 11.4% |
| Bushes and successional forests | 6,030.7 | 22.6% | 6,053.1 | 22.7% | 4,233.1 | 15.8% |
| Communities | 96.6 | 0.4% | 96.60 | 0.4% | 122.3 | 0.5% |
| **TOTAL** | **26,722.2** | **100.0%** | **26,722.2** | **100.0%** | **26,722.2** | **100.0%** |

Areal cover of bushes and successional forests exhibited the greatest magnitude of change between 1986 and 2008, decreasing from 22.6% to 15.8% of total cover at an annual rate of -1.6%. The other land cover categories increased slightly during the same period. Specifically, forests increased from 61.4% to 65% at an annual rate of 0.26%, mangroves increased from 6.9% to 7.3% at an annual rate of 0.25%, grass and rangelands and human communities increased annually by 1.19% and 1.08% respectively (Tables 4.2 and 4.3).

**Table 4.3: Annual rate of land cover change in the Bocas del Toro Archipelago**

| Cover Category | Annual rate of change (86-92) | Annual rate of change (92-08) | Annual rate of change (86-08) |
|---|---|---|---|
| Forests | -0.100 | 0.398 | 0.262 |
| Mangroves | -0.045 | 0.365 | 0.253 |
| Grass and rangelands | 0.568 | 1.420 | 1.187 |
| Bushes and successional forests | 0.062 | -2.210 | -1.596 |
| Communities | 0.000 | 1.485 | 1.078 |

Measurements of land cover by administrative subdivisions or *corregimientos* yielded more detailed information on patterns of land cover over time at a finer geographic scale (Table 4.4). Forests exhibited an increase in all subdivisions since 1986, except in Punta Laurel where they showed a -11.2 percentage change in 22 years. Consequently, it was the only subdivision to exhibit an increase in cover of bushes and successional forests between 1986 and 2008. Similarly, mangrove cover increased in all subdivisions, except Bocas del Toro where it exhibited a -18.3 percent decrease between 1986 and 2008. Human communities in the subdivisions of Punta Laurel and Tierra Oscura were not detectable at the 30 m pixel visible scale of Landsat images, which suggests that they are either too small or exist under the canopy. In contrast, human communities in the Bastimentos subdivision exhibited the highest percentage change from 6.9 to 24.2 hectares (251%) since 1986. Finally, grass and rangelands constitute the only land cover category to show an increase in all political subdivisions.

**Table 4.4: Land Cover (ha) in the Bocas del Toro Archipelago by political subdivision (1986-2008)**

| Cover category | Political subdivision | | | | | |
|---|---|---|---|---|---|---|
| | Bocas del Toro | | | Bastimentos | | |
| | 1986 (ha) | 2008 (ha) | % change 86-08 | 1986 (ha) | 2008 (ha) | % change 86-08 |
| Forests | 3242.9 | 3709.2 | 14.4 | 3853.1 | 4448.5 | 15.5 |
| Mangroves | 139 | 113.6 | -18.3 | 544.6 | 611.5 | 12.3 |
| Grass and rangelands | 931.8 | 1064.7 | 14.3 | 313.1 | 444.4 | 41.9 |
| Bushes and successional forests | 1664.7 | 1081.9 | -35.0 | 1212.7 | 401.8 | -66.9 |
| Communities | 89.6 | 98.6 | 10.0 | 6.9 | 24.2 | 250.7 |
| **TOTAL** | 6068.0 | 6068.0 | | 5930.4 | 5930.4 | |

| Cover category | Political subdivision | | | | | |
|---|---|---|---|---|---|---|
| | Punta Laurel | | | Tierra Oscura | | |
| | 1986 (ha) | 2008 (ha) | % change 86-08 | 1986 (ha) | 2008 (ha) | % change 86-08 |
| Forests | 5306.9 | 4711.1 | -11.2 | 3993.7 | 4508.1 | 12.9 |
| Mangroves | 557.2 | 610.2 | 9.5 | 612.9 | 617.5 | 0.8 |
| Grass and rangelands | 315.3 | 602 | 90.9 | 784.6 | 928 | 18.3 |
| Bushes and successional forests | 804.6 | 1060.7 | 31.8 | 2348.6 | 1686.2 | -28.2 |
| Communities* | | | | | | |
| **TOTAL** | 6984.0 | 6984.0 | | 7739.8 | 7739.8 | |

* Communities in Punta Laurel and Tierra Oscura subdivision were not detectable within the visible scale of Landsat images

## V. DISCUSSION: SOCIALIZING ENVIRONMENTAL CHANGE

The following section constitutes a discussion of the previously outlined results in terms of two main points. The first one adopts a critical perspective by questioning the existing discourse on environmental degradation in terms of the nature of change

and the articulation of local actors, causes, and outcomes. The second point of discussion is more empirical, in that it emerged from the results of the land cover analysis.

### *A critical exploration of the nature, location, and actors of change*

The dominant discourse within self-identified environmentalists portrays residential development and the expansion of tourism-based activities in the Bocas del Toro Archipelago as severely damaging to the natural environment. However, as presented in Table 4.3, annual changes in land cover in the archipelago exhibit an increase in coverage of most categories between 1986 and 2008, except bushes and successional forests. To be expected, given the recent nature of demographic change influenced by the residential boom of the early 2000s, a closer look at these results reveals that the archipelago did not experience major changes in land cover during the first six years of the study (between 1986 and 1992). Land cover change data reveals that gradual changes in cover are more noticeable on the landscape after 1992. For this reason, I only generated land cover maps for 1986 and 2008 (see Figures 4.9 and 4.10). Patterns of land cover change differ at the finer scale of political subdivisions (Table 4.4) due to particular natural and social processes such as availability and use of land, population growth and density, access to and size of island, coastal change, and broader economic opportunities. Additionally, as pointed out in the following paragraphs, the pathways of change can be quite complex.

In 1986, Punta Laurel exhibited the highest percentage of forest cover, at 19.9% of the total forests of the archipelago. This proportion changed over time given that most deforestation in the study area occurred within the subdivision of Punta Laurel, particularly on Popa Island (Valdespino and Santamaría 1997). While it is generally believed that the communities surrounding the deforested areas, primarily composed of Ngöbe Indians, are responsible for logging activities in the area, my research suggests that this is an oversimplified explanation. One member of the Popa 2 community informed me (T.M Pers. Comm. 17 March 2009) that every day they see individuals from outside their community arrive armed with chainsaws and logging permits. He added that logging was seen as a lucrative activity, as the demand for native species for the construction of foreigner-owned homes was increasing. Conversely, he also recognized the negative effects of logging as a loss of natural heritage that generated a one-time economic gain for both the individual selling the resource, and the agency in charge of issuing permits. Clearly, as suggested by Lambin et al. (2001), this demonstrates that the actors involved in this particular case of land cover change not only include locals, but also local government authorities as stewards of the resource, and the foreign residents as creators of demand.

Complex pathways of change are also evident in the cases of the Bocas del Toro and Bastimentos subdivisions. A similar exploration of population (see Figure 4.11) and social processes demonstrates that overall changes are occurring in and around the

major population centers. The main tourism and residential amenities are centered in these areas, namely the towns of Bocas del Toro, capital of the Bocas del Toro district, and Bastimentos. As such, in contrast with the perception of drastic change, the overall footprint of land dedicated to human communities has remained relatively small, increasing annually by 1.1% between 1986 and 2008. Additionally, human influences are evident in areas beyond Bocas del Toro and Bastimentos towns, including those under other categories of land cover. For instance, the annual -1.6% reduction in bushes and successional forests is partly due to a conversion to forest through natural regeneration and/or reforestation along the northeastern coast of Colón Island, the mainland areas of Tierra Oscura, the northern half of Bastimentos Island, parts of San Cristóbal Island, and the southwest coast of Cayo de Agua Island (See Figures 4.8 and 4.9). These are all areas that in the past ten years have been purchased by local and foreign investors looking to either develop tourist and residential projects, invest in reforestation, or to build private homes. As such, although these lands were initially perceived as threatened by potential deforestation for firewood, construction, or expansion of agriculture and cattle activities, it has not been the case (Valdespino and Santamaría 1997).

Conversely, the northwest portion of Colón Island and the areas surrounding the community of Salt Creek in southeast Bastimentos Island, exhibit a reversal of the transition to forest. Bushes and successional forests, as well as some forested areas,

have converted to grass and rangelands, representing an average annual growth rate of 1.2% for this category. This trend, located mostly in the Bocas del Toro and Bastimentos subdivisions, is due in part to opening of the path for building the road to Boca del Drago in 1984 on Colón Island, and to the local population growth in the community of Salt Creek and surrounding areas of Bastimentos Island between 1990 and 2000 (INEC 1990 and 2000). Both processes are occurring in areas where agriculture and cattle constitute the primary subsistence and small-scale economic activities that have remained in practice despite the tourism and residential boom. Additionally, it is important to consider that bushes and successional forests are precisely the type of land cover areas on which the agency that regulates forest use, the National Environmental Authority (ANAM), allows controlled cutting activities to supply the demand for firewood and the development of agricultural activities[34]. The fact that these activities have continued, and even expanded in some areas, reflects the continued demand for primary sector goods and timber as a result of growing economic opportunities in the area. While these opportunities are partly a reflection of the tourism and foreign resident boom, other factors such as the increase in distribution and commercialization of goods, and local population growth also contribute to this small expansion of the primary sector.

[34] Ley No. 1, 3 February 1994, establishes forestry legislation for the Republic of Panama (Gaceta Oficial No. 22,470 7 February 1994.

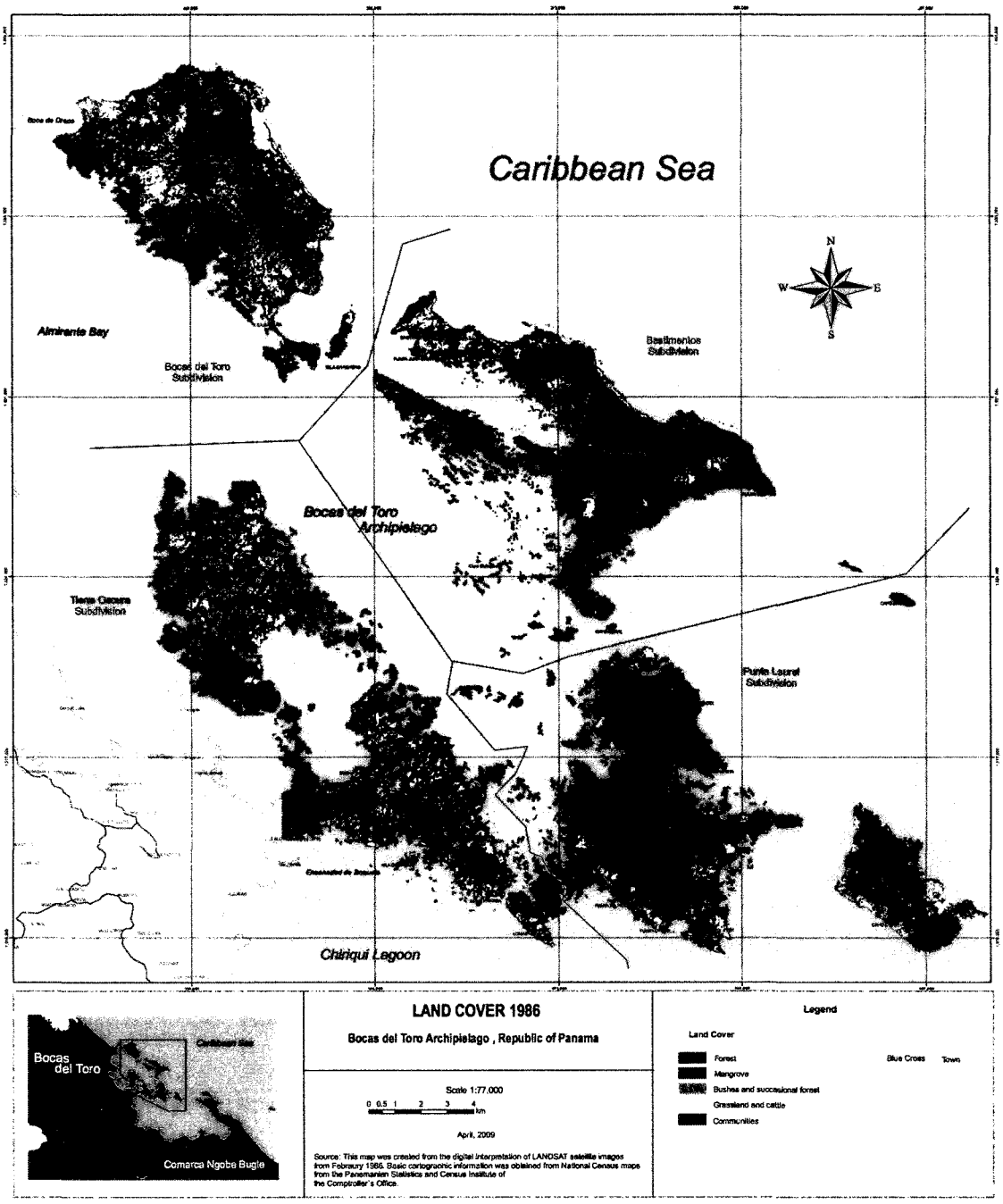



**Figure 4.9: 1986 Land cover map derived from Landsat images (Green=forests, Purple=mangroves, Mustard=bushes and successional forest, Yellow=grassland and cattle, and Red=communities)**

The gradual nature of change between 1986 and 2008, and the small proportion of grass and rangeland areas, relative to other cover categories, suggests that it does not currently constitute an imminent threat related to the increase of foreign residents. It is, however, a trend that must be monitored and requires further evaluation in order to ensure the adequate and sustainable use of natural resources in those areas.

Finally, an analysis of mangrove cover change also contributes to this critical assessment of the effects of foreign investment on the Bocas del Toro Archipelago. However, based on the implications of the previously described scalar limitations of measuring mangrove cover using Landsat images, I hesitate to make quantitative statements about trends in mangrove cover change. Instead I will provide a brief qualitative description of change in mangrove cover for the following reasons: First, there is a low proportion of mangroves in the Bocas del Toro Archipelago, relative to other cover categories, and second, their location along the coastal zone suggests that cover measurements are particularly susceptible to classification errors. Based on literature reviews, personal observations during two years of fieldwork in Bocas del Toro, and on personal communication with mangrove experts (I. C. Feller and C. Lovelock Pers. Comm. 3 December 2010), I propose that important changes in mangrove cover in the Bocas del Toro subdivision occurred because it is the capital of the district, and subsequently reflects most development and economic growth. Both local and foreign residents are responsible for these changes.

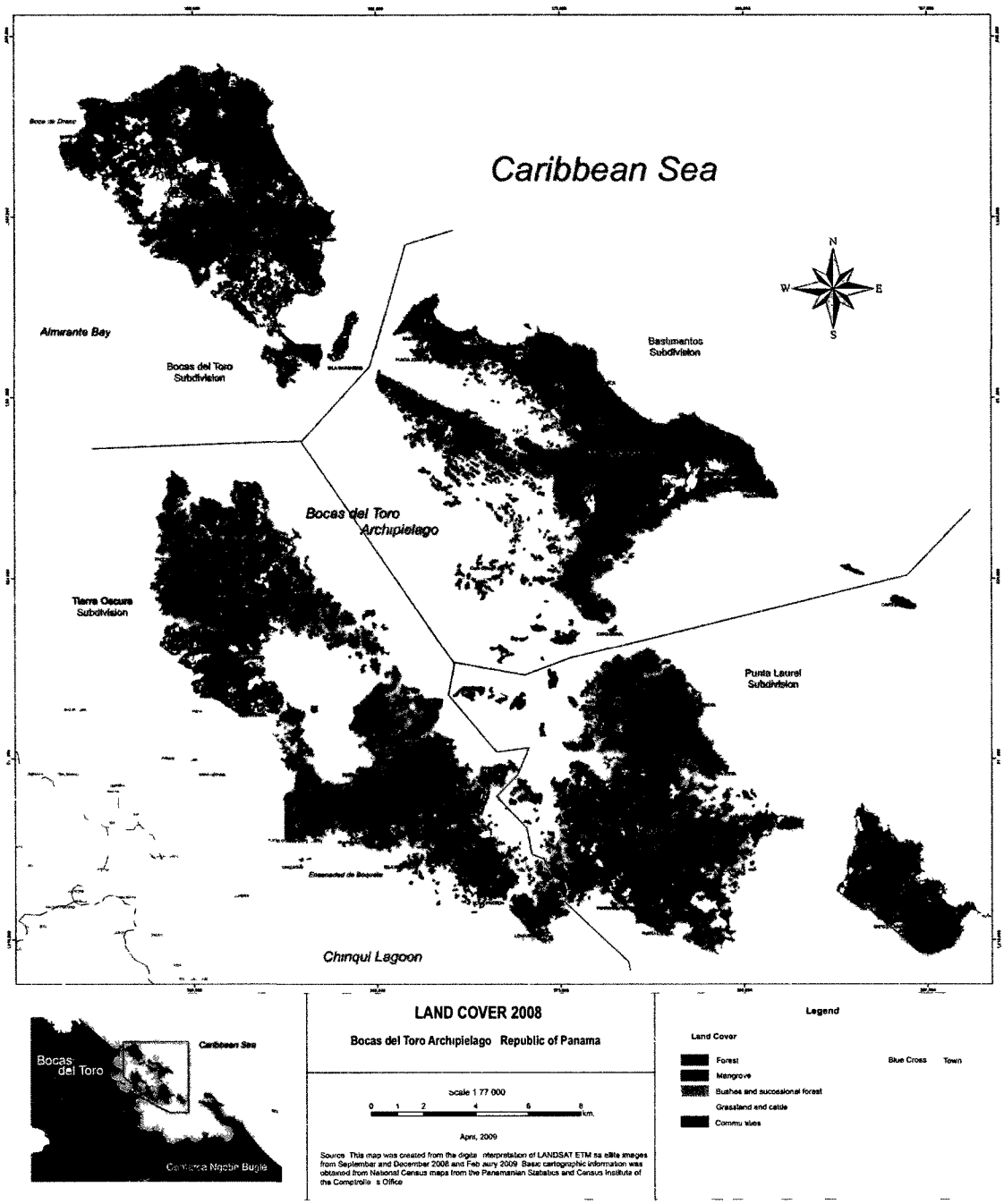



**Figure 4.10: 2008 Land cover map derived from Landsat images (Green=forests, Purple=mangroves, Mustard=bushes and successional forest, Yellow=grassland and cattle, and Red=communities)**

For instance, entire communities, primarily composed of Ngöbe Indians, have settled in previously mangrove-covered areas surrounding the water treatment plant near Bocas Town. There are also a few highly destructive cases of mangrove clearing for the construction of canals for residential development projects along the mainland-facing coast of Colón Island. In general, however, mangrove ecosystems in the Bocas del Toro Archipelago are not as impacted as I was initially led to believe. Contrary to widely held perceptions (G.J. Pers. Comm. 2009-2010), threats from construction of foreign-owned homes or developments have, for the most part, been minimal as these homes tend to be built on dry land, behind the mangroves, while docks and other access structures have mostly been built around existing landscape features. Although traditionally used for firewood, construction of traditional indigenous homes, and to make charcoal, these activities generally take place on the mainland areas of the Bocas del Toro Province. Additionally, the National Aquatic Resources Authority (ARAP) passed a resolution in 2008 that designates all coastal wetlands of the Republic of Panama, particularly mangroves, as special coastal management zones[35]. Despite the low enforcement capacity of the regulating agency, experts believe it will constitute a deterrent to further use of mangroves in the archipelago.

[35] Resuelto ARAP No. 1, 29 January 2008. Gaceta Oficial No. 25988, 28 February, 2008.

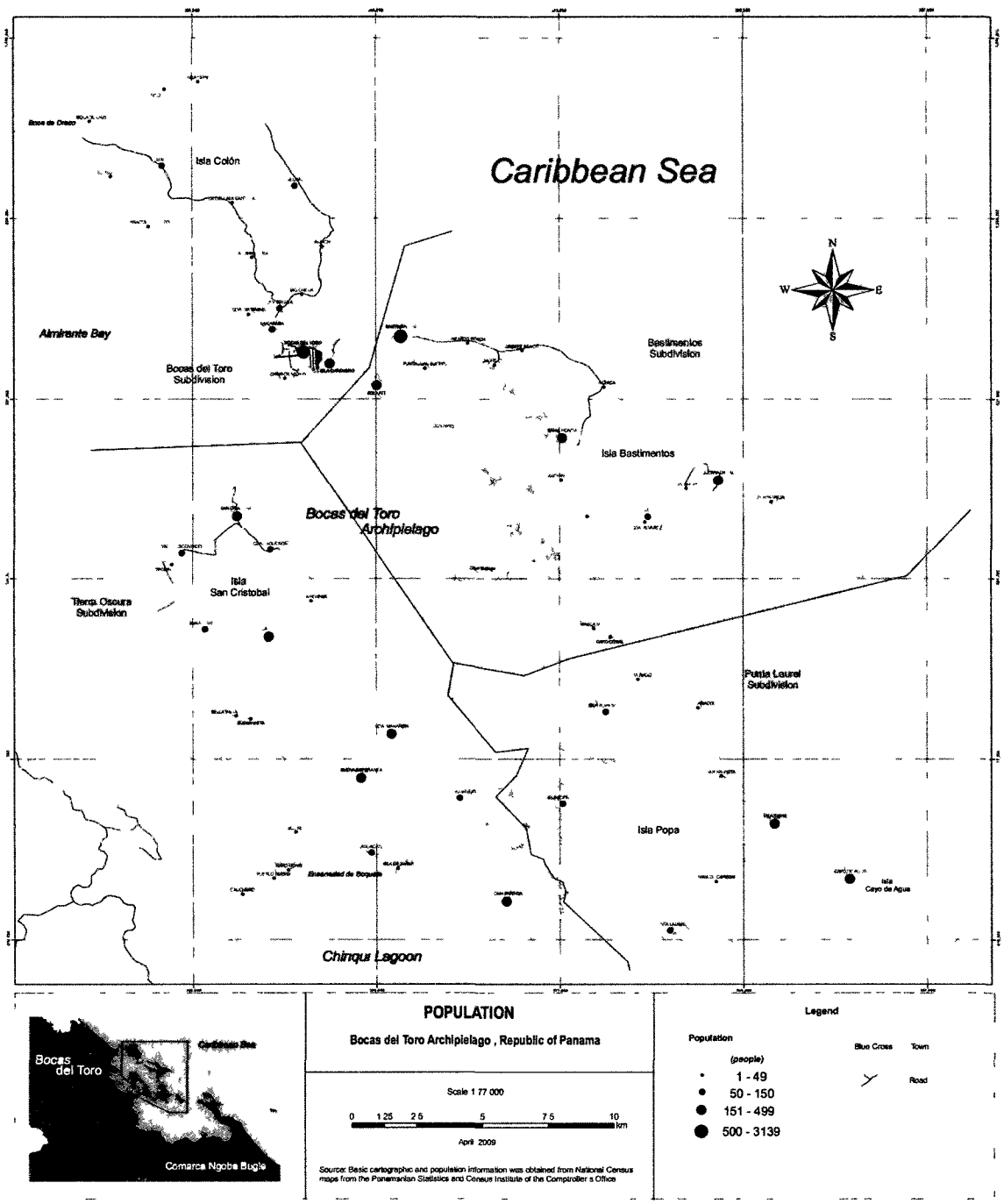



**Figure 4.11: Population map for the Bocas del Toro Archipelago. Source: 2000 National Census**

***Is the Bocas del Toro Archipelago experiencing a forest resurgence? If so, is the promotion of Bocas del Toro as a tourism and foreign resident destination an appropriate model to follow for the rest of the country?***

Studies show that forests in the Republic of Panama have decreased from 49.3% to 44.91% between 1992 and 2000, while in the Bocas del Toro Province they have decreased from 75.6% to 73.4% in the same period (ANAM-OIMT 2003)[36]. In contrast, according to the results of this land cover change study, forests in the Bocas del Toro Archipelago initially decreased annually by -0.1% between 1986 and 1992, but exhibited an overall annual increase of 0.3 % in the 22 years between 1986 and 2008, from 61.4% to 65%. A slight forest recovery is also documented in the Panama Canal Watershed, although based on different dynamics of conservation, use, and anthropogenic pressure. Between 1985 and 2003 the rate at which forests in the watershed were lost slowed down, with the last five years of the study presenting a positive annual rate of change in forest cover of 0.05% (ANAM-ACP 2006).

Hecht (2010) points out that the process of forest resurgence in tropical Latin America is more a reflection of international political economic influences, than internal modernization processes. Therefore, the globalization of travel, markets, and communication, reflected in the development of national level incentives for foreigners to invest in Panama, and its subsequent recognition as a lifestyle destination, are rapidly attracting foreign developers, retirees, and other individuals in

[36] 2008 data is currently unavailable as preliminary results were held back until further confirmation through field visits (ANAM 2008a).

search of economic opportunities. Panama's promotion of lifestyle migration as a development strategy reflects these global influences through the promotion of neoliberal institutional, political, and economic conditions as incentives to attract foreign direct investment (Jackiewicz and Craine 2010). As one of the main destinations for tourists and investors in the country, the expansion of foreign resident migration to Bocas del Toro constitutes the primary socioeconomic and demographic process affecting the archipelago. This process began in the 1990s, and reached its peak around 2006 (G.J. Pers. Comm. 2009).

Locally, these global processes have significant implications for the economies and people of the Bocas del Toro Archipelago. For instance, the recent growth of foreign residents and visitors to Bocas del Toro has contributed to changes in land tenure arrangements and economies by increasing land values, costs of living, and influencing the structure and type of employment in the region (AP/UM 2008). These factors ultimately affect existing land use patterns, contributing to the increase of forest cover. The estimated 0.3% annual rate of increase of forests in the archipelago is a reflection of many factors. As a result of this influx of foreign residents and associated land sales for tourism and residential developments, changes in land tenure have affected both the use of natural resources, and the types of economic activities practiced on the islands. Foreigners in Bocas del Toro tend to buy land for private use and enjoyment, speculation, or development. The first two reasons for buying usually

result in a natural regeneration of land cover, as land is either left waiting until it increases in value, or a home is built on one portion while the rest is allowed to continue its natural ecological processes. On the other hand, purchases for development have taken an interesting turn. At one point in the early to mid 2000s, large-scale residential and tourist developments emerged as significant threat to forests through plans for construction of homes for foreigners, and associated amenities. However many of these projects have failed or been restructured as evidenced by the recently abandoned Sunset Point residential project on Colón Island, the indefinite suspension of various projects promoted by Six Diamonds Resorts International throughout the archipelago, and the cancellation of Phase II of the Red Frog project on Bastimentos Island (CIAM 2008). Others drivers of change in forest cover include investments in reforestation schemes such as teak plantations on Colón Island. Finally, in terms of agricultural practices, the few foreigners who engage in agricultural activities do so at small scales, and in many cases, use sustainable methods such as permaculture, that ensure the maintenance of a more complex forest structure and canopy than that of a monocrop reforested landscape. Within the local population, economic activities or livelihoods have also shifted from the primary to the service sector, consequently reducing pressure on natural resources. Additionally, with the more frequent interactions between locals and foreigners, in particular in terms of sustainable land use and management practices, environmental attitudes are changing within the local population.

An in-depth analysis of forest resurgence assumes that forest resources were previously in decline, and explains why this was the case. In the case of Bocas del Toro, detailed historical forest data is not available at the district scale for this region. However, as outlined in the context section of this paper, several simultaneous processes of expansion of agricultural frontier in response to growing local human communities and the opening of local markets and distribution mechanisms for agricultural and forest products, suggest that prior to the arrival of foreign residents forest resources were threatened. However, the generation of region-specific data would be helpful in order to further analyze and explain these trends in their historical context, and to inform research and policy.

Attracting foreigners to Panama is a trend that is rapidly expanding in other areas of the country such as the Azuero Peninsula, Panama City, and Boquete. However, categorically stating that forest resurgence is one possible environmental outcome of the implementation of policies to attract foreigners is problematic, as the local political economic and ecological context is different for all areas. As Moran (2010) points out, environmental decision-making is a complex process that requires the appropriate combination of realistic goal setting, acknowledgment of scalar issues (international and national policies vs. local needs), and the flexibility to adopt methods that recognize the need to act under conditions of uncertainty. Finer scale analyses reveal that the articulation of temporally and locally specific information

with relevant social processes can be used to aid in environmental decision-making at the local level in terms of informing national level policies that promote lifestyle migration as a development strategy (Hecht and Saatchi 2007, Moran 2010). However, as Kull at al. (2007) conclude, "it would be inappropriate for policymakers to assume uncritically that the driving forces should be reinforced or generalized simply to speed forest transitions" (p. 734). Instead, it is necessary to further explore the complex causes, processes, and implications of this phenomenon on individuals, communities, and culture in Bocas del Toro. The case of the Bocas del Toro Archipelago is unique within the country in that it reflects an area in which main economic activities do not necessarily rely on terrestrial resources. Further studies on the implications of such a transition for biodiversity must be conducted, and care must be taken to avoid simply transferring the negative effects of agriculture and deforestation to new locations (Rudel et al. 2010).

## VI. CONCLUSION

The modification of land cover, as a result of changes in land uses, in the context of broad global, national, and local political economic forces, is not a simple process. In the case of Bocas del Toro, the relatively recent promotion of its insular areas as an ideal tourism and foreign resident destination has generated a set of economic opportunities for the local population that affect the type, scale, and extent of natural

resource use. Additionally, the influx of new perspectives and attitudes towards the environment also contribute to these shifts in land use, and associated changes in land cover. In particular, this study shows that contrary to expectations based on the prevalent environmental discourse, the overall impact of the recent foreign resident boom to Bocas del Toro has not resulted in severe environmental degradation. Indeed, this analysis revels that, similar to other localized cases in Panama, there was a slight increase in forest cover in the study region of the Bocas del Toro Archipelago between 1986 and 2008. This finding challenges traditional perceptions of environmental degradation by exploring the complex pathways and actors involved in such changes, and suggests that the current articulation of social and environmental processes has not resulted in overwhelmingly negative outcomes. However, as the economic context of development to date has limited the potential of proposed projects, ongoing monitoring and care must be taken to ensure the right balance between resource demand and allowances for natural regeneration processes.

## SOURCES CITED


Araúz, Celestino. 2007. Bocas del Toro y el Caribe Occidental: Periferia y Marginalidad Siglos XVI - XIX. Panamá, Editorial Mariano Arosemena.

Arden & Price Consulting/University of Miami (AP/UM). 2008. Informe de Avances No. 2: Plan de Manejo Costero de la Provincia de Bocas del Toro. Programa Multifase de Desarrollo Sostenible de Bocas del Toro. Panamá.

Autoridad Nacional del Ambiente (ANAM). 2001. Plan de Manejo del Parque Nacional Marino Isla Bastimentos. Panamá, Panamá.

Autoridad Nacional del Ambiente (ANAM). 2008a. Actualización del Mapa de Vegetación, Uso, y Cobertura Boscosa de Panamá: Informe de Análisis Preliminar de Interpretaciones de Imágenes de Satélites. Panamá, Panamá.

Autoridad Nacional del Ambiente (ANAM). 2008b. Plan Nacional de Desarrollo Forestal: Modelo Forestal Sostenible. Panamá. Panamá.

Autoridad Nacional del Ambiente y la Autoridad del Canal de Panamá. (ANAM-ACP). 2006. Informe del Monitoreo de la Cuenca Hidrográfcia del Canal de Panamá. Programa de Vigilancia de la Cobertura Vegetal, Región Oriental de la Cuenca del Canal. Panamá, Panamá.

Autoridad Nacional del Ambiente y la Organización Internacional de Maderas Tropicales (ANAM-OIMT). 2003. Informe final de resultados de la cobertura boscosa y uso del suelo de la República de Panamá: 1992-2000. Panamá, Panamá.

Barbier, Edward B., Joanne C. Burgess, and Alan Grainger. 2010. The Forest Transition: Towards a more comprehensive theoretical framework. *Land Use Policy*. 27: 98-107.

Birkeland, Charles, Ed. 1997. Life and Death of Coral Reefs. New York, Chapman and Hall.

Briceño, Amilcar E. 2004. Historia y Sociedad de Bocas del Toro y de la Comarca Ngöbe-Buglé: Del Siglo XV al Siglo XXI. Panamá, Editorial Universitaria Carlos Manuel Gasteazoro.

Carr, Mark H., Joseph E. Neigel, James A. Estes, Sandy Andelman, Robert R. Warner and John L. Largier. 2003. Comparing Marine and Terrestrial Ecosystems: Implications for the design of coastal marine reserves. *Ecological Applications*. 13 (Supplement 1): S90-S107.

Castree, Noel. 2001. Socializing Nature: Theory, Practice, and Politics. Chapter 1 In: Castree, Noel and Bruce Braun (Eds.). 2001. Social Nature: Theory, Practice, and Politics. Oxford, Wiley-Blackwell.

Centro de Incidencia Ambiental (CIAM). 2008. Anulación EIA Red Frog [Press Release]. Retrieved from: http://www.diariocritico.com/panama/2008/Diciembre/noticias/115391/declaro-ilegal-la-construccion-de-un-proyecto-en-red-frog-beach.html

Crews, Kelley A. and Stephen J. Walsh. 2009. Remote Sensing and the Social Sciences. Chapter 31 In: Warner T., D. Nellis, and G. Foody (Eds.). 2009. Handbook of Remote Sensing. Sage Publications.

Ellison, Aaron M. and Elizabeth J. Farnsworth. 2001. Mangrove Communities. Chapter 16 In: Mark D. Bertness, Steven D. Gaines and Mark E. Hay, Eds. 2001. Marine Community Ecology. Massachusetts, Sinauer Associates.

Fundación Albatross Media (Creators). 21 September 2007. Bocas del Toro: Corredor Vital [Video]. Retrieved from: http://www.youtube.com/watch?v=cxwZncxtEKA.

Gibson, Clark C., Elinor Ostrom, and Toh-Kyeong Ahn. 2000. The Concept of Scale and the Human Dimensions of Global Change: A Survey. *Ecological Economics*. 32(2): 217-39.

Guzmán, Héctor M. 2003. Caribbean Coral Reefs of Panama: Present status and future perspectives. In: Cortés, Jorge (Ed.). 2003. Latin American Coral Reefs. Elsevier Science.

Guzmán, Héctor M., Penelope A. G. Barnes, Catherine E. Lovelock, and Ilka C. Feller. 2005. A Site Description of the CARCOMP Mangrove, Seagrass and Coral Reef Sites in Bocas del Toro, Panama. *Caribbean Journal of Science.* 41(3): 430-440.

Harvey, David. 2005. A Brief History of Neoliberalism. Oxford University Press.

Hecht, Susanna B. and Sassan S. Saatchi. 2007. Globalization and Forest Resurgence: Changes in forest cover in El Salvador. *BioScience*. 57(8): 663-672.

Hecht, Susanna B. 2010. The new Rurality: Globalization, peasants and the paradoxes of landscapes. *Land Use Policy.* 27:161-169

Heckadon-Moreno, Stanley (Ed.) 1993. Agenda Ecológica y Social para Bocas del Toro: Acta de los Seminarios Talleres. Panamá, Smithsonian Tropical Research Institute.

Instituto Nacional de Estadística y Censo (INEC). 1990, 2000, 2010. Censos Nacionales de Población y Vivienda. Contraloría General de la República de Panamá.

Instituto Nacional de Estadística y Censo (INEC). 2002a. Sexto Censo Nacional Agropecuario. Volúmen 1, Cuadro No. 6. Contraloría General de la República de Panamá.

Instituto Nacional de Estadística y Censo (INEC). 2002b. Sexto Censo Nacional Agropecuario. Volúmen 4, Cuadros No. 13 y 14. Contraloría General de la República de Panamá.

Instituto Nacional de Estadística y Censo (INEC). 2002c. Sexto Censo Nacional Agropecuario. Volúmen 2, Cuadro No. 40. Contraloría General de la República de Panamá.

Jackiewicz, Edward L. and Jim Craine. 2010. Destination Panama: An examination of the migration-tourism-foreign investment nexus. [Special Issue on Lifestyle Migration]. *Recreation and Society in Africa, Asia & Latin America.* 1(1): 5-29.

Kull, Christian A., Camellia K. Ibrahim, Thomas C. Meredith. 2007. Tropical Forest Transitions and Globalization: Neo-Liberalism, Migration, Tourism, and International Conservation Agendas. *Society and Natural Resources.* 20(8): 723-737.

Lambin, Eric F., B.L. Turner, Helmut J. Geist, Samuel B. Agbola, Arild Angelsen, John W. Bruce, Oliver T. Coomes, Rodolfo Dirzo, Gunther Fischer, Carl Folke, P.S. George, Katherine Homewood, Jacques Imbernon, Rik Leemans, Xiubin Li, Emilio F. Moran, Michael Mortimore, P.S. Ramakrishnan, John F. Richards, Helle Skanes, Will Steffen, Glenn D. Stone, Uno Svedin, Tom A. Veldkamp, Coleen Vogel, and Jianchu Xu. 2001. The Causes of Land-use and Land-cover Change: Moving beyond the myths. *Global Environmental Change.* 11: 261–269.

Leach, Melissa and Robin Mearns. 1996. Environmental Change and Policy. In: Melissa Leach & Robin Mearns (Eds). 1996. The Lie of the Land: Challenging Received Wisdom on the African Environment. Oxford, James Currey.

Lovelock, Catherine E., Ilka C. Feller, Karen L. McKee, and R. Thompson. 2005. Variation in Mangrove Forest Structure and Sediment Characteristics in Bocas del Toro, Panama. *Caribbean Journal of Science*. 41(3): 456-464.

Marín Araya, Giselle. 2004. La Población de Bocas del Toro y la Comarca Ngöbe-Buglé hasta inicios del Siglo XIX. Anuario de Estudios Centroamericanos, Universidad de Costa Rica. 30(1-2): 119-162.

Mather, Alexander. S. 1992. The Forest Transition. *Area*. 24(4): 367-337.

Millennium Ecosystem Assessment (MEA). 2005. Ecosystems and Human Wellbeing: Synthesis. Washington, DC, Island Press.

Millennium Ecosystem Assessment (MEA). 2006. Ecosystems and Human Wellbeing: Current State and Trends. Washington, DC, Island Press.

Moran, Emilio F. 2010. Environmental Social Science: Human-Environment Interactions and Sustainability. Oxford, Wiley- Blackwell.

Programa Ambiental Regional para Centroamérica/ Componente de Areas Protegidas y Mercadeo Ambiental (PROARCA/APM). 2005. Plan de Conservación Amistad – Cahuita – Río Cañas.

Programa Ambiental Regional para Centroamérica/ Componente de Areas Protegidas y Mercadeo Ambiental y Alianza para la Conservación y Desarrollo (PROARCA/APM-ACD). 2006. Caracterización Socioeconómica y Análisis de Situación del Distrito de Bocas del Toro.

Rist, G. 1997. The History of Development: From Western origins to global faith. London, Zed Books.

Robbins, Paul. 2004. Political Ecology: A critical introduction. Malden, MA, Blackwell Publishers.

Rudel, Thomas K., Oliver T. Coomes, Emilio Moran, Frederic Achard, Arild Angelsen, Jianchu Xu, Eric Lambin. 2005. Forest Transitions: Towards a global understanding of land use change. *Global Environmental Change.* 15: 23–31.

Rudel, Thomas K., Laura Schneider, and Maria Uriarte. 2010. Forest transitions: An introduction. *Land Use Policy*. 27: 95–97.

Sloan, Sean. 2010. Remote Sensing for Modeling Socio-Environmental Change in the Tropics at Large Geographic and Temporal Scales. Panel contribution to the Population-Environment Research Network Cyberseminar: What are the remote sensing data needs of the population-environment research community? (May 2010).

Soto, Ricardo, H. Guzmán, Z. Pinzón, J. Moreno, C. Gamboa H., M. Montoya, and R. Vargas (Eds.). 1998. Evaluación Ecológica Rápida del Parque Nacional Marino Isla Bastimentos y áreas adyacentes, provincia de Bocas del Toro. Tomo 3: Recursos costero-marinos. Asociación Nacional para la Conservación de la Naturaleza (ANCON). Panamá, Panamá.

Stoms, David M., Frank W. Davis, Sandy J. Andelman, Mark H. Carr, Steven D. Gaines, Benjamin S. Halpern, Rainer Hoenicke, Scott G. Leibowitz, Al Leydecker, Elizabeth M. P. Madin, Heather Tallis, and Robert R. Warner. 2005. Integrated Coastal Reserve Planning: Making the land–sea connection. *Frontiers in Ecology and the Environment.* 3: 429–436.

The Nature Conservancy (TNC). 2008. Propuesta. Plan de Ordenamiento Territorial: Archipiélago de Bocas del Toro. Panamá, Panamá.

U.S. Geological Survey (USGS). 2009. SLC-off Products: Background. Retrieved from http://landsat.usgs.gov/products_slcoffbackground.php/.

Valdespino, Iván A. and Dilia Santamaría (Eds.). 1997. Evaluación Ecológica Rápida del Parque Nacional Marino Isla Bastimentos y Areas de Influencia: Isla Solarte, Swan Cay, Mimitimbi (Isla Colón), y el Humedal San San-Pond Sak, Provincia de Bocas del Toro. Tomo 1: Recursos Terrestres. Asociación Nacional para la Conservación de la Naturaleza (ANCON). Panamá, Panamá.

Walters, B.B., and A.P. Vayda. 2009. Event ecology, causal historical analysis, and human-environment research. *Annals of the Association of American Geographers.* 99(3): 534-553.

Williams, Susan L. and Kenneth L. Heck, Jr. 2001. Seagrass Community Ecology. Chapter 12 In: Mark D. Bertness, Steven D. Gaines and Mark E. Hay, Eds. 2001. Marine Community Ecology. Massachusetts, Sinauer Associates.

Young, Philip. 2007. Ngöbe Cultural Survival in the Twenty-first Century: Four Challenges. Unpublished manuscript.