

EVOLUTION OF PROTECTED AREA CONSERVATION IN MONTEVERDE, COSTA
RICA

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE

UNIVERSITY OF FLORIDA

2007

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ACKNOWLEDGMENTS

I would like to thank Brian Child, Jack Davis and Eric Keys for advising this thesis and the Center for Latin American Studies for providing financial support for field research. I would also like to than the Monteverde Institute and the Monteverde residents who participated in this project.

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Abstract of Thesis Presented to the Graduate School
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August 2007

Chair: Brian Child

Major: Interdisciplinary Ecology

Protected areas play a vital role in the conservation of natural systems. Often, scholars and policy makers maintain a limited understanding of protected areas by failing to understand them as the product of people's changing ideas about conservation. In reality, protected areas are complex entities that can be better understood in light of their historical development and the local, regional, national and international contexts in which they are created and managed.

Monteverde, Costa Rica offers a distinctive case study of protected-area development. It is home to a protected area network that has grown in both area and scope to protect watersheds and regional biodiversity, provide recreation for foreign tourists, and serve the economic needs of local communities. The various stages in the evolution of the protected area network were driven by the changing needs and desires of locals and trends in international conservation. This study offers a survey of Monteverde's protected area history and current conservation issues through insights gained from first-person interviews conducted with 40 area residents between June and August of 2006.

CHAPTER 1

INTRODUCTION

At present, nature conservation depends heavily on protected areas to limit the destruction caused by human activities such as land clearing, logging, and urban development (Terborgh and Van Schaik 2002). Yet despite their importance and widespread use, the general public and policy makers often maintain a simplistic and static conception of protected areas. Often, the mental model of protected areas consists of a “one-size-fits-all” park--a fenced off area of land designed to protect “nature” from humans. In reality, however, protected areas are multifaceted, fluid entities that result from a confluence of people’s ideas about what protected areas are expected to accomplish and for whom they serve. Although protected areas sometimes do take the “fenced-off” approach, they take many other forms: communally held watershed reserves, sacred forest groves, and “sustainable-use” zones, reflecting societal trends in conservation practice. History belies the idea of one “standard” type of protected area for all places and all times (Kalamandeen and Gillson 2007).¹

The area around Monteverde, Costa Rica, offers a distinctive case study of the historical development of protected-area conservation. Monteverde has a unique history of settlement by various national and international groups: Costa Rican farmers, North American Quakers, biologists, and tourism entrepreneurs. It is home to a protected area network that has grown in both area and scope to protect watersheds and regional biodiversity, provide recreation for foreign tourists, and serve the economic needs of local communities (Figure 1-2). The protected area complex was not centrally planned to meet these goals, rather, its growth has been a half-century long process driven by local, national, and international trends in conservation and

¹ Cumming (2004) created a schematic diagram of the concept of expanding roles for protected areas in an African context. See Figure 1-1.

development. Although perhaps exceptional, the Monteverde experience underscores the possibilities and challenges inherent in achieving multiple conservation and economic goals through protected areas. Additionally, Monteverde's history is a demonstration of how large-scale factors such as climate change and economic globalization have powerful impacts on protected areas. Monteverde's story encourages the consideration of how protected areas can be expected to meet complex conservation and social goals given these challenges.

This paper offers a survey of Monteverde's conservation and protected-area history through insights gained from first-person interviews conducted with 40 area residents between June and August of 2006. A diverse cross-section of the local population was interviewed, including Costa Rican farmers, Quakers, conservation professionals, teachers, and tourism entrepreneurs.² The range of histories and viewpoints gleaned from this process reinforces the underlying idea that protected areas represent dynamic and often contested terrain. What may seem at first glance to be a simple study of a mountainous region of Costa Rica is in fact an investigation of the multi-faceted relationship between people, protected areas, and conservation in the 20th and 21st centuries.

Geography

Located between Nicaragua to the north and Panamá to the south, Costa Rica is a relatively narrow country bordered by the Pacific Ocean and the Caribbean Sea (Figure 1-3). It is bisected by a mountainous spine that roughly follows the general northwest-to-southeast orientation of Central America. Although small, Costa Rica experiences huge variations in topography, climate, and rainfall, ranging from humid forested lowlands to tundra-like *páramo* at high elevations in the southern Talamanca Mountains. The country's geographic position as a land

² Although I interviewed a wide range of subjects according to nationality and occupation, the subjects were chosen through snowball sampling, not a random sampling. See Appendix for a description methods and subjects.

bridge between North and South America has promoted the development of a rich floral and faunal assemblage that contains elements of both continents (Stiles and Skutch 1989, pp. 1-19).

The community of Monteverde is located at an elevation of 1450 meters, just below the continental divide of the Tilarán mountain range in north-central Costa Rica. To the west of the divide the land drops off dramatically towards the Pacific Ocean, while the land to the east slopes more gently towards the Caribbean Sea. The mountainous terrain, sharp changes in elevation, and microclimatic conditions create a series of life zones that shift from the relatively dry forests of the Pacific slope to the mist-shrouded cloud forest that straddles the Continental Divide.³ ⁴ The town of Monteverde is located in a transitional zone between the Pacific Slope and the much wetter cloud forest. Monteverde experiences three “seasons”: a dry period that lasts from February to April, a wet period from May to October, and a windy transitional period from November to January. Mean monthly precipitation ranges from a low of 30mm in March to a high of 420mm in October (Clark, Lawton, and Butler 2000).

The forests directly above the town of Monteverde are well-known examples of montane cloud forests. These forests differ from lowland rainforests because they are nurtured by intercepted mist rather than heavy rainfall. The high humidity encourages the growth of innumerable species of mosses and ferns. Cloud forest trees typically carry a heavy load of epiphytes--plants that cling to branches and trunks and provide habitat for countless microorganisms, insects, and larger animals such as amphibians. Montane cloud forests throughout the world are also centers of biological diversity and endemism (Wheelright 2000). In Monteverde the geography and the unique climate have given rise to an enormous diversity of

³ See figure 2 for life zone map

⁴ See Haber (2000, pp. 41-47) for more information on Monteverde life zones.

plants and animals, including the endemic and probably extinct Golden Toad *Bufo periglenes*.

Unfortunately, montane cloud forests are among some of the world's most threatened ecosystems, with a deforestation rate higher than the lowland tropical rain forests which have generally received more attention from conservationists (Nadkarni and Wheelright 2000).

The various published and spoken uses of the term “Monteverde” can be somewhat confusing. Informally, the term is used both for the town of Monteverde, founded by Quaker settlers in 1951, and the geographic area surrounding the town, including the communities of Santa Elena, Cerro Plano, Los Llanos, Canitas, La Cruz, and San Luís. Researchers use the term “Monteverde Zone” to describe a large area of over 27,000 acres that encompasses the Monteverde Reserve Complex: a group of private protected areas including the Monteverde Cloud Forest Preserve, the Children’s Eternal Rainforest, and the Santa Elena Reserve. (Nadkarni and Wheelright 2000; Powell and Bjork 1995). The Monteverde zone can also be thought of as a geographic unit that is tied together by the area’s chief economic activities of dairy farming and tourism. Hence some authors describe the Monteverde “milkshed,” an area extending down either slope of the Continental Divide that is home to the milk producers who supply the Monteverde dairy plant (Griffith, Peck, and Stuckey 2000). Most of the issues discussed in this paper apply not just to the town of Monteverde but to the Monteverde zone as a geographic, social, and economic unit. For simplicity, this paper will generally use the term “Monteverde” to refer to the Monteverde zone, and will use the term “town of Monteverde” to specify the town itself. When discussing the area’s pre-Quaker history, this paper uses the term “Monteverde” to refer to the physical area that the town encompassed before its founding in 1951.

Costa Rican Deforestation

While not a major focus of this study, a brief look at deforestation in Costa Rica, summarized from Evans (1999, pp. 33-42), will help to better understand the conservation responses and protected areas that emerged in Monteverde. Since the 16th century, deforestation has been a result of clearing land for cattle pasture and agriculture but the pace picked up greatly in the 20th century when large areas in the Caribbean and Pacific lowlands were cleared to create banana plantations. Concurrently, land clearing for cattle pasture increased in part in order to feed the growing ranks of plantation workers. Beginning in the 1970s, cattle production sharply expanded to meet a rapidly growing market for beef to supply fast-food restaurants in North America. By 1986 Costa Rica was the top beef producer in Central America, with 96% of its production going to the United States. The politically powerful *Cámera de Ganaderos* (Cattlemen's Trade Association) was very successful at lobbying the government to support beef exports. The government obliged, providing such generous financial incentives for beef producers that many dairy farmers switched to raising beef. The number of cattle raised in Costa Rica increased from 607,850 head in 1950 to 2,050350 head in 1986. Such a level of cattle production required huge expanses of pastureland, which Costa Rica created through systematic deforestation efforts. By 1980 over 6,500 square miles, or about one-third of the country, had been deforested. Much of the pasture was created on land that was not suitable for raising cattle, contributing to erosion and topsoil loss. In addition to deforestation due to the expansion of cattle pasture, Costa Rica also suffered deforestation due to the activities of the logging industry and the subsequent invasions of *precaristas*, or squatters, using logging roads to access forested areas that were burned to make way for small subsistence farms. Due to these factors, Costa Rica in the 1980s was losing four percent of its forests every year, the highest rate for any country in Latin America (Figure 1-4).

The government, for its part, did take small legal steps to address deforestation. In 1969 the *Ley Forestal* (Forestry Law) was passed, establishing the legal framework to establish national parks and monuments, and passing regulations to encourage conservation within the forestry industry. However, these restrictions failed to significantly curtail deforestation outside legal protected areas. Even within protected areas, illegal logging, agriculture, and invasions of squatters were fairly common due to insufficient law enforcement and tacit government support for squatting on “unproductive” lands (Evans 1999, pp. 45–51). In recent years, deforestation in Costa Rica has slowed and even begun to reverse as cattle ranching has become less profitable, and other drivers of land conversion have weakened. A government program, begun in 1997 that pays farmers to maintain forest cover for its “environmental service” values, has possibly played a role by encouraging reforestation (Sierra and Rodrigo 2005). However, remaining intact forests still largely coincide with parks and protected areas, emphasizing their continued conservation importance (Wheelright 2000, p. 420).

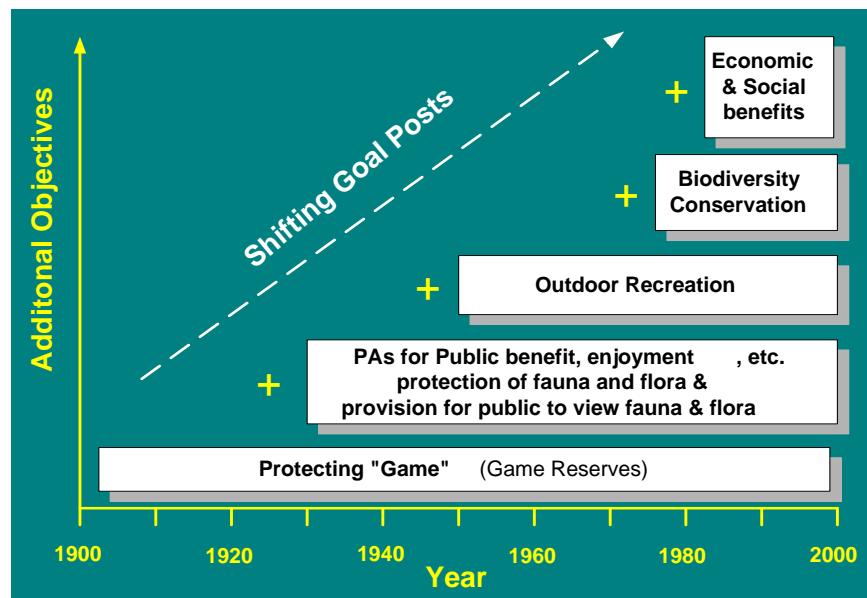


Figure 1-1. Conceptual diagram reflecting the changing objectives and responsibilities of parks and protected areas in southern Africa during the past century. [Reprinted with permission from IUCN 2004. Performance of Parks in a Century of Change. *Parks in transition: biodiversity, rural development and the bottom line*. (Page 107, Figure 5.1). Earthscan, London, England.]

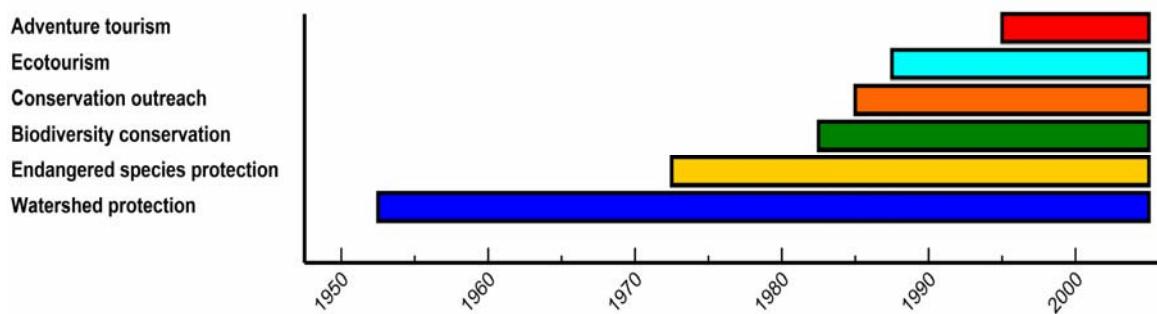


Figure 1-2. Timeline of expanding roles for Monteverde protected areas

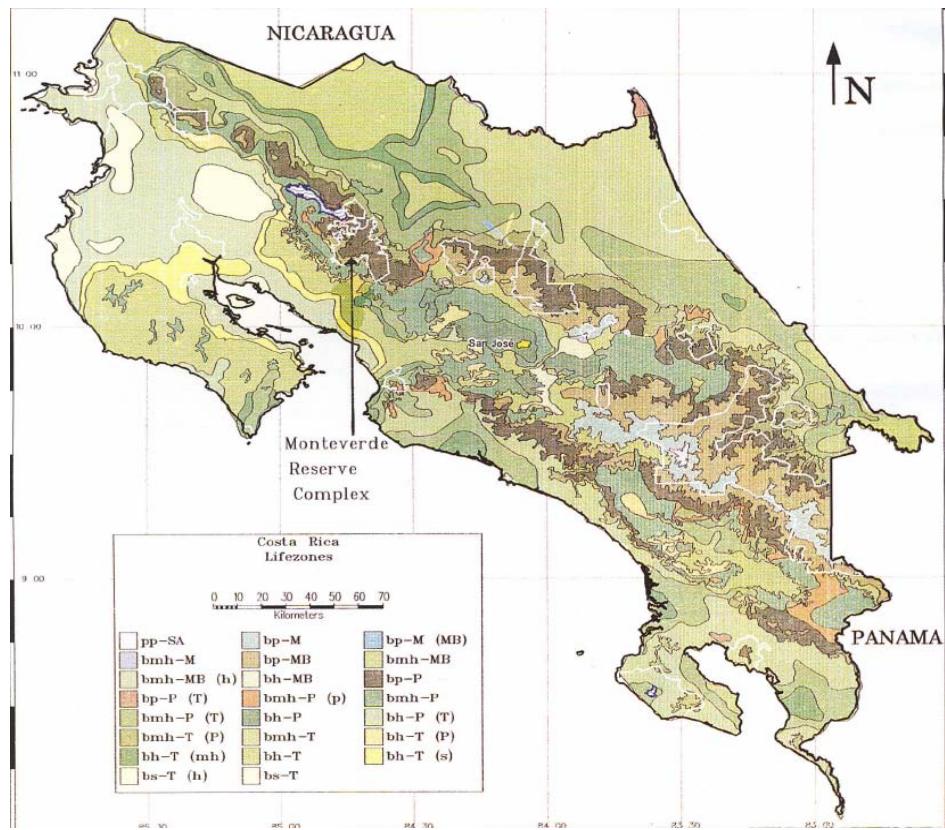


Figure 1-3. Life zone map of Costa Rica showing position of Monteverde Reserve Complex.
 [Reprinted with permission from Oxford University Press 2000. *Monteverde: Ecology and Conservation of a Tropical Cloud Forest* (Plate 8). Oxford University, Oxford, England.]

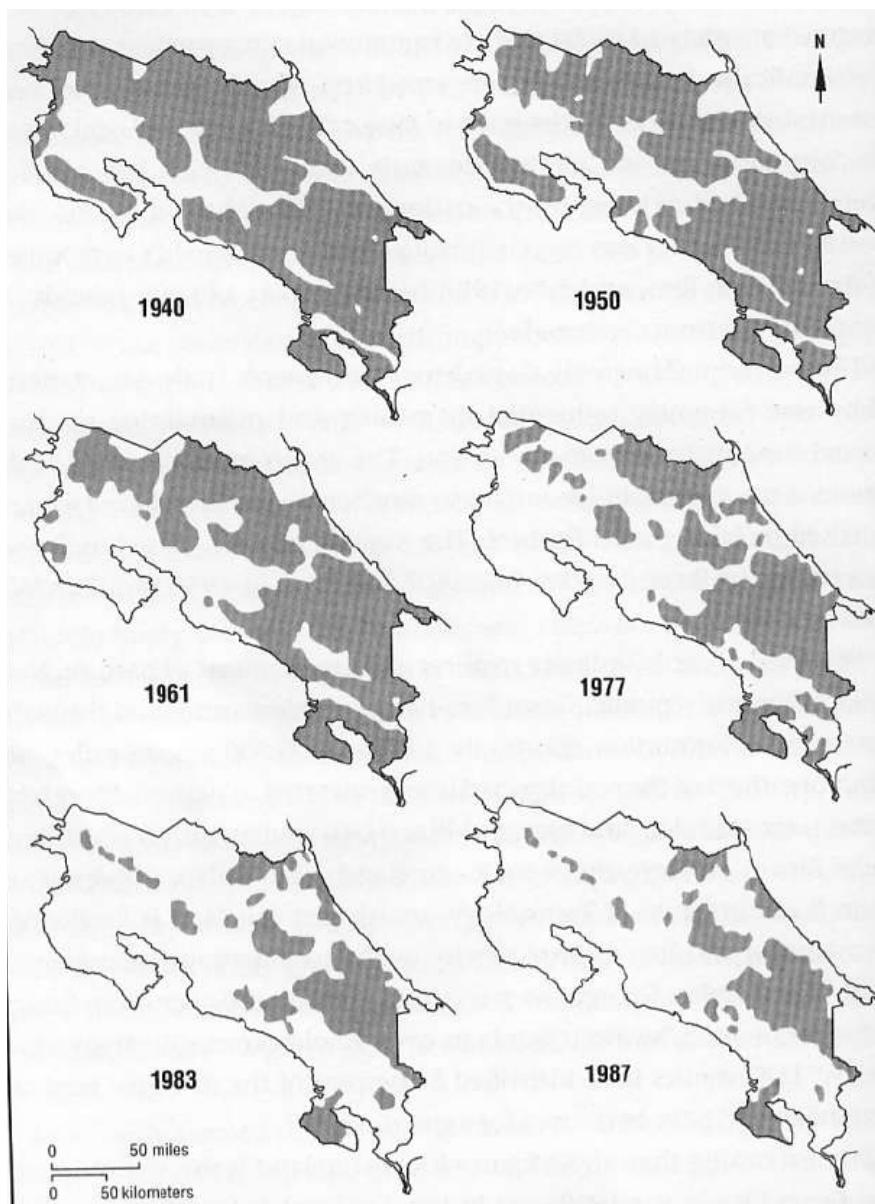


Figure 1-4. Deforestation in Costa Rica. [Reprinted with permission from University of Texas Press 1999. *The Green Republic: A conservation history of Costa Rica* (Page 40, Figure 4). University of Texas, Austin, Texas.]

CHAPTER 2

MONTEVERDE HISTORY

Today, Monteverde and its forests are international tourist attractions that bring in hundreds of thousands of visitors annually, but until the 1970s Monteverde was an agricultural community quite remote from the rest of Costa Rica and the world. The isolated nature of Monteverde has strongly influenced the trajectory of its development, as the community has had to look inward to develop its economy, social institutions, infrastructure, and conservation programs.¹

Although relatively little evidence of their culture remains, the Monteverde region was populated by indigenous groups that practiced hunting and gathering and agriculture for thousands of years, raising tubers, fruit trees, palms, corn, beans, and squash. The original peoples of the Monteverde zone suffered population declines and cultural disintegration due to the introduction of European diseases and warfare (Timm 2000).

During the colonial and post-colonial eras, development in Costa Rica was heavily centered around the capital, San Jose, and in the surrounding Meseta Central. Today, this urban and agricultural core of the country contains about two-thirds of the Costa Rican population (Rachowieki and Thompson 2000). Throughout much of Costa Rica's history outlying areas such as Monteverde were seen as "frontier territory" and maintained much sparser populations.²

Around the turn of the 20th century, prospectors discovered gold in the rivers around Guacimal, a town near present-day Monteverde. The discovery triggered a small-scale gold rush and attracted settlers to the region, who became some of the first non-indigenous residents of the Monteverde area. In subsequent years the Costa Rican government granted the Guacimal Land

¹ J. Stuckey, personal communication, June 30, 2006

² J. Wolfe, personal communication, June 12, 2006

Company, the owner of the gold mine, a large parcel of land that included the present-day towns of Guacimal, Monteverde and much of the surrounding countryside. The company received title to the land as an incentive to build a hydroelectric plant which to supply power to the communities and mines of the region.³ Squatters, mostly former workers in the mines and on farms, began to settle onto company lands; in 1929 the first families arrived in Monteverde and Cerro Plano and began to sell corn, potatoes, sugarcane, homemade alcohol and pigs to miners in Guacimal and Las Juntas. About 175 farmers lived in the Monteverde zone by 1950 (Burlingame 2000).

Settler families cleared forest for small-scale agriculture and pasture for beef cattle. The use of fire, typically during the dry season, was a common way to prepare the land for planting.⁴ Settlers, encouraged by explicit government support for the practice, cleared forest; simply occupying “unimproved” land did not entitle settlers to any legal rights to it. Laws granted ownership rights after one year of occupation and tenure after 10 years to settlers who could show they were using the land in some way, which obliged them to clear and plant at least half of their area (Evans 1999). As evidenced by this law, a strong support for squatter’s rights was a deeply held tradition in rural Costa Rica. In this mindset there was a sense that there would always be more land somewhere else to settle; destruction of forests was the most visible result.⁵

Agricultural settlements were generally small, and individual families lived within a subsistence economy. A real constraint on trade at the time was the poor road conditions; the road to Monteverde from the Pan-American Highway was essentially a narrow oxcart trail until

³ B. Law, personal communication, June 1, 2006

⁴ E. Vargas, personal communication, June 21, 2006

⁵ J. and S. Trostle, personal communication, July 3, 2006

it was “improved” in the 1950s (it still is rather rough).⁶ In addition to agriculture, hunting was an important means of obtaining food, and in the 1930s families hunted tapirs, deer, monkeys, pacas (a member of the rodent family), and birds. By the 1940s the wild animal population had diminished and families began to raise pigs for food (Griffith, Peck, and Stuckey 2000).

Typical families, such as the Arguedas family that arrived in Monteverde in the early 1930s, planted corn, potatoes, plantain and other vegetables, along with sugarcane to make *dulce*, or homemade brown sugar. Monteverde resident Fermin Arguedas remembers that when his grandparents arrived in the 1930s, clearings in the forest were few, and they had to cut trees to plant the first crops. The family, like other Costa Rican families in the area, also raised cattle for beef and milk. The small amount of trade that took place involved *dulce* and wood products milled from a local sawmill.⁷

The arrival of a group of North American Quaker settlers in Monteverde marked a fundamental shift in the region’s development. The Quakers, a Christian sect with roots in 17th-century Britain, maintain religious traditions that stress pacifism, an absence of dogma, and a belief in first-hand, inward experience with God (Weening 1995). Hubert and Mildred Mendenhall, Quakers from Fairhope, Alabama, visited Costa Rica in 1950 and were impressed that the Latin American nation had recently abolished its armed forces. The Mendenhalls, like other US Quakers, were distraught that their economic well-being as US citizens depended on military expenditures during World War II and the Korean War (Mendenhall 1995). They convinced other Quakers from Alabama and Iowa, some of whom had been recently jailed for refusing to register for the draft, to move to Costa Rica. A small group traveled to the Latin

⁶ J. Stuckey, personal communication

⁷ F. Arguedas, personal communication, June 8, 2006

American country to look for land in April 1951. Soon thereafter, a group of 41 North American Quakers, made up of 11 families, left the United States for Costa Rica (Burlingame 2000).

After six months scouting for land, the Quaker families bought a 1,200 hectare parcel at present-day Monteverde from the Guacimal Land Company. The Quakers purchased the land best suited for mechanized farming, at an elevation far enough above sea-level to offer a healthy climate and located in an undeveloped, less expensive area that included uncleared forest (Mendenhall 1995). In 1951, the Quakers made the journey from the Pan-American Highway up the narrow road, widening it along the way to allow for the passage of their jeeps. It was the Quakers who chose the name Monteverde, Spanish for Green Mountain, for the new settlement.⁸

For the first few years, the Monteverde Quakers were essentially living in a subsistence economy. Like their Costa Rican neighbors, they raised beef cattle and planted potatoes, corn, sugarcane, beans, and yucca. The Quakers instituted a system of self-governance, still partially in evidence today, that centers on consensus decision-making. In the early years of the settlement, the Quakers focused on building community infrastructure, such as roads and schools. They engaged in land clearing, although much of the land that they purchased had already been cleared in the years before they had arrived by Costa Rican settlers.⁹

The Quakers soon focused on dairy farming as their principal occupation. Some members of the group came from dairying backgrounds and were familiar with high-production European dairy breeds and management techniques (Griffith, Peck, & Stuckey 2000). Monteverde farmer John Campbell made the first batch of aged cheese in 1953, and later that year the community built a dairy plant, powered with electricity from a newly constructed hydroelectric generator.

⁸ J. and S. Trostle, personal communication

⁹ W. Guindon, personal communication

Cheese became the primary product of the dairy plant, having an advantage over milk since it was less bulky, did not require transport in refrigerated trucks, and could survive the pounding journey over the rough dirt road from Monteverde to the outside world. The Quakers began to market their cheese in San Jose, providing Monteverde with an exportable product and linking the region to a national market for the first time.¹⁰

From the beginning the cheese factory was at the center of community affairs. Income generated from the sale of cheese financed the construction of buildings, such as the Quaker school and meeting house, and allowed for needed road improvements. In Monteverde and surrounding towns, Costa Rican and Quaker farmers oriented their activities towards producing milk to be sold to the dairy plant. Although growing food for home consumption remained an important part of resident activities, the income from milk production became an integral part of family livelihoods and created an economic base for the community as a whole.¹¹ The market for milk also encouraged land clearing for cattle pasture in higher elevation areas such as Río Negro, San Bosco, Las Nubes and San Gerardo. Approximately 40 upland farms (ca. 560 ha of pasture) were established for dairy after 1950 (Griffith, Peck and Stuckey 2000). Although dairy farming in recent decades has shifted geographically to the point that today there are only two producers in Monteverde proper, in 2006, 210 producers in communities around Monteverde continued to supply approximately 4000 kilos of milk a day to the dairy plant.¹²

¹⁰ J. Stuckey, personal communication, June 30, 2006

¹¹ J. Stuckey

¹² J. A. Murillo, personal communication, June 18, 2006

CHAPTER 3

PROTECTED AREAS

Generally this paper uses the term “protected area” to describe land set aside for conservation purposes. However, at times this paper uses the term “park” because this term is commonly used to describe conservation units in many contexts, such as the Costa Rican national park system. This study does not intend to create a clear-cut distinction between the two terms. Rather it aims to demonstrate the malleability of the protected area concept, for example how a protected area initially established for conservation can take on some of the roles traditionally assigned to “parks,” such as recreation and tourism. Other terms such as “reserve” or “preserve” will be used as well, but the context in which they are used should make clear the intended purpose(s) of these areas.

Protected areas have been part of cultures throughout human history. Sacred forest groves, in which use and extractive activities were prohibited, date back to the fourth century B.C. in India, and have been prominent in Russia, Africa, and the Far East. Hunting preserves, most frequently reserved for noblemen, turn up time and time again in various cultures. These reserves could be found in Assyria dating back to 700 B.C., the Persian Empire between 550 and 350 B.C. and in Western Europe during the Middle Ages (Davenport and Rao 2002).

Scholars generally regard the 19th-century beginnings of the US national parks as the starting point for modern protected areas. The national park “Yellowstone Model” possesses several salient features. According to historian Alfred Runte (1979), the early national parks were founded on “worthless land” that had a low value for agricultural or industrial production, hence many US parks are found in mountainous zones far from population centers. Furthermore, parks such as Yosemite and Yellowstone were created to showcase spectacular landscapes. According to Runte, the national park system fed a nationalistic impulse that emphasized the

greatness of the “American Wilderness” (emptied of its native human inhabitants), in opposition to the “civilized” monuments of Europe. By the early 20th century, the National Parks were oriented towards providing tourism to the general public, emphasizing individual natural “wonders” such as geysers or massive trees. Roads and automobile access have been a priority since the 1920s. Although ecological concerns have increasingly come to the fore in park creation and management, national parks are still premised on tourism access, scenic beauty, and a “nature as museum” philosophy. The Yellowstone model has informed the creation of park systems in countries such as Costa Rica, Canada, South Africa, and Sweden (Jones and Willis 2005).

Quaker Watershed Reserve

Perhaps unwittingly, the Quakers initiated the conservation movement in Monteverde and the surrounding area. After arriving in 1951, they divided their land into private lots for each family. They made a group decision to leave the higher elevation, densely forested third of their land uncleared and undeveloped as a communally owned forest reserve. A number of motivations lay behind this decision, but it is important to understand that the Quaker settlers were not “conservationists” as the term is understood today. The concerns of day-to-day survival were first and foremost on settlers minds; having enough food to eat was not always a given during the first years of settlement.¹ Like their Costa Rican neighbors, the Quakers relied on pasture for agriculture and cattle grazing, hence the plots that had already been cleared prior to the Quaker arrival held more value than forested land.² Given this understanding, some Monteverde residents suggest that the decision to create the forest reserve was not about

¹ J. and S. Trostle, personal communication

² J. Wolfe, personal communication

conservation but rather a reflection of the simple fact that the reserve land is steep, very wet, not well-suited for production, and was therefore simply left in its forested state.³ In this motivation one hears an echo of Runte's "worthless land" idea.

However, Quaker traditions, dating back to the eighteenth century, do stress land conservation. Kelly (1985, p. 250) suggests that, in opposition to mainstream Christian worldview, a "distinctive Quaker ecological attitude toward nature encapsulating benevolence to all living things and custodianship to God in the conservation of land reminds us of the diversity of ecological perspective within the Christian community". Kelly (1986, p. 263) also emphasizes the eighteenth century Quaker affinity for the ecological worldview of American Indians, citing Quaker Anthony Benezet: "[Indians cultivate] no more land than is necessary for their plentiful subsistence, and hospitality to strangers." Benezet argued that Europeans ought to live on the land in a "compact," economical fashion, cultivating the earth lovingly and efficiently to the service of its divine master (Kelly 1986, p. 264).

These traditions may have inspired the actions of a few Monteverde Quaker settlers. John Campbell, who initiated the production of Monteverde cheese in 1953, decided to leave over 2/3 of his original property in forest and for doing so was called "impractical" by his neighbors.⁴ The Quakers who came from farming backgrounds understood the importance of forest cover in maintaining water supply and may have been influenced by observing damaged watersheds on recently settled deforested land near Monteverde. Some settlers had experience with hydro power and had plans to use the stream-flow from the Guacimal River, originating in the cloud forest, to power a community sawmill and hydroelectric plant.⁵ Furthermore, the Quakers wished

³ B. Law, personal communication

⁴ M. Campbell, personal communication, June 26, 2006

⁵ B. Law

to maintain their household water quality as all water came from streams originating in the forest.⁶

Given this perspective, the creation of the watershed reserve represents a very “practical” conservation orientation of the original settlers. The protection of scenic beauty, wilderness, endangered species, or biodiversity was not a goal of the Quaker reserve, but rather the reserve was meant to serve the day-to-day needs of the community. In this sense the Quaker reserve shares some similarities with historical protected areas such as *hemas*, traditional community-managed lands of Saudi Arabia. Various types of hemas regulate grazing rights and sometimes prohibit the cutting of trees (Saleh 2000). Another precursor to the Quaker reserve is Yosemite National Park, which was established in the 1890s partly to protect the watershed for downstream farming activities (Davenport and Rao 2002, p. 34). Similarities can also be drawn between the Quaker reserve and the US National Forest system pioneered by forester Gifford Pinchot early in the 20th century. Although the national forests stress active management much more than the Quaker reserve, both emphasize the practical aspects of resource conservation—the national forests were originally set aside to protect water for urban and agricultural uses (Kalamandeen and Gilson 2007).

Regardless of historical precedent, when the Quaker farmers established their reserve in 1951, the action represented a departure from Costa Rican tradition. Although the Quakers prioritized water conservation over wildlife, they nevertheless wanted to protect the reserve from hunting or development. However, government support and cultural traditions discouraged land conservation in rural Costa Rica in the 1950s. Quaker settler Wolf Guindon remembers how hunters seeking game continually entered the reserve from the surrounding settlements.

⁶ W. Guindon, personal communication

Additionally, squatters entered the reserve to clear forest and gain title to the “unused” land. The Quakers took it upon themselves to patrol the reserve and educate their neighbors about its protected status, and eventually initial conflicts between the Quakers and members of the squatter settlements decreased.⁷ Community patrols by unarmed guards have played an important role in the protection of the Monteverde reserves and the eventual willingness of residents to accept the reserve’s legitimacy (Honey 1999). Today, incursions into the Quaker reserve and other Monteverde protected areas are much less common and for the most part Quakers and Costa Ricans work together to support local conservation efforts.

The difficulties faced by the Quaker reserve are shared by historical and contemporary protected areas. In rural societies throughout the world, protected areas face varying degrees of non-acceptance from people who depend directly on local natural resources for their livelihood (Terborgh and Van Schaik 2002). It can be argued that the parks idea, developed in an era of rapid urbanization in the United States, represents a foreign concept when imported into agricultural societies. However, the concept was not accepted wholeheartedly even in the United States. During Yosemite’s early years, the park faced considerable local opposition and suffered abuse by poachers and commercial interests, a problem common to many parks (Davenport and Rao, p. 34). US park creation was also heavily constrained by commercial interests. In case after case, congressional approval for new national parks was only granted after boundaries were drawn to explicitly exclude any land that included exploitable resources such as minerals or timber. Furthermore, Congress retained the right to reopen parks to exploitation in the future if mineral resources were discovered after the park was established (Runte 1979). The unwillingness to restrict consumptive land uses can help explain at least part of the difficulties

⁷ W. Guindon, personal communication

parks have frequently faced in rural and newly industrializing societies. However, it does not address the impulse behind protected area creation in agricultural societies, such as with Saudi Arabian Hemas or the Quaker reserve. Clearly, the Yellowstone model, emphasizing spectacular scenery and tourist access, does not encompass the full range of motivations for protected area creation, nor does it represent the variety of uses for protected areas seen throughout history. Protected areas such as the Quaker reserve are examples of a rural society (albeit not an indigenous one) implementing a protected area at the community level.

Monteverde Cloud Forest Preserve

The Monteverde Quaker settlers strove to establish a self-sufficient, independent community. For most of the first two decades after the group arrived, visitors consisted primarily of friends and family members willing to make the arduous journey up the steep and still primitive road.⁸ At this time Monteverde was not well known in Costa Rica or internationally. However, beginning in the 1960s, scientists came to Monteverde to conduct research and began to publish papers about their findings. The unique ecology of the cloud forest and the presence of a supportive English-speaking community attracted significant numbers of biologists, primarily from the United States; scientists from the Organization for Tropical Studies first arrived in the early 1960s to study species such as the endemic Golden Toad (Honey 1999). Researchers also began to publish papers on the distinctive birdlife of the cloud forest, piquing the interest of ornithologists and a growing number of serious birders (Burlingame 2000). A relatively large number of these scientists decided to move to Monteverde to continue their “field work” full time. Many of the scientists brought with them a dedication to conservation that has strongly influenced the general outlook in Monteverde.

⁸ J. and S. Trostle personal communication

One researcher, University of California graduate student George Powell, arrived in Monteverde in 1970 to study mixed-species bird flocks of the cloud forest. He performed his research on the partially forested farm of John and Doris Campbell, two of the original Quaker settlers. During the course of his studies, Powell became very concerned with a rapid increase in deforestation caused by homesteaders clearing land owned by the government and the Guacimal Land Company. Impressed by the Quaker's watershed reserve, Powell decided to protect what he could by buying out the squatters on the government land. Additionally, the Guacimal Land Company agreed to donate a parcel of its land, the only known breeding habitat for the Golden Toad, if Powell could find an organization that was legally recognized in Costa Rica to own and manage the land. In 1972, Powell approached Leslie Holdridge and Joseph Tosi of the Tropical Science Center (TSC), a Costa Rican non-profit based in San José that focuses on scientific research and education. The TSC agreed to assume ownership of the land that became the Monteverde Cloud Forest Preserve (MCFP). Fundraising campaigns led by Powell targeted international organizations, such as World Wildlife Fund and the Nature Conservancy, raising funds which allowed the TSC to increase the size of the Preserve. In 1975, the Quakers agreed to lease their watershed reserve land, adjacent to the MCFP, to the TSC. The Quakers, under an ownership group called Bosqueterno (forest forever), maintained ownership over their reserve but the land came to be managed as a unit of the MCFP. Today, the MCFP contains 10,500 hectares (Burlingame 2000; Tropical Science Center).

Costa Ricans and Quakers have pointed to the arrival of biologists as the primary factor in fostering a conservation ethic in Monteverde. Quaker settler Wolf Guindon, who worked with George Powell during the expansion of the MCFP and became an ardent supporter of conservation, explains that he did not arrive in Monteverde with this attitude. Guindon recalls

that in the early years of Quaker settlement, he thought of himself as a “chain saw expert” and that his “vision of development was clearing pastures and building roads and schools” (cited in Honey 1999, p. 152). It was only after meeting Powell that Guindon began to develop an enthusiasm for preserving the local biota. Through his work in support of the protected areas, Guindon has become the most respected guard in the MCFP and as a main force in support of Monteverde protected areas.⁹

The MCFP in Context

The Quaker watershed reserve and the Monteverde Cloud Forest Preserve, separated in time by nearly 20 years, represent two distinct ideas in protected area creation. The Quaker reserve has its origins in the practical needs of a small dairy-farming community, while the MCFP can be linked to international and Costa Rican movements to protect tropical forests, endangered species, and biodiversity. Here we will examine the contexts in which the MCFP was created.

In the 1960s, the environmental movement in the US and Europe began to criticize the generalized damage to the natural world that was being driven by modern society. Rachel Carson introduced ecological concepts to mainstream audiences with her book *Silent Spring* (1962), highlighting the perils faced to human health and the natural world through an over-reliance on chemical pesticides. The core ideas of ecological thinking began to become more widely accepted. Park management began to reflect ecological concepts, as can be seen in a shift in the management of US National Parks that had begun earlier in the century; the creation of Everglades National Park in southern Florida in 1934 was the first example of a national park created to preserve “biology” (Runte 1979). Scientists guided the US National Park System

⁹ J. and S. Trostle, personal communication

towards the conservation of ecosystems and the protection of rare native organisms rather than just the earlier emphasis on protecting spectacular landscapes (Jones and Willis 2005).

Also in the US, the development of endangered species legislation in the late 1960s and early 70s highlighted a growing recognition that humans have a responsibility to protect threatened flora and fauna throughout the world. The Endangered Species Act of 1973 set limits on the destruction of habitat on public or private lands. In the same year, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed in Washington, DC. The convention restricts international commerce of flora and fauna which might be harmed by trade (US Fish and Wildlife Service).

In this period parks began to be seen as places to safeguard the habitats of endangered species. In the course of studying specific species of plants and animals, scientists became aware that many tropical forests were being destroyed and that vulnerable species could be pushed to extinction if their habitat was not preserved. Protected areas were seen as important tools in the emerging science and practice of conservation biology (Wheelright 2000). In the case of Monteverde, George Powell recognized that to maintain a population of Golden Toads, critical cloud forest breeding habitat needed to be protected from destruction (Tropical Science Center). Thus the creation of the Monteverde Cloud Forest Preserve is directly connected with efforts to protect habitat for animal species threatened by deforestation. It is important to note that in this stage in Monteverde conservation, the basic goal of the protected area was to protect wildlife from agricultural encroachment. It would be left to future developments in Monteverde conservation to attempt to engage farmers as allies, rather than adversaries, in conservation.

The Monteverde Cloud Forest Preserve can also be placed in the context of park creation in Costa Rica. Throughout the 20th century, parks sharply increased in numbers throughout the

world, and Costa Rica became a leader in the establishment of protected areas. Beginning with the creation of historic Santa Rosa National Monument in the northwestern province of Guanacaste, Costa Rica embarked on a major park-making push in the 1960s and 70s. Although some parks, such as Santa Rosa, highlighted historical monuments, Costa Rica focused on creating parks that represent most of the country's geographic zones (Evans 1999, p. 11). Parks director Mario Boza emphasized how Costa Rica would pursue a parks program that, rather than simply protecting areas of scenic beauty, would preserve the diverse flora and fauna of Costa Rica (Wallace 1992). Thus the Costa Rican national park system was launched with ecological goals from the beginning. Although not a governmental project, the MCFP paralleled the development of the national park system at a time of rising consciousness of the importance of preserving Costa Rica's biological heritage.

Notably, the MCFP was supported by international efforts from the beginning. In the early 1970s US-based conservation organizations began to take an active role in conservation efforts in the tropics. In its first international conservation effort, The Nature Conservancy contributed funds towards the creation of the MCFP. George Powell also raised \$75,000 from the World Wildlife Fund-US, stressing the Preserve's importance in preserving habitat for the Golden Toad, Resplendent Quetzal, Bare-Necked Umbrella Bird, tapir, and wild cats (Burlingame 2000).

Like the Quaker watershed reserve, the Monteverde Cloud Forest Preserve was in general poorly received by its Costa Rican neighbors during its early years. In 1972, when the MCFP was established, land conservation still was not recognized as a legitimate activity under Costa Rican law. The early managers of the MCFP had to register the reserve under a forest-management law that required them to state that they would carry out selective logging sometime in the future (Powell et al. 2002). Hunters continued to pursue game in the MCFP land as they

had on the Quaker watershed reserve, and many scorned the philosophy of conservation represented by the MCFP. Residents of nearby San Luís remember that for the first several years, local hunters would deliberately hunt and fell trees within the Preserve in to demonstrate their unwillingness to support the protected area.¹⁰

The Monteverde Conservation League, Expanding Conservation

During the 20th century, the rapid deforestation in Costa Rica as a whole was also occurring in the Monteverde zone. The forests of the Pacific slope below the town of Monteverde had been steadily fragmented since the mid-1930s, primarily to make way for cattle pasture and an expanding human population. By the 1980s, the once-continuous forest only existed as a chain of islands in a sea of pasture grasses (Wheelright 2000). Biologists were becoming aware of the conservation value of these Pacific slope forests, as they contain high diversity of fruit-bearing trees and are relied upon by frugivorous bird species such as the Three-wattled Bellbird *Procnias tricarunculata* and the Resplendent Quetzal *Pharomachrus mocinno* (Guindon, C. 2000).

In 1986, a group of conservation-minded Monteverde residents formed an organization, the Monteverde Conservation League (MCL), with the goal of protecting these threatened forests. The members of the League, many of whom were North American scientists, recognized that the San José-based Tropical Science Center was not willing or able to act on conservation concerns outside the boundaries of the Monteverde Cloud Forest Preserve. The League members saw the need for an organization that could raise money to conserve land outside the MCFP, although they planned to donate land to the Tropical Science Center once it was purchased. Though the League was initially founded to protect land on the Pacific slope, an unfolding threat on the

¹⁰ G. Leiton, personal communication, July 27, 2006; G. Lobo personal communication, July 21, 2006

Atlantic side of the Continental Divide quickly became the focus of the new organization. In the 1970s increasing numbers of settlers had begun moving into the Peñas Blancas valley, triggering an increase in deforestation. By the 1980s, some settlers had begun to construct a road through the MCFP with the aim of facilitating development of the valley (Burlingame 2000).

Government activities also created an opportunity for the Monteverde Conservation League. The Costa Rican Electric Company (I.C.E.), a federal agency, had constructed a dam seven kilometers to the west of Lake Arenal, creating a 30-kilometer lake as storage for the country's largest hydroelectric project. In 1977, the government declared a conservation area, including the Peñas Blancas valley, around Lake Arenal to help protect the watershed that drained into the lake. The government declared that the settlers in the conservation area could no longer develop the land, but promised to buy them out as soon as possible. However, by 1986 the money to do so had not materialized. The newly formed Monteverde Conservation League seized the opportunity to purchase the land from the Peñas Blancas settlers. Most settlers were eager to sell their land to the MCL because otherwise they would be left holding land that they could not develop. Furthermore, many did not intend to farm the wet and steep terrain, but instead had begun to clear forest with the goal of obtaining title to the land, or in some cases to provoke the government to recognize their predicament (Vivanco 2002).

In the mid 1980s, land in the Peñas Blancas Valley was relatively inexpensive--land that today is upwards of \$1000 per hectare could be bought for an average price of \$35 per hectare (Vivanco 2002). The founders of the Conservation League were able to raise money by offering slide shows to the tourists who had begun to visit Monteverde and stay in local hotels.¹¹ The land purchased in this campaign became the nucleus for a large protected area, the Children's Eternal

¹¹ K. Masters, personal communication, July 5, 2006

Rain Forest. The impetus for the Children's Forest came from a US biologist, Sharon Kinsman, who lived in Monteverde and visited Sweden in 1987. She was invited to give a slide presentation about Monteverde to a Swedish school, where students came up with the idea of raising money to help protect Monteverde forests. Kinsman put the students in contact with the Monteverde Conservation League, and the students raised money to purchase 6 hectares near the Cloud Forest Preserve. Subsequently, Kinsman and her husband formed a Swedish non-profit to raise and channel funds to the MCL's campaign to protect land in the Peñas Blancas Valley. Along with other international organizations, the non-profit has raised significant funds to purchase land near Monteverde. Money raised through debt-for-nature swaps also played a major role in both the expansion of MCL and the Children's Forest. By 1998 the Children's Forest totaled over 18,000 hectares, the largest private reserve in Central America. Donations to purchase land have come from individuals, schools and foundations from more than 40 countries (Burlingame 2000). The advent of the Children's Forest dramatically expanded the role of international fundraising that had begun with George Powell and the Monteverde Cloud Forest Preserve.

The expansion of the Monteverde Protected Area Complex can be seen as a scaling up of the conservation that began with the Monteverde Cloud Forest Preserve. While The MCFP was focused on the protection of individual species such as the Golden Toad and the Resplendent Quetzal, the growth of the Children's Forest grew out of an international interest in protecting tropical forests and the biodiversity that is contained within them. In the late 1980s and 1990s, the Monteverde Conservation League became the nexus of sizeable fundraising efforts directed at conservation groups such as WWF and other US, Canadian and European sources. The success of the fundraising can be attributed to the influx of well-connected biologists and

volunteers that had founded the MCL. Additionally, the growth of the Children's Forest reflected a surge in "save the rainforest" campaigns throughout the world and the MCL was well-positioned to capitalize on the sudden interest (Vivanco 2002).

The founders of the Monteverde Conservation League also saw the organization as filling an important need in the local community and region. In 1991, MCL members described the League as the "local conservation group in the Monteverde zone . . . that has the responsibility of communicating the local, regional, national, and global conservation perspectives to the surrounding communities." MCL members also claim to "identify the socio-economic obstacles that are blocking sustainable land use, and look for ways to remove those obstacles" (Vivanco 2002, p. 225).

Conservation Outreach

The land purchase campaigns spearheaded by the MCL were not carried out without conflict, as some Monteverde area residents resented internationally-funded conservation organizations buying land and restricting the activities of local farmers.¹² The Peñas Blancas "squatter emergency" that gave rise to the MCL's land purchase campaign was a strong motivation for conservationists to gain the support of agriculturalists. Thus, the MCL began outreach programs with farmers in the mid 1980s. The most visible and successful of these projects has been the windbreak project for area dairy farmers. The heavy winds that arrive during the dry season in the Monteverde zone negatively affect milk production by stressing cattle and pasture grasses, so there was already a strong desire amongst farmers to plant tree windbreaks which would increase their yields. The MCL capitalized on this desire and provided free tree seedlings and technical assistance to farmers in exchange for their labor in planting and

¹² See Vivanco (2002) for a more detailed discussion of the conflicts stemming from the land purchase campaigns.

caring for the trees. By 1994 over 500,000 native and exotic trees had been planted by 263 farmers in 320 windbreak projects (Burlingame 2000). Biologists have documented how the windbreaks act as biological corridors for many bird species, justifying their conservation value (Nielsen and DeRosier 2000). Originally, fast-growing exotic species such as cypress (*Cupressus lusitanica*) and casuarina (*Casuarina equisetifolia*) were planted, but the MCL began to research and encourage the use of native tree species. Consequently, natives and naturalized exotics including Colpachi (*Croton niveus*) and Tubú (*Montanoa guatemanlensis*) became favored windbreak trees (Burlingame 2000). Many area farmers have emphasized how the windbreak program has directly benefited their production, provided an important source of wood on their property and increased their support for forest conservation.¹³

The MCL has also pursued the general goal of protecting the buffer zones around the Monteverde Reserve Complex through other community conservation projects. The El Buen Amigo cooperative in San Luís and the Forests on Farms and Corridors Project promoted sustainable land use and conservation of local forests and helped to protect forest fragments on farms that border the reserve complex (Burlingame 2000). This more holistic vision of conservation represents a broadening of conservation goals of earlier decades. The founding of the Monteverde Cloud Forest Preserve in 1972 was an effort to protect endangered species against rapid agricultural development. During the 1980s an increased awareness of the need to involve local people in conservation became an important part of the effort to protect Monteverde forests.

¹³ G. Leiton, personal communication; G. Lobo, personal communication; O. Salazar, personal communication, July 21, 2006

Conservation Outside Reserves, Limits to Protected Area Conservation

Monteverde's protected areas have been undeniably successful in protecting forest that otherwise would have been destroyed. However, Monteverde's experiences with conservation have demonstrated the limits to a protected area model that preserves land without considering larger ecological contexts. Research has highlighted how migrating species rely on land that is found both inside and outside of Monteverde protected areas. George Powell, who initiated the Monteverde Cloud Forest Preserve in 1972, has researched the complicated seasonal migrations of the Three-wattled Bellbird (*Procnias tricarunculata*). One of Central America's largest frugivorous birds, this species has the most complex migratory pattern yet recorded for a tropical species. A study of the migration route, revealed by radio telemetry of individual birds, showed that bellbirds spend 2-5 months in four distinct life zones during their annual cycle (Powell and Bjork 2004). A radio-telemetry study revealed that following the breeding season in the forests near the continental divide, the birds migrate down the Pacific slope to feed in small forest fragments on private farms. From these fragments, the bellbirds make their way across the continental divide where they spend September and October in the lowland Atlantic forests of southeastern Nicaragua and northeastern Costa Rica. In November and December the birds return to the Pacific slope to utilize forest remnants along the Pacific coast of southwestern Costa Rica. Finally, in June and July the bellbirds find their way back to their breeding grounds in the cloud forests high on the Atlantic slope of the Tilarán. Unraveling this complex annual migration cycle has demonstrated the shortcomings of the Monteverde Reserve Complex. The complex, a parcel of land centered around the continental divide, is not sufficient to protect habitat for the wide-ranging bellbird and other migratory species (Powell and Bjork 2004; Powell et al. 2002).

Furthermore, the fate of the Pacific slope forests themselves is intimately tied up with the survival of the bellbirds. The bellbirds play a significant role in the regeneration of the trees in

the *Lauraceae* (avocado) family. This plant family is represented by more than 70 species of trees in the Monteverde region and 130 in Costa Rica, and species in this family are the most common canopy trees in a range of forest types across many life zones. Bellbirds, heavily reliant upon the fruits of Lauraceae trees, swallow the large fruits whole, then regurgitate the seed some distance from the parent tree. The birds migrate down the Pacific slope as the season progresses to take advantage of ripening Lauraceae fruits at different elevations. Because these fruits are the most important food source for bellbirds and bellbirds are the most important seed dispersers of Lauraceae trees, scientists recognize that their conservation is tightly linked. In other words, by not protecting Lauraceae trees across the migratory range of bellbirds, the forests themselves may be at risk even if they are not physically cut down as the major canopy trees lose their ability to disperse seed (Powell and Bjork 2004). This understanding of the ecological relationships further underscores the importance of protecting land outside of the Monteverde reserves.

Conservation organizations including the Monteverde Conservation League are purchasing land and working with landowners to encourage the protection and regeneration of private forests, but with high land prices it is a challenging process. The Monteverde Conservation League has been working with the Tropical Science Center to develop a biological corridor that extends from Monteverde down to the Gulf of Nicoya on the Pacific coast of Costa Rica. Those involved in the project have been relying on donations from North American visitors to raise funds for land purchase. Conservationists have found that landowner expectations of large profits to be gained from selling land to foreigners have fostered a reluctance to sell to conservation organizations.¹⁴ Regardless of the challenges involved, the recognition that the needs of wildlife

¹⁴ D. Wilson, personal communication, August 3, 2006

species require connectivity between different landscapes and ecosystems represents an enlargement of the protected area concept. Conservationists recognize that it is no longer sufficient to simply protect a plot of land and simply assume that all ecological processes will remain intact.

Research of the Golden Toad, carried out by Monteverde herpetologist Alan Pounds and other scientists, further illustrates the challenge of relying on protected areas to safeguard threatened species. The Golden Toad was extensively studied in its cloud forest habitat in 1987; it was determined that the toads were never very common but were quite conspicuous near breeding pools during a few weeks in April. The following year, only 10 toads were found during the entire season, and none have been seen since 1991. The rapid disappearance of the toads quickly became the focus of research efforts. Using local climatic data going back decades along with modern measurements, some scientists concluded that the amount of mist precipitation feeding the cloud forests had decreased markedly over the past several decades. In addition, it was observed that the layer of life-giving mist had increased in average elevation as the number of dry days had increased. Both of these effects have been attributed to human-induced climate change and possibly deforestation. Pounds has implicated a chytrid fungus as a possible proximate cause of amphibian mortality, hypothesizing that the lethal skin fungus has become more harmful to the toads as the climate warms (Pounds, Fogden, and Campbell 1999).

The Golden Toad case emphasizes the importance of understanding ecosystems as dynamic and changeable rather than static and stable. Understandably, the hope was that by creating the Cloud Forest Preserve the plants and animals within its boundaries would be well protected for the foreseeable future. In this case the Preserve may not have saved the Golden Toad because global problems like climate change do not discriminate between protected and

non-protected land. Montane systems such as Monteverde are especially vulnerable to these effects because the unique ecosystem near the top of the Continental Divide cannot climb any higher as the climate warms and biotic zones “migrate” up mountainsides. Conservationists are now attempting to create reserves that are linked and, at least in theory, will allow for the movement of species as the climate warms, although no corridor would allow mountaintop biomes to extend forever upward.

CHAPTER 4

TOURISM

Today, any visitor to Monteverde will be struck by the ubiquity of tourist attractions in the region. Forest canopy walkways, zip lines, butterfly gardens, and reptile and amphibian zoos all compete for the attention of the 180,000 tourists who are reported to visit Monteverde each year (Monteverde Tourism Council 2005). The growth of tourism has engendered a fundamental shift in economics, conservation, and protected-area use in the Monteverde zone.

Much has been written about the distinction between *tourism* and *ecotourism*. The Ecotourism Society has defined ecotourism as “Responsible travel to natural areas that conserves the environment and improves the well-being of local people” (cited in Honey 1999, p. 6). The definition implies that conventional tourism does not necessarily support conservation or local people. Although Monteverde is sometimes hailed a successful and clear example of ecotourism, the degree to which Monteverde tourism supports conservation and local people is not cut-and-dry. In this paper, the “tourism era” is contrasted with earlier periods when agriculture was still the main economic driver. Tourism is examined as a phenomenon that has impacted communities, the practice of conservation, and the protected area network; evaluating if tourism in Monteverde meets the criteria of “real” ecotourism is not a primary focus of this study. Therefore, this study does not always make a clear distinction between the terms *tourism* and *ecotourism*.

The growth of tourism in Monteverde mirrors the larger development of the industry in Costa Rica. As recently as the early 1980s, Costa Rica was not particularly visible on the international tourism circuit, surpassed by traditional destinations, such as the Galapagos and the game preserves of East Africa. However, in the past 25 years, Costa Rica’s small size, biodiversity, relative political stability, and welcoming attitude towards foreigners have pushed it

into the forefront of the tourism industry (Honey 1999). In 2005, the latest year for which data is available, over 1.6 million tourists visited Costa Rica (ICT 2005). In 1992, tourism became Costa Rica's largest industry, eclipsing the traditional agricultural exports bananas and coffee (Wearing & Neil 1999, p. 88). In 2005, Costa Rican tourism earned over 1.5 billion dollars, far above the 482 million earned from bananas and the 233 million earned through coffee in the same year. In addition, since the late 1980s, tourism revenue has experienced rapid growth while that from agricultural exports has been stagnant or falling (ICT 2005). Tourism in Costa Rica has benefited enormously from the presence of the national park system and private reserves such as those found in Monteverde. In 2001, the latest year for which statistics are available, 58.4% of all US visitors to Costa Rica had visited a national park, nature reserve, or wildlife refuge (ICT 2001). Nature tourism has grown to the point that it has become part of Costa Rica's national consciousness and has helped create the self-image that many Costa Ricans have of their place in the world (Honey 1999, p. 132).

Tourism and Monteverde protected areas

Monteverde tourism emerged from modest beginnings. From the 1920s to the 1970s, Costa Rican and Quaker dairy farmers lived in a relatively self-reliant agricultural community that was not very visible either in Costa Rica or internationally. Visitors came to Monteverde starting in the 1950s, but at this stage most were guests of the Quakers, and all had to be motivated enough to make the trek up the frequently impassable dirt road from the Pan-American Highway. A small pension was built in 1952 and a field station at the Cloud Forest Preserve provided for students and scientists beginning in the 1970s (Honey 1999, p. 154). In 1974, when the Preserve was first opened to the public, it welcomed 471 guests. Visitors, mostly research scientists, had to accept relatively primitive conditions at the field station or in the town's only hotel. As word of the Cloud Forest Preserve slowly filtered out to the wider world, a small but dedicated group

of serious birders began to make the journey to Monteverde in search of species such as the charismatic Resplendent Quetzal. Monteverde became better known to the general public through positive magazine articles and a BBC documentary film aired in 1978. Tourism numbers began to grow rapidly starting in the early 1980s: in 1980 there were 3,257 visitors; in 1983, there were 6,786; and in 1985, there were 11,762. The early 1990s saw an even more dramatic increase in tourism numbers with a growth rate of 50% per year; by 1992, the number of visitors reached 50,000 per year (Honey p. 152).¹

Until the 1990s, the Monteverde Cloud Forest Preserve was the only tourist attraction in the area. The Tropical Science Center (TSC), the organization that owns and manages the MCFP, was caught off-guard by the tourism influx. As the MCFP was established for biodiversity protection and research, TSC had to suddenly build a functioning tourism infrastructure where there was not one before. The organization hired and trained naturalist guides, demarcated and reinforced a “visitor-friendly” area of trails near the reserve entrance, and opened an information center and gift shop. TSC also began to raise entrance fees. The entrance fees at the reserve, \$2.75 per person in the 1980s, have been raised to \$27 per person (a foreigner, with a guided tour) today. Costa Rican nationals and Monteverde residents are charged much less (Tropical Science Center). The Preserve’s income grew from \$10,000 in 1983 to \$850,000 in 1994—more income than from all of Costa Rica’s national parks combined in the same year (Honey 1999, p. 153). The TSC reinvests most of the revenue into administration, park maintenance and other services at the Preserve (Aylward et al. 1996).

The huge increase in tourist numbers has been a mixed blessing. The TSC released its “Master Plan for Monteverde Cloud Forest Preserve” in 1991, forecasting an increase to 135,000

¹ See figure 4-1

visitors per year by the late 1990s. The general reaction of the Monteverde community to the plan was strongly negative; many were deeply concerned that such levels of tourism would have a negative impact on quality of life in the Monteverde zone (Lee 1991). The TSC subsequently agreed to a more modest increase in visitation and instituted a cap of 100 visitors at a time in the reserve (later increased to 120). For several years tourist numbers held steady at around 50,000 per year, but, recently visitation has crept upward, reaching almost 77,000 in 2005 (Centro Científico Tropical 2006).

Tourism is concentrated in about 10% the Preserve area, and clearly the MCFP continues to supply the environmental services of watershed protection and biodiversity conservation. However, tourism has become a central “product” of the Preserve. Tourism more than adequately funds the operations and management at the reserve itself,² and some of the funds also find their way to TSC headquarters San José for other projects. In the shift from the earlier Quaker watershed reserve to the tourism-fueled MCFP, there has been a change in how the Monteverde protected areas reflect the priorities of their changing user groups and constituencies. The Quaker reserve, integrated into the practical economic fabric, served the practical needs of the community that set it aside. With the advent of tourism in the MCFP, the seeds are planted for the transition to the cloud forest becoming a regional income source and a place for outsiders to visit. As the protected area constituency has become urbanized and globalized, the cloud forest has been turned into a distinct natural “world” that has gained value as a refuge for tourists.

The TSC has a mixed record of community relations in the Monteverde area. Partly due to the “absentee landlord” aspect of the TSC, there remains a sense today among some community

² R. Bolaños, personal communication, June 8, 2006

members that the organization is unresponsive to the needs of local residents. This sentiment, along with the simple fact that the MCFP was becoming “saturated” with tourists, was behind the opening of the Santa Elena Reserve in 1992 (Wearing and Neil 1999). Located about 5 km from the town of Monteverde, the town of Santa Elena has grown quickly and is now the largest population hub in the area. In the early 1990s, visitation to the Monteverde Cloud Forest Preserve was increasing dramatically but many Santa Elena residents did not see themselves benefiting from the influx of tourists and money to the Preserve and the TSC. Consequently, some of these residents initiated a forest reserve on land owned by the local high school that was originally intended for an agricultural project. From the start, the Santa Elena Preserve was geared towards ecotourism; trails, guided tours, and a visitor center were developed early on. The reserve provides economic opportunities for local schoolchildren, who are trained to work as guides. In addition to having the support of the local community, the reserve has proven popular with tourists, and it offers something of “rustic” experience compared with the more developed Cloud Forest Preserve (Wearing and Neil 1999). Unlike the Cloud Forest Preserve, which was forced to respond to the tourist influx, the Santa Elena Reserve is the purest example in Monteverde of a protected area designed for tourism and local development.

On the other end of the tourism spectrum is the Children’s Eternal Rainforest, owned and managed by the Monteverde Conservation League. As the League was founded by biologists and conservationists, its first priority has been the protection of forest for biodiversity conservation. Tourism has been confined to the 30 hectare Bajo del Tigre forest parcel in Monteverde, an area used for guided night walks and environmental education. However, in recent years, the League has been seeking to expand tourism operations in the Children’s Rainforest. Visitors taking part in various educational or field programs currently are housed at relatively remote field stations at

San Gerardo and Poco Sol. The present director of the League, Carlos Muñoz, has visions of expanding tourism in the Children's Forest as a means of earning more money to support conservation. The League has had to cut back on its activities due to decreased funding, and tourism is seen as means to increase revenue and reach out to potential donors. Muñoz also hopes that tourism and the economic benefits that it brings in can encourage people to support conservation in the communities that border the reserve. Although problems are not as severe as in earlier years, some community members continue to hunt and remove plants from the reserve; there are also problems with water pollution and contamination from agrochemicals.³

Tourism Growth and the Monteverde Economy

Even without a directed effort to provide for social and economic development through tourism, the tourism boom has thoroughly transformed livelihoods in the Monteverde zone; roughly 90% of the regional population is dependent on the tourism industry at present.⁴ One notable result of this growth is the decline of the dairy industry in Monteverde; in the town of Monteverde there are only two dairy farmers remaining. Dairying does continue as an important regional activity but the centers of production have moved to more remote locations.⁵

The tourism boom has provided business opportunities for hundreds of individuals and families, and the number of hotels and restaurants has grown accordingly as tourist numbers have increased. By 1996, there were 26 facilities offering lodging, most of them along the road from Santa Elena to the Cloud Forest Preserve. More than 80% of area hotels have been built since 1990. Other tourist services have surged as well, and at present there are hundreds of businesses offering everything from handicrafts to horseback rides and DVD rentals. Since 1982,

³ C. Muñoz, personal communication, August 4, 2006

⁴ K. Masters, personal communication, July 5, 2006

⁵ J. Stuckey, personal communication

the women's handicraft cooperative CASEM (Comité de Artesanías Santa Elena-Monteverde) has provided employment for hundreds of women who manufacture souvenirs for tourists (Honey 1999). In contrast to foreign-owned resort tourism development common to places like Cancun or, increasingly, the Pacific Coast of Costa Rica, most of the tourism businesses in Monteverde have remained in the hands of local residents. Local ownership has meant that the financial "leakage" that occurs in many tourism destinations is less of a problem.⁶

The surge in tourism has also attracted significant numbers of economic migrants to the Monteverde zone. Drawn by the promise of steady work as hotel maids, taxi drivers, waiters and naturalist guides, migrants from other parts of Costa Rica or other countries have swelled the population of the Monteverde zone. These individuals and families have transformed the once sleepy towns of Santa Elena and Cerro Plano into relatively bustling commercial centers. At present, Santa Elena is the "downtown" of the Monteverde zone, featuring a supermarket, bus station, restaurants, guiding services, nightclubs and bars. As more and more people have settled in Santa Elena and Cerro Plano, the growth in these towns has sharply outpaced growth in the town of Monteverde. This has created a situation in which roughly 3/5 of the adult population in Santa Elena has arrived within the past 15 years.⁷ Many of the newer migrants may not be familiar with the traditions of community and self-governance that have been central to the development of the older Costa Rican and Quaker communities. It remains an open question if newer migrants, unaware of the importance of the protected areas to the tourism industry, are willing or able to support the community or conservation efforts.

⁶ J. Giles, personal communication, June 23, 2006

⁷ J. Giles, personal communication

The relationship between the protected areas, tourism, and the larger community is in the process of undergoing a significant shift. The first wave of Monteverde tourism, from roughly 1974 to 1990, was primarily made up of serious birders and naturalists who were expecting something of a “nature immersion” experience. These visitors were generally knowledgeable about natural history and arrived expecting to spend a significant amount of time seeking out quetzals or other species. Amenities were few and tourists had to be willing to “rough it” to a certain degree (Grosby 2000). In this stage tourism in Monteverde was essentially synonymous with visitation to the Cloud Forest Preserve. Most visitors were drawn to the area by the presence of the Preserve and the expectation of experiencing its unique flora and fauna on a first-hand basis.

The picture started to change in the early 1990s. The post-1990 tourism boom brought increasingly large numbers of visitors to the area who did not necessarily possess an understanding of the local ecology or any special interest natural history. More and more tourists began to arrive on package trips in which Monteverde was only a short stop on a countrywide bus tour of Costa Rica. As the number of tourists grew, tourist expectations also changed. Some longtime Monteverde residents speak of a shift in the “profile” of the typical tourist: whereas earlier visitors came to Monteverde with a strong natural history orientation and a willingness to embrace the rural nature of Monteverde life, recent visitors have tended to demand more amenities such as luxury hotel rooms, restaurants, and entertainment venues.⁸

Area entrepreneurs, impressed by the influx of visitors, created attractions to cater to the demands of the new breed of tourist. Within a span of a few years, the Cloud Forest Preserve was surrounded by an array of attractions including zip lines, canopy tours, insect museums, and

⁸ M. Hilgado, personal communication, June 16, 2006

horseback rides. The advent of these attractions has meant that the Preserve has lost its some of its standing as an obligatory tourist destination in Monteverde. While earlier visitors to Monteverde would usually spend a significant period of time in the Preserve, recent tourists may not even visit it. The number of tourists in the Monteverde area, calculated at around 180,000 for 2005 (ICT 2005), has been steadily growing while Preserve visitation, currently around 70,000, has only increased slowly since the big gains of the early 90s (Centro Científico Tropical 2006). It can be concluded that a significant number of tourists are spending time in Monteverde without visiting the MCFP.

The zip lines deserve some attention as illustrations of the changing character of Monteverde tourism. The zip line concept was pioneered in Monteverde in 1994 with the advent of the “Original” Canopy Tour. Zip line participants, strapped into a harness that is attached to a suspended metal cable with pulleys, travel at high speeds through the forest canopy. The attraction proved to be remarkably popular and subsequently several more zip lines opened in the area. While the zip lines are not nearly as ambitious as the high tech thrill rides found in theme parks, it can be argued that the advent of “adventure tourism” can be seen as a kind of “Disney-ization” of Monteverde. Adventure tourism, only loosely tied to a first-hand experience of the local ecology, presents a contrast with the earlier naturalistic character of Monteverde tourism. Unlike tourism in the Cloud Forest Preserve, zip line tourism is not dependent upon the local flora and fauna. A slight drop in tourist numbers for 2006 has been blamed on a number of factors, ranging from a weaker US dollar to more expensive international flights. However, one possible reason could be that as Monteverde tourism has increasingly followed an adventure model, the unique character that attracted visitors to the area in the first place has lost significance. Because adventure tourism is fairly generic and is relatively easily replicated in

other locales, zip lines can now be found all over Costa Rica and in neighboring countries such as Nicaragua. Tourists may be increasingly less willing to visit Monteverde when similar adventure tourism experiences can be had for less expense and with less logistical difficulties elsewhere.

Tourism Impacts: Conservation and Community

Amongst residents, there is a general, but tempered, recognition that tourism has fostered local support for conservation. Clearly, the situation is much changed from the era when settlers, both Costa Rican and Quaker, saw standing forest as little more than an impediment to development. The changed economic landscape provided by tourism has eased much of the pressures that in the past drove much of the conversion from forest to pasture, as non-consumptive land use has gradually replaced consumptive land use within the Monteverde zone.⁹ The relative prosperity of Monteverde, stemming from the dairy plant and tourism, has allowed conservation organizations to focus on land protection rather than facing local residents who are in poverty and cannot afford to support conservation efforts.¹⁰

However, many residents share the perspective that support for conservation in the Monteverde zone is relatively shallow. Longtime resident Jim Wolfe contends that the support for conservation is only as viable as the continued flow of money and jobs through tourism; the implication is that if and when Monteverde tourism drops off, so too will local support for conservation. Others have questioned the depth of conservation support amongst tourism business owners, claiming that many owners do not support the conservation organizations and protected areas that attract paying guests to Monteverde. However, some business owners have

⁹ J. Wolfe, personal communication

¹⁰ J. Stuckey, personal communication

been extremely active in supporting conservation efforts. The owners of the Ranario, a frog museum, were instrumental in founding the Costa Rican Conservation Foundation, an organization dedicated to the protection and reforestation of Pacific slope forests; the owners use a percentage of museum profits to support the Foundation's work.¹¹ Other business owners have maintained less enthusiasm for conservation projects. Although misguided, the assumption on the part of these owners may be that they do not need to support the conservation organizations as their businesses do not depend on conservation efforts or on environmental health.

While tourism has brought in a higher standard of living and provided at least some local support for conservation, Monteverde has experienced growing pains as development has taxed the local infrastructure. Vehicle traffic has increased dramatically on a road network that cannot expand due to constraints of the mountainous topography. Heavy traffic on the dirt roads gives rise to dust clouds in the dry season and deep potholes in the wet season. While it is possible that the dirt roads will be paved in the future, many residents are concerned that traffic accidents will increase in frequency with higher driving speeds on paved roads. There have been ongoing discussions of the merits and drawbacks of paving the road from the Inter-American Highway to Santa Elena and Monteverde; despite the obvious convenience of paving the road, the proposal has proven controversial. Many Monteverde hotel operators are concerned that if the road is paved Monteverde could be easily visited in one day, potentially sharply reducing the number of guests who spend at least one overnight in the area. Other residents share a general concern that paving the road would further erode Monteverde's sense of isolation and community unity.

Water pollution is also a major concern. The demand for water use has grown faster than the supply, and sewage systems are frequently not up to the task of treating water used by the

¹¹ D. Hamilton, personal communication, June 17, 2006

mushrooming resident and tourist populations. The results can be seen in colorful and often foul-smelling water in roadside drainage ditches or in local streams. In 2005, a crisis erupted when it came to light that a small group of local entrepreneurs had acquired government concessions to appropriate large quantities of water from two Monteverde streams; studies revealed that the quantities of water allowed by the permits could cause one of the streams to run dry during the dry season. Biologists were especially concerned about the effect of the concessions on local ecology because the streams pass through land in the protected area network.¹² Although the business owners insisted that they plan to use the water for agricultural use, which is allowed under the government permits, many residents suspected that the owners planned to use the water to enrich their own tourism businesses. In January 2005, protests erupted as residents stood in front of backhoes and filled ditches that were to be the final link in the water project. At present it seems that the project will not be allowed to go forward, but the crisis highlighted the tensions that have arisen in Monteverde due to tourism growth.¹³

Attempts at long-term planning have been initiated, notably with the “Monteverde 2020” program. This program, launched in 1990, was an attempt to foster coordination amongst Monteverde organizations. Organizers formed commissions to work on issues including conservation, roads, and tourism. After funding from the Interamerican Foundation ran out, the program languished due to internal tensions and other factors (Burlingame 2000b). Many Monteverde residents cite the lack of central planning as a serious impediment to quality of life and sustainability in the area, but recognize that with its economic and community resources,

¹² K. Masters, personal communication

¹³ K. Masters

Monteverde's planning situation is actually better than most regions of Costa Rica.¹⁴ There is also a recognition that Monteverde's challenges are second-generation problems; problems that come with the success that the area has experienced.¹⁵

From the perspective of some residents, a fundamental shift has occurred with the transition from a dairy farming to a tourism economy. The strong sense of community that accompanied the need for farmers to work together has been largely replaced by a more competitive mentality that the transition to a tourism economy has fostered.¹⁶ The close-knit community structure and social institutions that were instituted by the Quaker settlers continue, but in a social environment drastically changed by the influx of competitive businesses. This competitive mentality may be contributing to the difficulty in instituting community planning measures, as business owners may be unwilling to invest time and resources to the community.

Other social changes have arrived as well, including sharp economic inequalities between those benefiting from tourism and those who do not. In part because of the land purchase campaigns of the conservation organizations, land prices have skyrocketed, currently to an average of over \$15-\$20/square meter, comparable with prices in San José (Chamberlain 2000). These prices mean that buying a home in or near Monteverde is out of the reach of many ordinary Costa Ricans.¹⁷ Additionally, the tourism money flowing through Monteverde has contributed to rare outbreaks of violence. In March 2005, armed men attempted to rob the National Bank in Santa Elena. During three tense days when bank customers were held hostage

¹⁴ G. Vargas, personal communication, June 16, 2006; M. Hildago, personal communication; J. Stuckey, personal communication

¹⁵ B. Law, personal communication

¹⁶ J. Stuckey, personal communication

¹⁷ E. Vargas, personal communication, June 21, 2006

and a police raid, nine people were killed. While it is simplistic to blame tourism money for the robbery, it is evident that a large amount of cash from tourist dollars and inadequate security made the bank a tempting target for criminals. The bank robbery came as a shock to a community that is known internationally for its commitment to peace and non-violence. While hopefully an aberration, the event has driven home the fact that Monteverde is no longer an isolated community. Tourism has pushed Monteverde into the global spotlight, with all the benefits and drawbacks that come with international recognition.

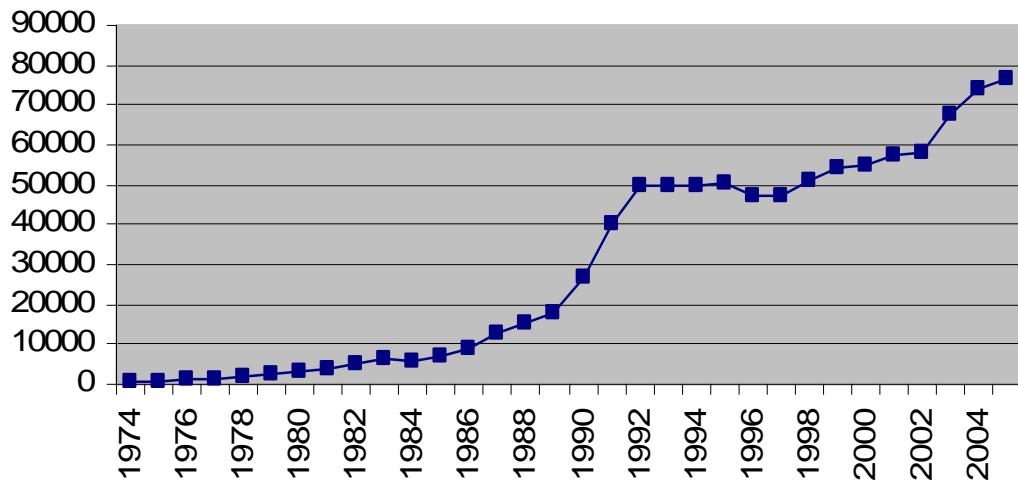


Figure 4-1. Number of visitors per year, Cloud Forest Preserve. [Data from Tropical Science Center].

CHAPTER 5

VIEWPOINTS ON CONSERVATION

“Biologists” and “Social Developmentalists”

Monteverde’s unique community structure harbors a wide diversity of viewpoints about conservation and development that mirrors the variety of uses of the local protected areas. Possibly the clearest distinction becomes apparent when residents talk about what “conservation” means. Several foreign-born biological scientists in Monteverde speak of conservation primarily as an activity to protect biodiversity: local flora and fauna.¹ Other residents, mostly Costa Ricans, speak of conservation in humanist terms: the continuance of agricultural livelihoods, healthy families, and education.² On the one hand, some scientists are frustrated that sometimes residents do not recognize that their economic security depends on the protection of the biodiversity that brings tourists to Monteverde.³ On the other hand, local agriculturalists sometimes accuse scientists, who they call *biólogos* (biologists) of not being concerned about farmers and their livelihoods. San Luís resident Gilbert Lobo emphasizes how his world view, which considers humans as part of the natural environment, differs from the conception that conservationists have of protected areas without people.⁴ These differences among Monteverde residents lend an undercurrent of tension to Monteverde’s conservation victories.

The development of the Monteverde Conservation League captures some of the diversity of viewpoints of how residents understand conservation. The League’s land purchase campaigns are resented by some residents who sold land to the organization in the 1980s when land prices

¹ A. Masters, personal communication, June 26, 2006; K. Masters, personal communication

² M. Brenes, personal communication, July 7, 2006; G. Vargas, personal communication

³ K. Masters, personal communication

⁴ G. Lobo, personal communication

were low, only to discover that the land has sharply increased in value since the tourism boom. Some farmers do not see themselves benefiting from the land that is protected for conservation and tourism, and regard the ownership of the protected areas by conservation organizations as essentially undemocratic as it limits the rights of farmers to live on the land (Vivanco 2002). In contrast, the League's windbreak campaign is still highly regarded by area farmers and has garnered their backing for conservation programs that work with farmers and benefit agriculture.⁵ This "social developmentalist" vision of conservation as an activity that supports sustainable rural livelihoods is at the core of many resident's views.

The director of the Santa Elena Coffee Coop, Guillermo Vargas, speaks about conservation as the maintenance of agricultural livelihoods in the face of the rapid expansion of the tourism industry. Vargas describes a small conflict over the League's environmental education program, introduced to local schools in the mid 1980s. Some Monteverde biologists felt that the program should focus on teaching the ecology of the cloud forests, while others such as Vargas thought that the program should emphasize reforestation on farms and sustainable agricultural livelihoods. The conflict was eventually resolved with the recognition that environmental education could teach about both ecology and agriculture (Burlingame 2000). Vargas also promotes both environmental and social health through the activities of Café Monteverde, a coffee grower's cooperative. The coop obtains higher prices for its brand through collective selling efforts and certification to uphold equitable labor practices. Vargas does not see a contradiction between the goals of social equity and environmental sustainability. Although the distinction between "biologists" and "social developmentalists" continues today, it has perhaps

⁵ G. Lobo, personal communication; O. Salazar, personal communication

lessened in intensity due to a common concern that too heavy a reliance on tourism has the potential to threaten both biological and economic diversity.

Even tourism, which has been heavily focused on showcasing the local flora and fauna, has begun to reflect the diversity of the Monteverde zone. Several area farmers have been experimenting with “agrotourism,” in which tourists visit farms to learn about coffee production, dairy cattle, and reforestation.⁶ In San Luís, tourists and educational groups are taught about sustainable agriculture at Finca la Bella, a 50 hectare community of 24 families. Finca la Bella residents are not allowed to cut down forests or to sell their land without permission from the community. The goal is to provide land to formally landless farmers, and to keep the land in the hands of locals who want to practice small-scale sustainable agriculture. Visitors, mostly from educational programs, stay at farm residences and help to provide income to the resident families.⁷ In a sense, agricultural projects such as Finca La Bella are creating “protected areas” in which traditional livelihoods are sheltered from economic takeover and land purchase by foreigners. As the Monteverde economy has embraced a model that caters towards the demands of foreign tourists, these projects help maintain the health of local communities, in part using resources that tourism brings to the area. It is the vision of social developmentalists that agrotourism can contribute to the protection of agricultural livelihoods just as ecotourism can contribute to the protection of biodiversity.⁸

Monteverde as Model?

Monteverde holds a privileged place in discussions about conservation and tourism. Many scholars look at Monteverde’s experience, particularly the development of tourism, as evidence

⁶ H. Brenes, personal communication, July 28, 2006

⁷ G. Lobo, personal communication; O. Salazar, personal communication

⁸ G. Vargas, personal communication

of the area's success in conserving its natural resources and improving standards of living (Aylward et al. 1996; Budowski 1992, Evans 1999, Honey 1999). While this perspective is generally shared by Monteverde residents, it tends to be tempered by the recognition of the negative consequences of the rapid growth that the area has experienced. Some observers note that other regions that have looked to Monteverde as a model have only considered the positive aspects, disregarding the negatives, such as increased crime, pollution and income disparities.⁹ Furthermore, long-time residents are aware that Monteverde's unique history has given rise to its successes. The slow development of the protected area network that was initiated with the Quakers and continued through the efforts of determined individuals and organizations cannot simply be reproduced on a short time scale. Resident John Trostle jokingly suggests that if other areas would like to recreate Monteverde's success, all they have to do is import a group of Quakers and conservation biologists and have them live there for 50 years or so. Others point out that Monteverde's isolation and tradition of forming local organizations to confront problems have given rise to a community resilience and strength that has led to its success.¹⁰ Until the tourism boom, Monteverde was essentially ignored by the central government and only within the past few years has the region begun the process of creating a local government, so community self-reliance was a necessity.¹¹ The isolation, tight-knit community structure, and biologist influx are historical factors that are unique to Monteverde and are unlikely to be repeated in other locations. Regions that are suffering from poverty, instability, or violence usually do not have the luxury of the kind of intensive community efforts that have led to Monteverde's conservation successes. Even within Monteverde, the situation is changing rapidly

⁹ R. Bolaños, personal communication

¹⁰ J. Stuckey, personal communication

¹¹ J. Giles, personal communication

with the globalization of a once-isolated region and the erosion of community structures that fostered conservation efforts. Due to these factors, Monteverde cannot be simply replicated as a “model” for conservation or sustainable development. However, perhaps more general lessons can be drawn from Monteverde: While not without its share of conflicts, a protected area complex that has arisen through local needs and community action has proven flexible enough to provide diverse benefits including watershed protection, biodiversity conservation, and economic development. Park planners can take inspiration from Monteverde’s long history of protected area conservation that has provided environmental, community, and economic benefits for many decades. Conservationists can also learn from Monteverde’s planning woes and challenges in crafting a protected area complex that is resilient enough to respond to exogenous forces such as climate change.

Monteverde’s conservation history reveals that protected areas are not fixed entities, but instead are shaped by the priorities and goals of individuals, organizations, nations, and international trends. The example of Monteverde belies the common understanding of protected areas only as recreational parks or as fenced-off land. While Monteverde protected areas display some of these characteristics, they also have served, and continue to serve, as watershed protection areas, drivers of economic growth, and vital habitat for wildlife. They serve both international tourists and locals in a multitude of different ways. If the hopes of conservationists become reality, they could serve as the centerpiece of a regional conservation network that protects migratory species. They are also sources of controversy as they reflect different philosophies of conservation practice. While a study of Monteverde’s present situation is informative, only an investigation of the area’s history reveals the possibilities, as well as the limitations, of the Monteverde’s conservation efforts. Conservationists and scholars benefit from

better understanding the development of Monteverde protected areas and the imperfect victories that have been achieved through them.

APPENDIX RESEARCH METHODS AND SUBJECTS

The primary methods for this project were the study of various written sources and 40 first-person interviews carried out with Monteverde residents. The interviews, generally lasting about 45 minutes each, were recorded onto a digital voice recorder, and then transcribed. The interviewees were selected to provide a diverse sample of residents, including Costa Ricans, Quakers, farmers, biologists, teachers, conservationists, and tourism entrepreneurs. Generally, names of potential interviewees were offered by other residents (snowball sampling). Interview questions were not standardized, but instead were tailored to each interviewee. Information gained from the interviews falls into two general categories: (1) historical information, (2) viewpoints about conservation practice in Monteverde. Historical information was strengthened with corroboration from multiple interviewees and/or written sources. The unique insights gained from first-person interviews allowed for the creation of a detailed portrait of Monteverde's conservation history and an intimate understanding of the interaction between community and protected areas.

The following chart lists, in alphabetical order, the interviewees' names and general affiliation in Monteverde.

Table A-1. Monteverde residents interviewed and their affiliation.

Name	Affiliation
Fermin Arguedas	Costa Rican settler, farmer
Irma Arguedas	Costa Rican settler
Rafael Bolaños	Former director Cloud Forest Preserve
Hernan Brenes	farmer and agrotourism entrepreneur, La Cruz
Milton Brenes	project leader/gardner at Cloud Forest School
Victoria Brodus	employee, Monteverde Conservation League
Ruth Campbell	hotel co-owner
Eladio Cruz	biological aide, plant expert
Deb Derosier	biologist
Mercedes Diaz	environmental education director, Cloud Forest Preserve
Jere Gilles	visiting professor
Karen Gordon	educator
Benito Guindon	Quaker
Wolf Guindon	Quaker settler, conservaitonist
Carlos Hernandez	director, Cloud Forest Preserve
Marvin Hildago	Costa Rican director of Biological Station
Richard Laval	biologist
Bob Law	conservationist
Giovanny Leiton	San Luís resident
Melvin Letion	natural history guide
Martha Letion-Campbell	Quaker farmer
Gilbert Lobo	resident, Finca La Bella, San Luís
Alan Masters	biologist
Karen Masters	biologist
Carlos Muñoz	Director, Monteverde Conservation Leauge
Alan Pounds	biologist
Yadira Ramirez	employee, EcoBamboo, San Luís
Marvin Rockwell	Quaker settler, business owner
Mary Rockwell	Quaker settler
Oldemar Salazar	resident, Finca La Bella, San Luís
Joe Stuckey	Quaker dairy farmer
Sue/John Trostle	Quakers, community activists
Guillermo Vargas	Santa Elena Coffee Coop director
Noe Vargas	community activist
Mark Wainwright	biologist
Dulce Wilson	conservationist
Jim Wolfe	owner of Butterfly Garden
Willow Zuchowski	biologist

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